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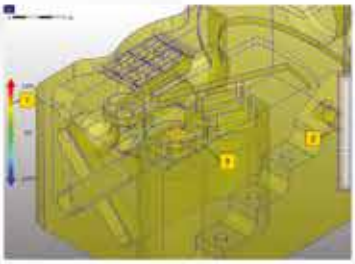

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Publisher's Message

Welcome to the third issue of Automate Asia Magazine! Greeting to all of our readers. As we all know, there is pneumonia of unknown cause called COVID-19 widely spread early this year. It has affected the people and the countries' economy greatly. We hope that everyone will remain strong and support each other in the time of the outbreak.

Omron Electronics Sdn Bhd has been present in Malaysia for more than 30 years. Their company focused on assisting customers to reduce cost and to achieve higher quality together with productivity. We had a good chat with Mr. Tiong Khe Hock, the Managing Director of OMRON on their objective to create eco-friendly products that contribute to global warming prevention, their newly LD-250 Mobile Robot and their approach to the small factories. For the next interview section, we had Mr. Ryan Lee, the Business Development Manager at Emerson on their view on whether the implementation of IIoT requires a large investment and how IIoT can help the current demand in the industry.

It is undoubtedly that COVID-19 has exerted the influence on the broader economic region, including Southeast Asia. The import and export of the main industry is greatly affected by the impact of the virus. Nevertheless, thanks to advanced technology, people still have access to information without needing to go to different places such as conferences, events, and meetings. Although the industry is affected, we must show our support for the growth of the economy therefore Automate Asia Magazine is part of the platforms that help you to gain exposure to the current issues.

On behalf of the editorial team, I thank you for your massive support to Automate Asia Magazine. Stay in touch with us on www.asiaautomate.com for more updates.

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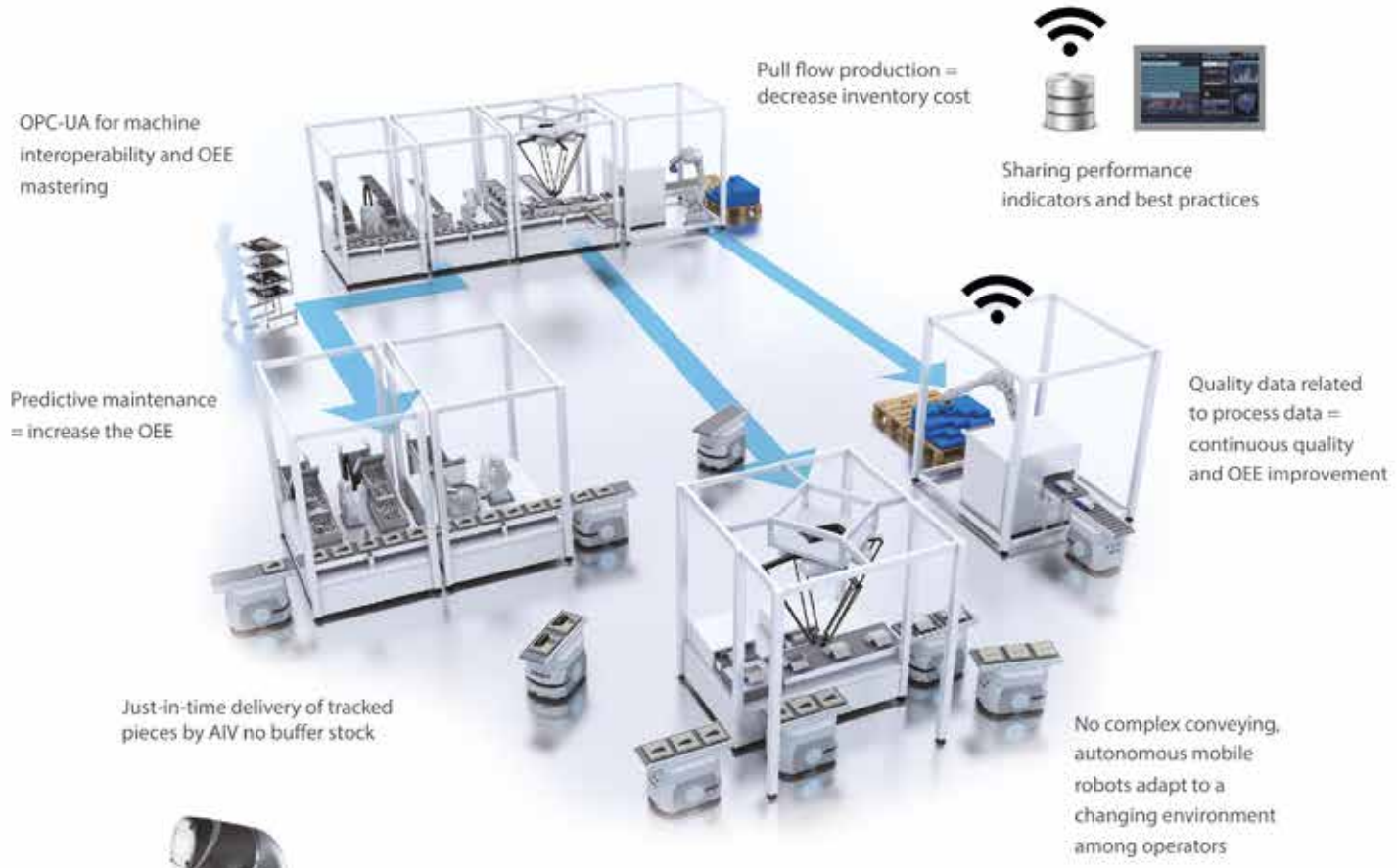

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At Hannover, Indonesia to Show Its Mettle in Industry 4.0

Workers assemble tools and equipment in a hall at the Hannover exhibition grounds at the conclusion of an international trade show. (JP/Dwi Atmanta)

Being a partner country of Hannover Messe 2020, Indonesia will feature more than 170 exhibitors, which will demonstrate their industrial capability during the annual trade fair to be held in the German city on April 20-24.

Indonesian Ambassador to Germany Arif Havas Oegroseno said the country's industrial players, which had been selected by an interdepartmental team at home, would not only showcase their achievements in Industry 4.0 technology, but would also offer business and investment opportunities to the world.

"We believe that strong cooperation and connections between supply and value chain providers will further accelerate the world's economic growth," Arief told a media conference.

Last year Indonesia launched its ambitious "Making Indonesia 4.0" campaign, highlighting the rapid transformation toward the fourth industrial revolution that it needs to become the world's 10-largest economy by 2030. The national industrial shift is supported by a strong digital economy, as evident in its fast growing e-commerce and fintech sectors. Google and Temasek have projected Indonesia's digital economy to cross the US$130 billion mark by 2025 from the current $40 billion.

Arief said the huge market, productive and talented population, abundance in natural resources and space, and political stability would boost Indonesia's value as a place to invest and do business in during this digital era.

In the five-day event, Indonesia will occupy a large part of Hall 21, where organizers will set up a real, working 5G network, according to Deutsche Messe CEO Jochen Köckler. For the second year running, Hannover Messe will see 5G testbed infrastructure.

"Network equipment providers and users use the testbed to demonstrate the kinds of functionality that the new mobile telephony standard will be able to deliver," Köckler said.

Some 5,500 companies from across the world will take part in the trade fair. Under the lead theme of "Industrial Transformation", the upcoming show will spotlight all the latest trends and topics, such as Industry 4.0, artificial intelligence, 5G and smart logistics.

President Joko "Jokowi" Widodo is scheduled to attend the opening of the event as part of his trip to Germany aimed at boosting ties between the two countries.

Source: www.thejakartapost.com

Big Data

Can Become Indonesia's Gold Mine

From left, Research and Technology Minister Bambang Brodjonegoro, Shopee Indonesia director Handika Jahja, University of Indonesia's School of Computer Science director Denny speak to the press in Jakarta. (JG Photo/Jayanty Nada Shofa)

Generating a data-savvy workforce to face the so-called Industry 4.0 has become one of the government's top priorities, Research and Technology Minister Bambang Brodjonegoro said.

As more and more transactions happen online, the marketplace industry is expanding at a rapid pace. Along with that comes big data that companies can extract to reveal consumer trends and patterns.

This fosters the need for data analysts, particularly in consumer-based platforms.

"Big data can potentially become Indonesia's goldmine. Analyses of data can help determine people's behaviors, something that businesses would do well to exploit. Data analysis is also vital in policy-making for the government to determine which policies meet public aspirations the most," Bambang said at his office in Jakarta.

However, Indonesia still doesn't have enough home-grown data analysts. One of the reasons is because tech companies tend to keep hiring foreign ones, according to the minister.

"To keep up with increasing demand, these companies often hire foreign data analysts. We just don't have enough of our own," Bambang said.

The minister said he was aware many Indonesians are worried Industry 4.0 would only result in more job losses.

"This is why we need people to understand that data analysts are in very high demand at the moment," Bambang said.

The government recently partnered with online marketplace Shopee to hold the National Data Challenge 2020 in March.

The competition will involve 3,000 high school and university students coding real data mined from the Shopee platform.

"We are aware of the importance of big data. A more data-savvy workforce will help the national economy. We can offer hands-on experience for young people who are interested to become data analysts," Shopee Indonesia director Handika Jahja said.

Source: jakartaglobe.id

Sparking Malaysia's Next EEV Journey

Customised incentives framework has spurred the next phase development of the energy efficient vehicles (EEVs) in the country, Malaysia Automotive, Robotics and IoT Institute (MARii) chief executive officer Datuk Madani Sahari said.

The framework was critical in driving the development of EEVs comprising internal combustion engine, hybrid and electric powertrains, among others, Madani added.

Tax incentives have been given by the government to contract assemblers such as Sime Darby Bhd's Inokom, Naza Group and DRB-HICOM Bhd after their applications were evaluated by MARii in accordance with the cost-based analyis (CBA).

Under CBA, MARii accesses assemblers based on their investment involving local assembly manufacturing, level of localisation content, local job creation, export volume/market, and new technology utilisation, among others.

The local content of the assembled cars are reassessed by the government before their prices are fixed.

This allows the government via the Automotive Business Development Committee (ABCD) to deliberate the tax incentives for new completely knocked down (CKD) or locally-assembled vehicles.

ABCD comprises representatives from International Trade and Industry Ministry, Finance Ministry, MARii, Malaysian Investment Development Authority and the Royal Malaysian Customs Department.

Car makers also seek incentive via the Industrial Adjustment Fund from the government to assemble vehicles locally.

Madani said electrification would bring in a broader technology requirement, such as power grid enlargement, faster telecommunication speeds, big data management and analysis.

He said new technology requirements include manufacturing and development of products specific to electro mobility.

"The growth of EEV penetration in Malaysia was contributed by the National Automotive Policy's (NAP) framework of customised incentives in 2014, in which car makers that invested in high value activities within Malaysia would be given incentives that were tailored to their individual business models," he told the New Straits Times recently.

Madani said Malaysia was in a better position to encourage the development of electro mobility due to higher electric vehicle (EV) awareness in the country.

"This will be reflected in the upcoming revision of the NAP, due to be announced soon - based on the same customised incentives framework, but with a broader technology," he added.

He said EV development must be spurred in a conducive and safe manner for both consumer and industry players.

"The new revision of the NAP will continue on its learning curve to create an electrification model that is sustainable for buyers of electro mobility, as well as jobs and businesses in the sector so that they can one day lead the lifestyle of electro mobility," he said.

Malaysia Automotive, Robotics and IoT Institute chief executive officer Datuk Madani Sahari says electrification will bring in a broader technology requirement such as power grid enlargement, faster telecommunication speeds, big data management and analysis.

Madani said the government planned to develop an EV Operability Centre (EVIC), a shared test centre for the development of EVs and EV-related products and systems as part of its roadmaps of the NAP.

"The EVIC will be able to test vehicle-grid interoperability, cybersecurity and communication safety in an EV ecosystem, leveraging on big data management to allow real-time reporting and accurate decision making throughout the ecosystem," he said.

The EVIC will also feature an EV test bed, complete with buildings, charging stations, solar powered energy farming and storage, and weather simulators.

"It will also include data-driven, smart grid integration solutions that allow for measurement and oversight of the entire chain of electro mobility, from the point energy is farmed, to the point where energy is consumed in the EVs," he said.

Madani said new NAP would continue its focus on development of ecosystems for Next Generation Vehicles, Mobility as a Service (MaaS), and Industry 4.0 technologies, while continuing its focus on enhancing the development of EEVs.

"The more advanced EEV powertrains, such as those in full battery electric vehicles and fuel cell based vehicle technologies, have been gaining popularity within global markets where fuel economy has become a cost burden," he added.

Citing an example, he said the 2019 International Motor Show in Frankfurt had shown a higher level of electric models compared to previous years - as fuel costs and carbon footprints have become a core issue in the region.

Madani said there was not much public traction on EVs in Asean, including Malaysia when the NAP 2014 was formulated.

"Therefore, there was a requirement to formulate EV policies in line with the remaining popularity of internal combustion engines. The NAP2014 focused on a broader array of technology on energy efficient products, which included electric vehicles," he said.

In 2015, he said MARii had partnered with technology organisations in Australia on the development of an electric bus prototype to spur localisation of electric vehicle systems and components.

"So far, the project has reached its final stages of research and development, and is expected to be ready for the commercialisation process within the year.

"There have been several other privately-driven initiatives to develop electric commercial vehicles in selected test beds around Klang Valley," he said.

He said MARii also led collaborations with various parties to allow the public to overcome their anxiety with battery range and cost restructuring of the electro mobility lifestyle as part of the efforts to spur consumer awareness of EV use.

"These collaborations included encouraging electric car sharing programmes, improving public charging facilities and encouraging green vehicle parking spots within densely-populated parking areas," he said.

Source: www.nst.com.my

How Artificial Intelligence is Impacting Southeast Asia's Biggest Players

Indra Utoyo, Director of Digital Technology and Operations at Bank BRI discusses the increasing prominence of AI in the financial services industry, and how digital solutions have allowed for financial services providers to broaden their reach beyond the traditional customer base of the mass affluent and HNWIs as the industry witnesses an evolution in the relationship between firms and their end clients.

Artificial intelligence (AI) has permeated nearly every technological institution we are in touch with today, and the finance world is no different. Plenty of big banks around the world are using AI to communicate with customers, access and predict spending habits, and even decide on personal and business credit scores.

But the truly exciting potential of AI sits squarely within microfinance institutions (MFIs) and their customers. By and large, these are people living in rural and remote areas of emerging markets like Indonesia. They earn and spend less than a few dollars per day and until just recently were completely unbanked and off the formal financial grid.

Most MFIs don't have access to troves of reliable data, unlike established banks that serve hundreds of thousands, if not millions of customers. But their need for data is just as palpable. Big data and consumer behaviour information is a necessary tool for helping those in rural and remote areas become more financially and (if all goes well) economically included.

Traditionally, loan officers would manually review new applicants based on a variety of factors such as a person's credit score, debt repayment history, and more. But how can you analyse credit risks accurately if the customer has no formal credit history to draw from?

AI-driven analytics are powering transformative changes in this area. Now better equipped with capabilities to generate trend analysis, modelling, and predictions with even the most basic or limited source data. Algorithms can examine people's checking and savings accounts to understand individual spending and saving patterns. They can determine how and when applicants pay their utility bills, top-up their pre-paid mobile credit regularly, or indulge in casual shopping, and from there make what we call "alternative credit assessments."

AI's Role in Economic Inclusion

The Centre for the Study of Financial Innovation, a non-profit think-tank, explains in its report on AI in financial services succinctly how machine learning and AI can be used to an MFI's advantage. When assessing whether an individual or company is likely to repay a loan, machine learning enables creditors to analyse a much larger number of data points, perform more complex pattern analysis, and make decisions more quickly – sometimes instantly, the report says.

It goes on to say where applicants lack traditional credit histories, machine learning algorithms are increasingly being deployed to analyse alternative data – from utility bills to data from social media accounts – to evaluate creditworthiness.

The use of AI in credit scoring systems, fraud detection systems, and merchant assessment systems has been especially innovative, and in many cases, extremely successful, in recent years.

Cutting edge tech also introduced algorithms to help financial institutions assess non-numerical factors in an applicant's creditworthiness and risk levels. This has led to fewer missed opportunities for applicants who might otherwise have been denied a loan and has empowered banks and MFIs to be more proactive in meeting the customer's needs.

Take, for example, Alibaba's financial services arm, Ant Financial. Today, it's the highest valued fintech company in the world. In 2018, Ant Financial shouted from the rooftops about how AI has helped it process huge amounts of transaction data generated by small businesses on its platform. This led to the company lending over USD13.4 billion to nearly 3 million small businesses.

Loans as small as USD50 could be processed within just a few minutes thanks to Ant Financial's algorithms, which also calculated, assigned, and stored business credit scores to improve decision-making on every loan. The integration of AI in every step of the lending process generated a default rate of just around 1%, compared to an estimated average of 4% worldwide.

New Grounds for AI-Powered MFI services

Right here in Indonesia, the tech is blooming right in front of us, in the palms of our hands. Lenddo, a Singapore-based platform that processes hundreds of thousands of loan applications every month, partnered with major credit scoring agency Experian in 2017 to bring its financial services to the unbanked populations in Indonesia and Vietnam. Lenddo uses social media and smartphone records to determine a loan applicant's financial stability and is backed by banks and other lenders.

Even closer to home, peer-to-peer (P2P) lending apps exploded after 2016, with numerous apps such as KoinWorks, Akseleran, Investree, and Modalku storming the gates. These apps set off sparks in the market when they began using AI to evaluate creditworthiness and were very much in tune with the interests of local borrowers.

However, wariness and rationality have since set in around the P2P business model -- which until recently was largely unregulated -- as Indonesia has seen how allowing the market to grow too freely resulted in multiple infamous scams in markets like China and the US. Some MFIs have tuned into more sustainable answers to P2P lending, such as rolling out their own microloan mobile apps.

A massive surge in newly-banked customers in recent years, thanks to the proliferation of mobile, internet, and MFI services makes Indonesia the perfect sandbox for AI-powered services to flourish. Many new customers have no formal credit history, but they have access to the web, their own social media accounts, and they frequently send and receive money via mobile e-wallets.

Thanks to AI-powered access to this information, revenue has begun to boom from the rural agent networks of ASEAN's microfinance players. This was the case for Indonesia's largest agent network, as we saw revenue spike from USD1.5 billion in 2017 to a whopping USD36 billion in 2018. In 2019, the network produced a transaction volume of approximately USD44.8 billion.

Amid the excitement about how AI can create more financial inclusion however, we must not get too carried away. Automation has plenty of great benefits, but it must be a collaboration between humans and machine learning, instead of swapping out one for the other.

Banks in Indonesia are more than aware of the opportunities digitising their services, with 84% of Indonesian banks reporting they would be likely to invest in transforming their tech back in 2017, according to a PwC report.

If we can strike this balance, then big banks and formal financial institutions have the fuel to move faster and deeper, with AI as the key to organising and analysing massive treasure chests of consumer data.

Source: www.hubbis.com

Malaysia Lays Out Plans for Next State-Level Smart City Project

As highly-integrated urban spaces, smart cities will be key to supporting tomorrow's businesses, as digital becomes less an initiative, and more part of their DNA.

Underpinning these urban landscapes will be the core concepts of sustainability and efficiency. Data collected through sensors will feedback information enabling analytics programs to optimize transport and energy systems.

While the vision painted by smart cities can seem like a utopian dream, the reality is, in Asia, they are already becoming a reality — Malaysia, for one, has recently revealed the groundwork for its next smart city project in Johor.

For Johor's Head of State Government, Sahruddin Jamal, the smart city concept is not just a 'nice to have,' the integration of technology in public spaces will actually be key in improving public safety and quality of life.

To that end, the city will be developing its use of Internet of Things (IoT), artificial intelligence, big data, advanced analytics, autonomous vehicles, and 5G technology. This, of course, sounds like an ambitious undertaking — and it will take a while before this technology is ready for deployment. However, Jamal says these technologies combined will enable a move towards smart waste management, dynamic public transport systems, efficient water treatment cycles, energy-efficient buildings as well as cashless communities.

The project laid out for Johor is in line with the 12th Malaysia Plan 2021-2025, which focuses on economic empowerment, environmental sustainability, and social re-engineering. In achieving those key areas, the development will entail the dimensions of smart governance, smart economy, smart environment, smart mobility, smart people and smart life.

One of the most important players in the development process is the Iskandar Malaysia Comprehensive Development Plan. Jamal, in a speech presented at a recent event, said, "Given that there are many students in Iskandar Malaysia, we also need to look at the definition of Smart City from this point of view as our way of thinking and implementation to achieve Iskandar Malaysia's vision in 2025."

Malaysia's Johor is not the only state that is pursuing smart city development projects. Previously, two other states, Sabah and Sarawak, have been promoting consistent smart city efforts by improving their public services and management systems using digital solutions.

It is expected that more urban areas in the country will emerge, especially with the rollout of 5G. Businesses that are looking to expand and grow their operations should keep Johor's smart city as well those in Sabah and Sarawak in mind.

This is because these smart cities can extensively stimulate economic growth and provide the necessary infrastructural support for the deployment of advanced, intelligent and connected digital solutions.

Source: techwireasia.com

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Artificial Intelligence:

Potential Intensifier of Strategic Dynamics in South Asia

With growing dependency on artificial rationalization, human reasoning and decision-making is under continuous suppression. Where machine learning and deep learning tends to empower machines to carry out functions and break assigned tasks into easier ones, it nevertheless fastens the route towards a world order that is likely to be in absolute control of Artificial Intelligence (AI). Does it indicate cutting humans entirely out of the loop?

This deliberate submission of power to machines has some assured repercussions in the realm of strategic stability which rational actors must take into consideration. The simulation of human cognition – the capacity of human mind to learn, interpret and reason- in machines is what artificial intelligence refers to. It eventually stands as a defining feature of modern societies. By the enhanced use of algorithms, AI optimizes the ability for collecting avast range of data whether numeric or categorical in the form of big data to measure the information and derive results accordingly. Thus, Artificial Intelligence is itself emerging as a vast technological industry for creating intelligent machines. Such machines would be capable of independent decision-making based on the level of subjectivity conceded to AI. This subjectivity defines the rationale of decisions made by machines. Along with enhanced precision and prompt responses, it suggests that over-reliance on AI could probably take the shape of absolute control.

Artificial Intelligence (AI) in the International Arena (IA) acts as a modifier of global affairs and challenges whether bilateral or multilateral. Additionally, it is transforming military strategies with its significant precision and speed via contracting the action-reaction loop. As such AI is being developed for assessing and responding to problems with minimum human supervision. Which, the other way, predicts an autonomous crisis escalation with minimal or no chances of containment. One such example is the development of lethal autonomous weapon systems

(LAWS). Analyzing the broad view of global affairs under the predominant existence of nuclear weapons, robotic and computational technology is so far effectively assisting states in maintaining the safety and security mechanisms of nuclear and fissile material/data. It is evident from the events of the cold war era that other than human error, technological error within the realm of nuclear strategy could easily escalate towards nuclear war fighting or its accidental use with a catastrophic domino effect. Despite the precision, speed and human-like reasoning, machines are likely to lack a considerable situational variation with respect to risk assessment of actions and their reactions. The reliance on artificial rationalization means increased unpredictability and competition that resultantly means greater strategic instability around the globe.

Source: moderndiplomacy.eu

Strategic stability demands a credence among nuclear weapon states that their adversaries would not likely be able to undermine their nuclear deterrence by any means. This surety is crucial in the case of South Asia. Comprising of three nuclear weapon states with inter-state rivalries, South Asia demands a stable strategic environment which requires a considerable level of risk assessment and management. Machine learning and big data analysis are some already adopted strategies in South Asia as in other parts of the world to predict and track an adversary's aggressive posturing. Although, it is technically challenging for a state to be able to locate and target all of its adversary's dispersed nuclear weapons and delivery systems during crisis-time, AI maximizes this detection and tracking ability. Hence, it could provide a win-win strategic advantage to one party over the other. This likelihood convinces states to pursue greater reliance on advanced AI-supported defence technology while greatly increasing the chances of a possible malfunction or misinterpretation of command.

Strategic stability of South Asia is already fragile. The prediction dynamics of this strategic stability after AI inception has long been a bone of contention. It can be traced that China's New Generation Artificial Intelligence Development Plan and its AI advancements within strategic realm could lead to more aggression stemming from India's hegemonic designs. Resultantly, Pakistan's nuclear deterrence would be reasonably undermined. This can lead to a mutual fog of war in terms of strategic vulnerabilities and disparities. Moreover, the cyber-vulnerabilities and cyber-breach events in South Asia already foretell the emerging uncertainty currently undermining strategic stability in the region.

Furthermore, the prevalence of AI within nuclear realm elevates the risks of an accidental or unauthorized use of nuclear weapons which as an outcome could trigger escalation. Incorporating AI within command and control mechanisms of nuclear weapons states would possibly increase the risk of a misinformed and irrevocable weapons launch. China in pursuit of advanced AI, a bellicose India and balancing Pakistan (vis-a-vis India) would all vulnerable to such misadventures inflicted by an over and uncontrolled reliance on AI. In this regard, keeping the strategic stability of South Asia intact is a much more challenging matter than anywhere else on the globe.

Being an alluring domain, Artificial Intelligence has become a necessary evil which based on the above discussed risks still poses an existential threat to humanity. It presses states around the world and particularly in South Asia as a technologically nascent yet rapidly advancing region to compete in such a way that it may eventually turn into their absolute submission to AI. Another alarming aspect is that ultimately human intelligence adheres to the necessity of the human security perspective whereas AI, if not programmed correctly, may not recognize or emphasize the human safety or security enough. Instead of relinquishing total control and submitting to machines intentionally which could be real risk attracting phenomenon, Artificial intelligence must be employed to assist and empower human cognition to better respond to the collective and individual strategic challenges.

Self-Driving Robots Can Disinfect Hospitals with UV Lights

Drones and self-driving robots used to fight coronavirus in China

China is deploying robots and drone s to remotely disinfect hospitals, deliver food and enforce quarantine restrictions as part of the effort to fight coronavirus.

Chinese state media has reported that drones and robots are being used by the government to cut the risk of person-to-person transmission of the disease.

There are 780 million people that are on some form of residential lockdown in China. Wuhan, the city where the viral outbreak began, has been sealed off from the outside world for weeks.

The global death toll from coronavirus topped 2,100 people this week, with over 74,000 infected.

Drones used to enforce quarantine

Global Times reported on viral videos showing drones with loudspeakers directing individuals in rural areas to go back inside. Officials are allegedly using the technology to supervise and give orders remotely to civilians.

There have also been reports of drones using thermal imaging to detect people with fevers from the air.

Drones have joined fight against novel #coronavirus (COVID-19) in China. Equipped with thermal imaging technology, they can detect those with a fever up in the air. Check out drone patrol in central China's Hunan

These viral videos could "absolutely be real" said drone expert Andy Miah, author of Drones: The Brilliant, the Bad and the Beautiful.

"I think they're an incredibly appealing tool for the law enforcement industry," Miah told Dezeen. "The drone gives the police force a capacity to roam and be present in a way that no other means of movement have allowed in the past."

Remote-controlled tanks disinfect streets

Unmanned vehicles, both arial and terrestrial, have allowed the Chinese government to reduce the number of people put at risk of catching the virus. Miniature, remote-controlled tanks have been seen on the streets of Taiyuan in northern China. Directed by staff wearing hazmat suits, the tanks made by Shanxi Tianyi Technology can reportedly disinfect 50,000 square metres in an hour.

"We began using them for disinfection and disease-prevention in Taiyuan on 4 February," deputy secretary-general of the Shanxi Province Unmanned Vehicle Association Hou Yongei told AsiaWire.

"Twice a day, we send them into gated communities where there have been confirmed cases."

Drones deliver light and food

Drones have allegedly been used to hover over the construction sites for two emergency hospitals being built in Wuhan and provide light and construction staff worked through the night. One hospital was built in just nine days.

According to Reuters, a robot called Little Peanut has been used to deliver food to occupants of a hotel in Hangzhou where over 300 quarantined passengers of an infected flight are staying.

Amid a novel #coronavirus outbreak, robots are deployed to deliver meals to travelers in isolation at a hotel in Hangzhou, China. #pneumonia

"What we've seen over the last five years, is a growing deployment of drones in circumstances where we'd rather humans were not put at risk," said Miah.

"While it makes a lot of sense, the kind of future that this presents us with is one where we use robots instead of humans in a whole range of circumstances, from military conflict to civilian policing," he added.

"For some, this is a dystopian nightmare, but if you're one of the service staff who are placed in harm's way, or, even more so, the person responsible for putting them there, then it's much more appealing to use a robot or a drone."

A self-driving device made by UVD Robots is being used to disinfect hospital rooms

On February 19 2020 it was announced that Danish-designed self-driving UV Disinfection Robots are being shipped to China for use in hospitals.

These devices, from UVD Robots, emit concentrated UV-C light from a column of bulbs on top of a wheeled base. The light has a germicidal effect, allowing it to kill airborne viruses and bacteria on surfaces.

Using an app, cleaning staff can direct the robot to take enter rooms and disinfect them in just 10 minutes. Sunay Healthcare Supply now has exclusive rights to distribute the UV Disinfection Robot in China.

"More than 2,000 hospitals will now have the opportunity to ensure effective disinfection, protecting both their patients and staff," said CEO of Sunay Healthcare Supply Su Yan.

Drone deliveries to coronavirus-hit areas

Quarantine restrictions have impacted normal supply routes along road, rail or water. Tech company Antwork used a drone to transport medical supplies and patient samples from the People›s Hospital of Xinchang County and a local disease centre.

Antwork's parent company Terra Drone said that using drones was 50 per cent faster than roads and helped cut the risk of spreading the disease.

"With more and more medical staff and ambulance being transferred to the front line, in the case of extreme personnel shortage, the use of drone transportation can also save human and material resources," said Terra Drone.

A Chinese e-commerce business called JD.com has also begun using drones to fulfil orders.

Boat delivery routes over Baiyang Lake in northern China's Hebei province have been disrupted by the epidemic. JD.com used a drone to deliver a package of electronics and snacks to Liuzhuang village.The company has also used autonomous vehicles to drive 600 metres to deliver parcels to a hospital in Wuhan.

Hundreds of thousands of human volunteers still needed

China Electronics Technology Group has developed an app where users can enter their name and identity card number to check whether they have come into "close contact" with a carrier of coronavirus.

However, despite all these technologies, China is having to use human volunteers to tackle the virus.

Human volunteers in the hundreds of thousands are also fighting the disease

The New York Times reported that hundreds of thousands of workers and Communist Party representatives are manning checkpoints to quarantined areas, taking residents temperatures and enforcing lockdown rules.

In some cities, government restrictions mean only one member of a household is allowed to leave the home to pick up supplies every few days.

Some citizens in China have developed their own ways to try and fight the virus without expensive technology. One video on Youtube shows a man with machine blowing out disinfectant, sitting on the back of a vehicle being driven around Zhuozhou City.

Dezeen's first documentary short, Elevation, examined how drones are changing cities. Officials in New York are pushing to use drones to examine buildings to make the city safer.

Source: www.dezeen.com

Intelligent Robotic Process Automation Is Not Your Average Top 2020 Trend

Hidden behind the tsunami of expert predictions on the rise of intelligent robotic process automation (RPA) are sweeping changes for the customer and employee experience in every industry. Gartner analysts included RPA as a key component of "hyper automation," a major theme they wove into the firm's top strategic technology trends for 2020. In a recent Gartner survey, respondents said the top two reasons they were investing in AI were to automate repetitive or manual tasks (66 percent) and improve the customer experience (63 percent).

By 2022, IDC predicted that 75 percent of enterprises will embed intelligent automation into technology and process development, using AI-based software to discover operational and experiential insights that will guide innovation. Over the next few years, IDC researchers expected spend on AI-enabled RPA will outpace that of non-AI-enabled RPA. While IDC analysts found most RPA vendors weren't using AI and machine learning in a big way yet, I discovered how SAP helped developers inject intelligence into software applications across the SAP S/4HANA Cloud in this VIDEO interview at the SAP TechEd event.

"Machine learning, intelligent robotic process automation, and embedded analytics are core to becoming an intelligent enterprise," said Sven Denecken, head of SAP S/4HANA Product Success and Customer Co-Innovation. "With preconfigured bots, machine learning models, templates, and reports, we've made it easy for developers to bring these capabilities into SAP S/4HANA Cloud, innovating how people work and business operates for growth."

Intelligence Delivers Business Results

Unlike historical RPA that only automated disparate, manual data processing tasks, the intelligent version offers employees and their companies unique opportunities - provided it's pervasive across a business process like finance, procurement, sales, and the supply chain. When I caught up with Denecken after SAP TechEd, he urged companies to focus on business results in order to gain the greatest value from intelligent technologies.

"Embedding intelligent bots into the Invoice to Cash process dramatically improves not only the efficiency of accountants and their ability to speed up payment management, but equally important, customer satisfaction," he said. "The same applies to the Order to Cash process. AI can automate routine tasks and find new opportunities. Sales managers can spend more time on upselling the right products at the right prices to the right customers. Every business process becomes more streamlined, improving sales forecast accuracy, on-time customer deliveries, and cash flow."

Different Kind of Employee Experience

This next level of intelligence doesn't cancel out the value of people. Gartner analysts saw RPA tools augmenting knowledge workers, taking on tedious, mundane, repetitive tasks. Forrester analysts characterized employees in this new intelligent-driven era as "the critical cultural glue and internal force in the future of work. With fewer employees, they are self-initiating, adaptable brand and culture ambassadors. They keep the core organization whole and maintain the soul of the company's front-and-centre gig economy workers, who come and go while robots make more and more decisions."

In some industries, intelligent robotic process automation just might become essential to survival. IDC predicted that by 2023, 60 percent of G2000 manufacturers will address growing industry talent shortages with significant investments in intelligent RPA. These analysts wrote that "the integration of optical character recognition (OCR), natural language processing (NLP), and machine learning in AI-infused RPA opens up opportunities for data collection, workflow, and operational/tactical decision making." IDC aligned intelligent robotic process automation with Industry 4.0 aspirations, helping manufacturers move beyond greater efficiency and productivity to new business models like dynamic sales models and hyper-personalization.

Courtesy of traditional RPA, business entered the first phase of automation. With advanced intelligence that helps connect all organizational information and activities, intelligent robotic process automation promises to be much more than a blip on 2020 trend lists. It's certain to reinvent business and industries as never before.

Source: www.forbes.com

Bringing Safety Automation in South East Asia to Greater Heights:

Mr. Mark Meng, Newly Appointed Managing Director at Pilz South East Asia

Ostfildern-based safety automation company, Pilz, has appointed Mr. Mark Meng as its regional Managing Director for South East Asia, effective 1st of February 2020.

"I feel greatly honoured to join Pilz, the innovative company who invented the world's first safety relay," said Mark. "I am also excited to continue to contribute to the digital transformation of the manufacturing industries in the region, and together make the automation system safer."

Mark joined B&R in 2002 as sales and technical representative in Southeast Asia. Subsequently, he joined Rockwell Automation AP HQ, and manages its regional OEM business as a technical consultant in robotics and machinery safety, and then a business development manager overseeing various industry sectors in machine OEM market.

After rejoining B&R in 2011, Mark setup B&R Singapore, and was appointed as the firm's Managing Director for South East Asia region. He has overseen several key milestones, including the acquisition of B&R by ABB and the subsequent integration in 2017.

Prior to joining B&R, Mark also worked in the channel ecosystem holding key positions at distributors such as Amptron Instruments and Jetter Asia.

On his new appointment, Mr Mark Meng reiterated his commitment to innovation in solving some of the most pressing challenges around machine safety, robotics, and Industry 4.0 in the region.

Pilz in Social Networks

In our social media channels we give you background information concerning the company and the people at Pilz, and we report on current developments in Automation Technology.

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A Mobile HMI Strategy Can Lead to Digital Transformation

Leveraging a mobile human-machine interface (HMI) strategy can help an organization's digital transformation by improving operations and a company's overall digital intelligence.

The prospect of a digital transformation journey for an organization can be daunting, but a shortcut might be close. A mobile-friendly environment with an intuitive human-machine interface (HMI) can help advance an organization's digital transformation initiatives by expanding digital intelligence throughout the workforce and improving operations.

By using familiar mobile devices such as phones and tablets (Figure 1) to securely access important process information including displays, alarms, real-time values and historical trends, organizations can create new efficiencies and competencies. This brings positive cultural and behavioural changes. Organizations also can leverage a mobile HMI strategy to foster additional competencies related to digital transformation, such as decision support and continuous situational awareness.

Simple Process Information Access

Simple, read-only mobile access to process information and displays from an HMI control system can quickly progress organizations on a digital transformation journey by helping to extend a secure architecture in a way that will continue to be useful. Since mobile connectivity is now nearly ubiquitous, extending mobility and enabling users to access plant process data is a natural progression. This access can be achieved by adding a digital layer to existing systems. This allows organizations to leverage current mobile devices and wireless or cellular networks to securely access and share critical process information.

Courtesy: Emerson

Mobile software natively integrated with process control systems (PCSs) offer additional benefits including a cybersecurity architecture that supports network and information security. Adding native, read-only mobile access to a PCS within an organization's existing secure mobile environment delivers the process information personnel need, wherever and whenever they need it. An enterprise also will continue leveraging its established architecture as it continues implementing further digital transformation initiatives.

Extend Access and Widen Understanding

Since mobile access is implemented as a digital layer on top of the PCS, mobile HMI software needs to aggregate information from multiple sources, allowing personnel access to data across the enterprise.

Mobile HMI design tools need to distil a torrent of data from throughout the enterprise into a stream of actionable information relevant to each person's role. These tools should be tailored to prevent personnel from failing to make the right decisions due to data overload. As an organization's digital transformation evolves, the amount of available process and enterprise data will increase over time; so will the need to turn large amounts of data into information.

Mobile HMIs also may include tools that help limit which information personnel have permission to access. In this case, mobile software natively integrated with the PCS may take advantage of existing data access permissions, and additional limitations or security extensions can be designed for the mobile HMI software.

Foster Competencies with Digital Transformation

A digitally transformed organization will be able to gather, filter, and analyze more data. The organization can turn it into actionable information specific to each role. By leveraging existing systems and architecture, and by adding secure, read-only mobile access, organizations can create new efficiencies and build competencies resulting in positive cultural and behavioural changes as well as operational improvements.

Situational awareness — Mobile access to critical process information provides enhanced situational awareness whether personnel are located next to the equipment, in the office or offsite. Increased awareness along with meaningful, intuitive visualization of data can assist in analysis and can drive accurate and more rapid decisions.

Figure 1: Intuitive mobile HMIs allow an organization to take advantage of many positive cultural and behavioural changes related to digital transformation, in part by leveraging the same screens and information as operators use in the control room. Courtesy: Emerson

Notifications can be received natively on mobile devices so people in any location can maintain visibility into process conditions and monitor abnormal situations. Rather than viewing numbers and interpreting them to build knowledge, mobile HMIs can display operator graphics, trends and other charts such as those shown in Figure 2. These types of visualization provide more information than the raw data by giving personnel a more qualitative, intuitive and holistic picture of a company's operations.

Decision support — Personnel can use decision-support tools and analytics with mobile devices for faster and higher-quality decisions. A mobile HMI can aggregate and present the data on screens that are easy to understand, enabling personnel to make informed decisions based on operational data from across the enterprise.

Key performance indicators (KPIs) are measurements of enterprise performance that provide valuable decision support and are commonly calculated from data aggregated from multiple sources. A mobile platform capable of securely displaying KPIs can be especially valuable for delivering this knowledge to personnel outside of the control room.

Mobile users have, for example, found success in monitoring and addressing environmental KPIs that have exceeded targets. By having immediate mobile access to this information, operators can quickly deliver information to management. This lets operators handle decision-making processes involving multiple data sources to better manage the process and their environmental limits.

In addition, mobile devices provide analytics to personnel so they can frame plans and respond to an abnormal situation no matter where they are. Personnel also have the flexibility to access additional data and go deeper into analyses as needed.

Figure 2: This radar-plot display increases situational awareness and allows the user to quickly see if a KPI value is deviating. In this example, the cooling water demand is starting increase. Courtesy: Emerson

Improved Team, Enterprise Collaboration

Using a mobile HMI strategy to provide continuous situational awareness and improved decision support can enhance collaboration and act as a catalyst for digital transformation. Through a natively integrated mobile HMI, personnel will use the same operator displays, alarms, trends, and other charts to collaborate and troubleshoot issues. These HMI elements provide a common language among operators, engineers, managers and technicians.

For example, an international organization revealed one of its biggest operational challenges was clear communication among field operators and control room operators. By taking advantage of a natively integrated mobile HMI, the field operators and control room operators were able to collaborate by using a shared language. This improved efficiency and reduced the potential for safety incidents.

This common HMI language in a mobile environment will help foster a collaborative cultural change within an organization. Using a mobile HMI, the enterprise will marshal resources around the same information and act as a team to collaborate on problems and make decisions based on collective knowledge.

Moving Quickly to Action

Today, organizations can build their knowledge base and encourage faster and more informed decisions based on secure mobile access to up-to-the-minute conditions. This process intelligence is empowered by mobile and intuitive HMIs. Organizations can take advantage of existing networks to extend knowledge to roles in any location, with instant information access that may have once been limited to control systems. Implementing mobile access to process information with intuitive HMIs provides an organization with an easy win that helps set the stage technically and culturally for future digital transformation efforts.

Source: www.controleng.com

Robotic Process Automation to Transform Legal Sector

How is RPA going to disrupt legal services?

(Image credit: Pixabay)

The increased pressure faced by law firms to provide their services quicker and at a lower cost for customers means there is a significant demand to adapt the way they work, and even become more efficient. As one of the longest established professions, the legal sector has previously been resistant to adopt technological change, for cultural, competitive, and economic reasons, but the industry is taking steps to catch up.

In 2014, investment in legal technology amounted to £1.5 million; in 2019, the figure has exploded to £61 million. Just two years ago, only 10% of the top 100 law firms were using artificial intelligence (AI) technology to improve the accuracy and speed of processing large amounts of information. This has increased to 40% - which shows that whilst the sector has made huge strides with new technologies, there are still huge benefits that are yet to be unlocked. Results from Gartner this year back this up: only 2% of current legal budgets are being spent on technology, even though it has been revealed that RPA in legal sector work can cut costs by 20-40 percent, whilst reducing human error and increasing compliance.

Legal robots are the perfect technological ally for legal departments and law firms because they can handle repetitive and tedious operational tasks – given that 63% of in-house legal work is repeatable, fact-based decisions that involve no need for human judgement or interpretation. By taking on these tasks, in place of human workers, RPA frees up legal advisors to spend time with clients – creating more billable hours and enabling law firms to become more competitive.

Reaping the Benefits of RPA

The main advantage of RPA is the reduction in time and costs, especially when considering that the most common method of charging used by law firms is by the hour. Software robots can complete tasks up to five times faster than human workers – and in light of this, Deloitte Consulting LLP has joined an alliance to jointly develop and deliver RPA solutions to its clients at a global level while also establishing a more focused and innovative collaboration to automate legal and compliance. The first solution was a robot that can search for information in public records, which is common in due diligence processes – and which takes approximately seven minutes, as opposed to the three and a half hours it takes a person to do the same task. Software robots also reduce errors – which can be very costly to businesses. This year a mistake in drafting a contract cost a leading London law firm nearly £2 million.

There are many daily time-consuming, repetitive processes that are mandatory, but do not necessarily need to be performed by a lawyer and that RPA can handle.

Considering the trademark registrations or verifications of disputes made by law firms and reviewing and processing high-volumes of stored documents as part of a large transaction or due diligence process, are just some of the processes that are suitable for automation. By automating these repetitive tasks to software robots, lawyers' time is freed up to focus on what really matters: the complex legal issues that these transactions may raise.

Public Sector Law and RPA

RPA can also help with legal functions in the public sector, which faces problems that require easy-to-deploy, low cost-solutions: from a high volume of work that blocks productivity to employee shortages, cost optimization, frequent changes in regulations and policies and department siloing. Bureaucracy, waste of paper, inefficient or obsolete systems are the most common problems that can be improved through automation with minimal costs, compared to a more complete digital transformation program. There are a number of RPA solutions that public sector law departments can use, as well as private firms and professionals:

- Export control robots – which reduce business risk and improve legal productivity, whilst automating the validation of new parties and partners.

- Regulatory robots – which compile regulatory changes, as well as automating the monitoring and updating of changes within the European Union (EU Parliament, European Commission) and the United States legal and regulatory requirements databases.

- Conflict of interest robots – which automate conflict of interest disclosure and verification within an internal, searchable database, and reduce the time needed to identify conflicts from weeks to minutes.

- Contract robots – which automate the identification of agreements that require legal review, accept or reject changes on standard templates and common clauses and allow law professionals to focus on reviewing and negotiating complex contracts.

- Robottorney – which is a legal enquiry chatbots that respond to common queries over email or internal chat tools and provide answers in real time, freeing up legal counsels to focus on more complex and strategic requests.›

What Does the Future Hold for the Legal Sector?

Deloitte forecasts that by 2025, the quickening pace of technological developments, shifts in workforce demographics, and the need to offer clients more value for money, will force a profound transformation of the legal sector. Professionals must keep up with the fast pace of change, and rapidly adapt to the needs of their clients.

Adopting an 'automation first' mindset, whether in-house or outside council, will undoubtedly transform the way the legal sector works. Addressing its business challenges with a hybrid human/software workforce, using software robots to automate daily processes and freeing humans up for more creative, strategic tasks is destined to make a huge difference. Taking an automation first approach and providing a clear path forward for organisations to embrace a new dynamic will ultimately result in legal success – and change the way the legal sector works forever.

Source: www.techradar.com

How to Strengthen Cybersecurity in Smart Manufacturing

Digital technologies have firmly penetrated the manufacturing sector, successfully and at an ever-increasing rate, passing the initial stages of business transformation.

Digital Transformation in Manufacturing

Digital transformation of production means revolutionary changes in business models. The digital transformation in manufacturing involves the introduction of modern innovative technologies and products, the adaptation and development of new business models to the conditions of the digital economy and, due to this, the creation of smart factories and a qualitative improvement in business processes, including the production process.

The changes in the modern world caused by the booming growth with information technology and universal digitalization could not but affect production systems. The invention and widespread use of programmable controllers, robots, and digital control systems integrated with enterprise corporate networks has led to a change in approaches to production management and the rapid development of several new technological departments. It has also placed more emphasis on ensuring the safety of industrial systems.

The evolution of technology and management tools towards the widespread use of computerized components has led to the emergence and rapid growth in the number of new attacks on industrial systems. A modern attacker uses targeted attacks on digital production facilities, specialized arsenals of means of influence; not only technical means but, for example, social engineering.

Cybersecurity of Smart Manufacturing

Without exaggeration, digital transformation is the mainstream of the technological development of the industry. Modern smart manufacturing uses digital and computer technology in all aspects of its work. Almost all processes, from direct control and process control to business planning and workflow, are currently carried out using digital data and digital infrastructure. This raises the need for more security of all technological processes.

Cybersecurity is a set of principles and means of ensuring the security of information processes, approaches to managing security and other technologies that are used to actively counter the implementation of cyber threats.

The modern security paradigm includes:

1. Revision of access control models that take into account openness, flexibility and distribution. Models should be based on temporal logic.
2. Adoption of virtualization technology as a powerful means of protection, which allows moving from the concept of a "protected system" (from a fixed set of threats) to the concept of "a system with predictable behavior".
3. The implementation of the principle of separation of the information processing environment and the means of protection.
4. Building the theoretical foundations of managing dynamic protection (adapting to current threats) as an object of automatic regulation with the concept of a stability zone, aftereffect (inertia) of dynamic characteristics
5. Acceptance of the openness of systems (Internet connection) as an inalienable property and the construction of protection with this in mind
6. Development of the basics of assessing elasticity (system adaptability) and scalability.
7. Development of new principles for detecting attacks, viruses, rootkits, worms, RPS and other malware.
8. Taking into account the possibility of using supercomputers to create new attack scenarios, scanning systems, intervention in production management, cryptanalysis.

Industry 4.0 and Technology Areas

The basis for digital transformation is computer technology and digital measuring instruments. Computer technologies in smart manufacturing have gone from isolated "islands" of control systems and office computers to multilevel geographically distributed corporate networks with access control and information security. Due to the development of cloud technologies and data centers, the problem of a limited amount of stored data and computing power is removed.

This enables the large-scale digital transformation of manufacturing industry, which is often referred to in the literature as the fourth industrial revolution, or Industry 4.0. Industry 4.0 technologies include at least:

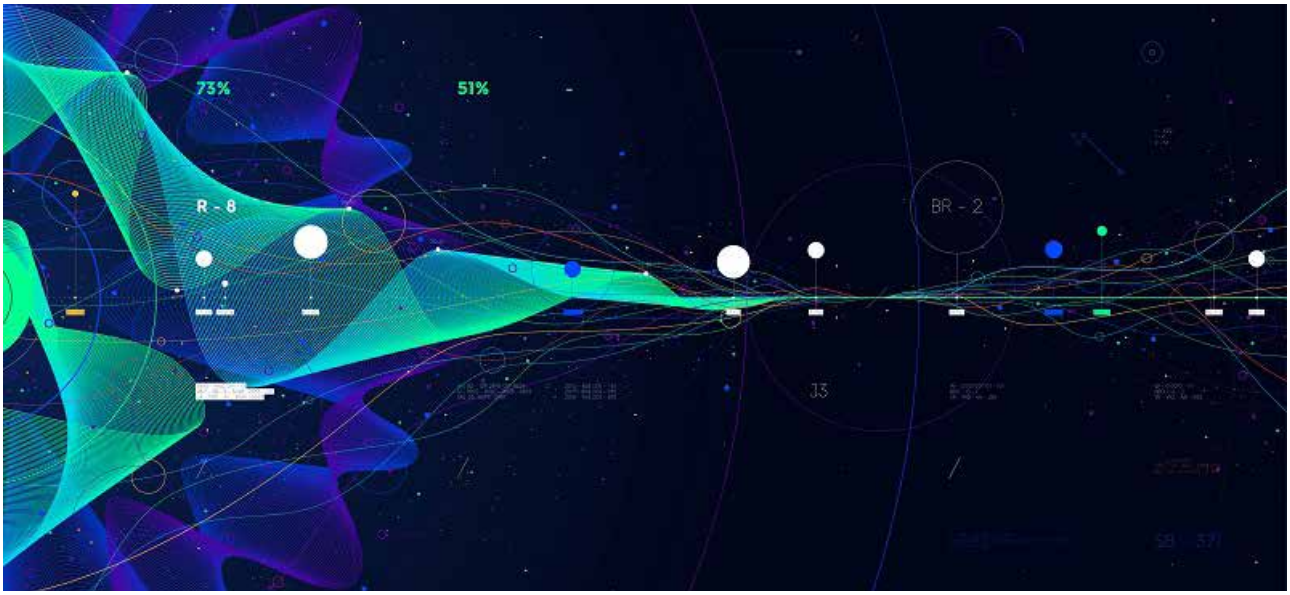
- smart manufacturing devices and the industrial Internet of things – the ability to obtain comprehensive data about an object or equipment with their transfer to any other system, usually over wireless networks;
- a digital copy (digital double) – a full description of the object at all stages of the life cycle, including drawings and three-dimensional models in digital form, a model of the process, data on the current process parameters and other important parameters;
- Big data – technologies for working with large volumes of heterogeneous data (time series, events, etc.) in order to analyze and obtain significant information for decision making;
- machine learning and artificial intelligence – a range of technologies for teaching computer systems in order to find dependencies and apply them to decision making;
- cloud technologies and services that allow you to store and process data, perform software services on the infrastructure of the "cloud" located on the Internet or in the corporate data center;
- wireless and mobile communications technologies, mobile devices, and applications;
- Robotics
- virtual and augmented reality;
- additive manufacturing and 3D printing, etc.

Digital transformation allows us to ensure significant growth in market volumes, increases the competitiveness of enterprise products and solves at a new level the continuously complicated tasks of industrial enterprises. It is vital not to let security threats compromise a significant potential of smart manufacturing.

Source: www.business2community.com

Big Data Analytics Will Play a Strategic Role in Most Utilities

Big data analytics has emerged in response to the exponential growth in data and the utility industry, like most other industries, has started to make several transformations with the use of modern devices, says GlobalData, a leading data and analytics company.



The amount of data generated by companies is growing each year only a small number of utilities have presently adopted big data analytics actively. Credit: Maxger on ShutterStock.

Cloud computing, machine learning, Internet of Things (IoT), robotics, block chain and cybersecurity are being deployed by utilities in their operations. These technologies are the big current and future investment avenues for utilities and they all have one thing in common, they generate a huge amount of data.

GlobalData's latest report, 'Big Data in Utilities – Thematic Research', highlights how the data generated is growing each year as more and more smart devices and technologies are being deployed within the power systems infrastructure by both utilities and consumers. Utilities' infrastructure is being upgraded with smart devices that will continually generate data. Electric vehicles (EVs), smart home systems, grid management systems and many more subsystems will also interface with utilities and provide potentially valuable data.

The challenge for utilities is to make this data useful and generate actionable insights on aspects, such as consumer behaviour and demand-supply balance, from it. Benefiting from large datasets is not straightforward and utilities need to deploy a range of new IT solutions that allow them to collect the data in consistent ways, as well as transport, secure, analyse and store it. The following chart lists the key players providing these various services.

Furthermore, utilities can use IoT solutions along with big data technologies to achieve greater flexibility and scalability. One of UK's largest utility companies, National Grid, is using Open Energi's Direct Demand technology platform to stabilise supply and demand across the UK's power grid. Complimentary usage of Big Data and IoT will facilitate utilities to enhance their customer relationship, determine outages / leakages and detect

faults by analysing the vast amount of data coming from diverse IoT-embedded sensors and smart meters.

Due to presumable reluctance, only a small number of utilities have presently adopted big data analytics actively worldwide. These are mostly large utilities and very few smaller utility companies. While some utilities have designated other companies to implement big data in their businesses, some have collaborated with technology firms through partnerships and joint ventures to build new products and services specific to the power sector that can be used in their business and can also be sold to other utilities.

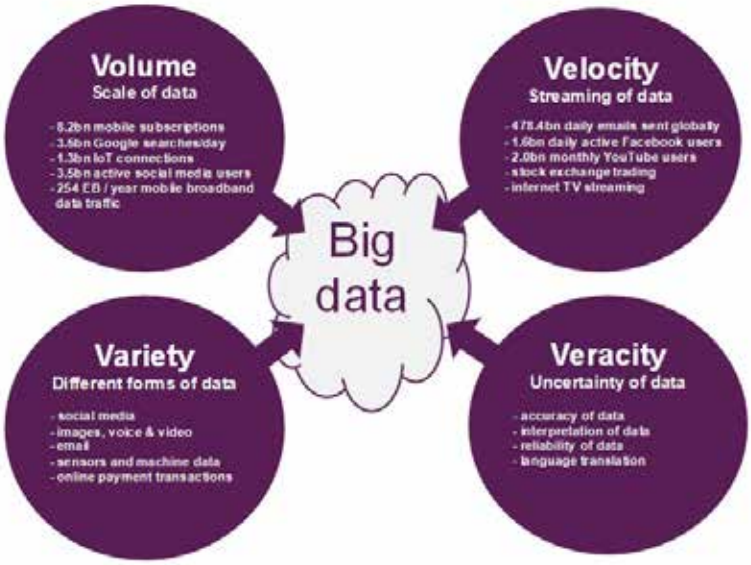


Figure 1: The four dimensions of big data, also referred to as the four Vs. Credit: GlobalData.

Source: www.power-technology.com

TM Partners with Huawei on 5G Network Carrier Interoperability

Telekom Malaysia Bhd (TM) has collaborated with Huawei Technologies (M) Sdn Bhd (Huawei) on interoperability test programme focusing on Standalone (SA) dedicated core infrastructure architecture.

Telekom Malaysia Bhd (TM) has collaborated with Huawei Technologies (M) Sdn Bhd (Huawei) on interoperability test programme focusing on Standalone (SA) dedicated core infrastructure architecture. NST file pix

TM said tests which will be conducted at its 5G Demonstration Project (5GDP) sites in Langkawi, Kedah will include features and functionalities of network sharing among telecommunication service providers in the country.

The success of the test represented a significant milestone on the path towards accelerating the anticipated commercial 5G deployments in the later part of 2020.

TM group chief executive officer Datuk Noor Kamarul Annuar Nuruddin said the collaboration was aimed to accelerate the offering of 5G services to Malaysians, with end-to-end solutions from the network, to the cloud, to the client.

"Towards this end, TM with the support from Huawei experts, are also setting up the 5GDP network in Langkawi as an incubation centre for other telco players, businesses as well as local enterprises to utilise the network and test more 5G use cases on top of the existing 11 use cases that have been deployed," he said in a statement.

Noor Kamarul added the SA dedicated network architecture deployed in Langkawi, new enterprise use cases and business models will be made possible as the company progressed with the 5GDP programme, beyond traditional connectivity and mobile broadband services.

"The success of the interoperability tests which will be conducted by TM and Huawei will not only lay a foundation for large-scale commercial launch of a multitude of new innovative 5G use cases, it will also promote the industry's end-to-end 5G SA dedicated core's commercialisation efforts spanning networks and devices," he added.

Noor Kamarul said the latest joint effort with Huawei was an important milestone and demonstrated significant progress in the journey towards 5G deployment in the country.

"It is an important step towards the commercial use of 5G in full scale later in the year. It is key to ensure a smooth multi-tenant commercial network rollout by performing series of interoperability tests among technology providers during this demo project."

He said interoperability would play a significant role in driving new business opportunities for telcos as the industry was focusing on the next generation

services spanning autonomous driving, smart factory, smart farm, and augmented reality / virtual reality brought about by the accelerated deployment of future 5G network, applications and solutions for Malaysian homes, businesses and beyond.

Huawei chief executive officer Michael Yuan said the collaboration was an effort to explore 5G technology and the potential to realise the digital economy, Industrial Revolution 4.0 and bringing enhanced connectivity to all Malaysians.

"As a leading global ICT solutions provider, our core business value lies in customer centricity – customising our solutions based on clients' needs. In working together with them, we help them succeed in achieving their ICT goals," he added.

Source: www.nst.com.my

Effective Cybersecurity Solutions and the Cybersecurity Tech Accord

Effective Cybersecurity Solutions and the Cybersecurity Tech Accord

Our approach is simple. We will collaborate to: Earlier today, Schneider Electric joined more than a hundred other industry thought leaders and forward thinkers as a signatory to the Cybersecurity Tech Accord. Like us, these companies are committed to the fundamental principles that encourage and guide deeper, more productive conversations among the stakeholders who are responsible for cybersecurity solutions for our digital economy and ecosystem. Among these principles, Cybersecurity Tech Accord signatories have agreed to "partner with each other and with likeminded groups to enhance cybersecurity," which is music to our ears.

Almost daily we see that taking on new, innovative and increasingly dangerous threats can't be limited to a single company, industry or region. When it comes to cybersecurity, many companies are very conservative sometimes for good reasons but that needs to change. At Schneider Electric, we believe the most effective way to change global cyber culture is to encourage a collaborative approach.

- **Educate the ecosystem**: It is an economic and social impe rative to improve awareness and upgrade the technology skills necessary to take on increasingly complex, diverse threats.
- **Secure the value chain**: We start on the home front to improve our company's posture and then help others to extend the same level of security vigilance across the ecosystem (from the enterprise to suppliers to partners).
- **Achieve systemic impact and change:** By engaging global to local, across industries, NGOs and government stakeholders, we seek to influence and help you stake a claim on the cybersecurity frontier.

Bringing Together People, Processes and Technology to Enable Cybersecurity Solutions

First, the best cyber defense is an educated and aware workforce. We believe in empowering employees, who are at the front lines of securing the new electric world. Establishing this "we" culture helps to connect the dots across the enterprise, fill gaps and maintain always-on vigilance. In many cases, people are the first and last lines of protection. But it's not enough to have user manuals sitting on a shelf. This is about developing a proactive "all for one, one for all" culture. Schneider Electric embeds cybersecurity into our operations, from design to manufacturing, from delivery and commissioning to maintenance and operating. To do that, it takes the enterprise– everyone, everywhere– to accept responsibility for cybersecurity. This also means bringing IT and OT together so they can help the entire facility or organization– not just an area, a function or individual team– be as secure as possible. This where the "secure-by-design" approach cuts across our IoT-enabled EcoStruxure™ architecture.

It ensures both IT and OT stakeholders have a seat at the cyber-strategy table so we can drive digital transformation with a strong cybersecurity posture in focus at all times. To learn more about creating this cyber culture, including use cases, you can check out our "Building a Cybersecurity Strategy" e-guide.

Second, one of the surest ways to identify and eliminate cyber risks is to establish and adhere to robust, standards-based best practices and processes. This will ensure management and governance of the most critical levers that ensure business continuity. For any company, a perimeter defense is not enough. Because everyone is connected *constantly*– from our homes to our smartphones and across the distributed enterprise network– a layered approach is essential. For example, the NIST framework, an incredibly useful reference, defines different levels of defense, from identifying risks to recovering from incidents (resilience). For us, cybersecurity solutions cut across silos, divisions and business units and goes through consistent, regular risk and threat assessments and gap analyses.

Third, while it is not a silver bullet, technology is crucial. Digital offers, platforms, products and industrial equipment allow prevention, detection and response at scale, for example through partners like Claroty, whose OT monitoring helps us better protect our customers' environments. In addition to advanced automation technologies, we offer OEMs such as Berto Coffee Roaster EcoStruxure™ Machine Advisor, a cloud-connected service that delivers remote monitoring capabilities for Berto's specialized roasting machines. Plus connected digital services based on data provide the ability to monitor fleets of specialized machines worldwide, competitively grow the OEM service business and even enable the pivot toward new business models such as machine/equipment uptime-as-a-service models.

Similarly, through Schneider Electric Exchange (our digital business platform and ecosystem), everyone is able create, collaborate and scale new offers, including in the cybersecurity space. For example, Base Sistemas was seeking defensive cybersecurity measures for its client's global petrochemical plants. Through Schneider Electric Exchange, Base Sistemas was connected with Enigmedia, whose cybersecurity offer closed the deal, and they were seamlessly connected.

Our Collaborative Momentum with the Cybersecurity Tech Accord

As you can see, we firmly believe that succeeding as a digital company requires working across an extended, open, digital ecosystem. Schneider Electric is proud to be a founding member of the ISA Global Cybersecurity Alliance; we're proud to be a member of the Cybersecurity Coalition; and today we are especially proud to be a signatory to the Cybersecurity Tech Accord.

Alongside us in this endeavor are some prominent partners, such as Cisco and Microsoft, who have been at the forefront of cybersecurity innovation, from the edge to the cloud. Working together with these and other ecosystem partners allows us to improve security for IT / OT convergence by applying IT best-practices and transferring to OT applications.

"Today, as we celebrate becoming one the newest signatories to the Cybersecurity Tech Accord, we encourage everyone to join this commitment to transparency and collaboration."

Not only will we drive needed change, together we will develop the next-gen tools, skills and methods we need to secure and protect the digital economy.

Source: blog.se.com

The Time Is Now: How to Manufacture Your Smart Factory with Industrial IoT

Discussions around the Internet of Things (IoT) mostly revolve around how it will impact our everyday lives. From drone-delivery of a pizza to turning your heating on from your phone, smart, connected devices have pervaded in recent years.

Yet far from consumers, perhaps one of the most lucrative applications for IoT is in the manufacturing industry. In fact, the IoT initiated the latest industrial revolution, commonly referred to as Industry 4.0, with the emergence of the smart factory: using an Industrial Internet of Things (IIoT) to create an intelligent, decision-making environment of connected devices and things with predictive, preventive, prescriptive, pre-emptive, proactive, i.e. basically autonomous decision making capabilities.

How Manufacturers Can Benefit From the IIoT

Manufacturers are already adopting the IoT to help improve quality control, achieve operational efficiency, transform the customer experience and more. Manufacturers using the IoT are seeing return on their investment in the form of improved product quality; greater operational efficiency and safety; better inventory tracking; and more accurate demand forecasting. Some companies are also using technology as a differentiator to enhance customer experience.

And this is arguably just the beginning. Within the next five years, 85 percent of industrial companies are expected to have implemented Industry 4.0 technologies in all key business divisions. And according to Cisco, 61 percent of manufacturers who have implemented an IoT strategy believe "they have barely begun to scratch the surface of what IoT can do for their business".

But There Are Barriers to Overcome

Although the value of digital innovation is apparent, widespread adoption has been slow. This is due to a myriad of challenges. For many organisations, the biggest challenge is available talent — they simply don't have the internal expertise to plan and execute digital innovation initiatives. With continued strain on IT budgets, organisations struggle to both manage the priorities of today and invest in the talent needed to help them transform their business.

A new report by PwC identified hiring more Internet of Things (IoT) engineers and data scientists – while training the wider workforce in digital skills – as a key change CEOs must implement if they want to maximise the benefits from digitisation of manufacturing.

Legacy technology is another factor holding manufacturers back. The average factory today is 25 years old, according to McKinsey, with machinery that's approaching nine years old. Before any plans of integrating the IoT can begin at these plants, they must first upgrade equipment to enable digital readiness. Driven by immediate goals of reducing costs and returns, some manufacturing companies have deferred technology investment.

However, lack of IoT integration isn't necessarily due to an unwillingness to invest. Organisations will pursue digital innovation, but many of these projects end up failing. According to the Cisco study 74 percent of companies that begin an IoT initiative fail. This can happen when projects go over budget, deployment times run too long, interoperability issues occur across legacy platforms or planning, and resources aren't allocated appropriately.

No Quick Fix

The move to a smart factory isn't a quick fix. Implementing a robust IoT strategy is an investment of time and resources. But if done right, you're already ahead of the changing marketplace.

Knowing where to begin and what to solve is the first step of a successful IoT journey. It's important to start with the data. You must take a data-driven view to come up with a hypothesis of what you're trying to solve. And ask yourself 'what are our short- and long-term goals?' Selecting a dedicated team to innovate and work quickly to test and learn will be key to this. Don't feel held back by a budget. Although the rapid evolution of technology may be daunting to some, the quick churn of technology advancements also lowers costs as cutting-edge technology becomes more commonplace. This is true for some robotics and other analytics software — making the initial capital investments more palatable.

Businesses should also recognise when outside help is needed. Finding a trusted partner who specialises in IoT solutions can help you plan, deploy and maintain with minimal disruption to your daily operations. And, as with any large initiative, proper planning is key. You need to take time to communicate with all facets of the business.

Why the Time to Invest In the Smart Factory Is Now

Manufacturers must be ready to answer accelerated product cycles, master agility for changing market demands and navigate fragmented markets. Therefore, digital transformation should no longer be a wish list item — it's a business imperative. Integrating the IoT can help manufacturers to stay ahead of the curve – by reducing operational costs, producing better products, minimising risks, optimising processes and ultimately creating better customer experiences.

Source: www.iottechnews.com

A screenshot of The Edelman Predictive Intelligence Centre's (EPIC) interactive trafficking hotspot map across Asia Pacific.

How Harnessing Big Data Can Combat Human Traffickers

Mass adoption and availability of new technologies such as social media, e-payments and messaging apps have enhanced our lives in many ways, bridging distances and enabling us to connect and communicate conveniently and seamlessly. But often, the earliest adopters and exploiters of new technology are criminals.

They're swift to adapt technology to scale their operations by staying one step ahead of law enforcement. In fact, according to Europol, the greatest challenge in tackling organized crime is the level of sophistication in which criminals are exploiting technology.

There is one illegal industry operating with enormous global scale and sophistication as a result of technological manipulation: human trafficking. It's a global business that generates $150 billion profit annually, with 40 million humans currently exploited.

Through a combination of paid advertising on social media and other means of online recruitment, traffickers are luring victims with the promise of legitimate paid work.

The only way to get ahead of what's happening is to be one step ahead of the traffickers, which means beating them at their own game. This is why we at the Edelman Predictive Intelligence Centre (EPIC) and STOP THE TRAFFIK (STT) are using big data to disrupt the human supply chain.

AI and Big Data Analytics Give the Big Picture

Until recently, it wasn't possible to deploy big data to get a full 360-degree view of an illegal industry that is as complex and stealthy as human trafficking, which is of course what the traffickers rely upon. The richest data tends to be the case files that are collected by a loosely affiliated network of mainly grassroots NGOs, but they don't have a holistic view of the problem to be able to utilize these insights. The good news: AI and big data analytics have upended all of this.

By joining hands with NGOs to digitize their data and combining it with open source data, court cases and news in one centralized hub, we can now strive to understand the entire supply chain from source recruitment through to destination.

What has our data shown us? That the best way to disrupt this multi-billion-dollar industry is to focus on recruitment -- in other words, choke off the supply. The biggest driver of the human trafficking business is money, but without human beings to trade there is no industry.

Our approach to disrupting recruitment is twofold. We utilize data to identify trafficking hotspots and routes and then use the power of communications to educate and spread awareness.

For example, after conducting analysis on a community in Bali, we were able to identify that trafficking was occurring on the island. To combat this, we ran a pre-campaign survey to measure the level of understanding of human trafficking within the Balinese population, and used those insights to formulate a targeted awareness campaign.

Our intelligence showed us that one of the mechanisms traffickers use to recruit women and girls for the sex industry is befriending and building trust by gifting them handbags and smartphones. We then created a geo-targeted social media information campaign based on identified trafficking hotspots, developing tailored content that covered local issues to help facilitate conversations on the subject among the local community.

We also created content targeting the local population to help them identify, report and take action on potential trafficking cases. In doing so, we educated potential victims and the public about the signs of trafficking recruitment and gave them information on who to contact for assistance.

Making Trafficking More Difficult

Awareness campaigns not only help reduce recruitment rates and support prevention, but also help build resilience in vulnerable communities. In our Bali campaign, amongst others, big data allows us to understand drivers of vulnerability in individual communities, which helps us create communications that emotionally resonate with these people.

Only by understanding their circumstances are we able to influence them to act differently - including knowing what signs to look for, not giving their debit card or passport to traffickers, or not agreeing to fly to another country for an opportunity that seems suspicious.

Human trafficking has thrived because of seemingly bottomless profits and the ease with which the traffickers were able to manipulate quite simple technologies to their advantage.

By deploying big data and the power of communications, we're able to decipher their recruitment patterns and apply communications to educate and ultimately stop recruitment. By increasing the difficulty of recruitment substantially, it acts as a significant deterrent for traffickers. By building resilient communities, we simultaneously make the trafficking business more challenging, riskier and less profitable.

As trafficking becomes more difficult and less lucrative, traffickers will start to exit the industry.

Source: edition.cnn.com

Strengthening Cybersecurity in ASEAN

Terrorism in Southeast Asia has long been a threat. Previously, the spectre of terrorism haunted the region via threats of physical violence, from bombings to kidnappings. However, in the current internet age, terrorism has found new ways to attack its targets. Cyberterrorism in the region has been a growing concern and experts have called out ASEAN's slow response to it.

This file photo shows an IT researcher using a large screen to highlight a computer infected by ransomware at the LHS (High Security Laboratory) of the INRIA (National Institute for Research in Computer Science and Automation) in Rennes, France. (AFP Photo)

At the moment, Southeast Asian countries are lagging behind when it comes to cybersecurity. Based on a report by global management consultants, AT Kearney, ASEAN countries are also being used for cyberattacks; with Indonesia, Malaysia, and Vietnam serving as global launch pads for malware attacks.

In October 2017, the personal information of around 46 million mobile subscribers in Malaysia was compromised. The personal details leaked included home addresses, national identification card numbers, and SIM card information. It was reported that the data breach had actually occurred in 2014 but was only discovered a year later. This is due to the lack of data breach notification laws in the country which would require a company that has had its data breached to notify its customers.

Singapore has also been the victim of cyberattacks. In 2017, the country was the target of three major cyberattacks, namely the Ministry of Defence cyber breach in February, WannaCry Ransomware attacks in May, and Petya Ransomware activity in June.

These incidents exemplify how far behind the region is in terms of cybersecurity. Cybersecurity at this juncture of time is particularly necessary as internet penetration in the region is at its highest and will continue to grow. Hootsuite's report on Southeast Asia's digital usage indicates that the region has an internet penetration rate of 58 percent which means there are more than 370 million internet users currently.

According to data from AT Kearney, Southeast Asia is not spending enough to protect its citizens from cybersecurity attacks. Despite high levels of growth, data shows that ASEAN member states spent an estimated US$1.9 billion in 2017 or a measly 0.06 percent of the region's gross domestic product (GDP) on cybersecurity. The financial impact from cyberattacks can be crippling and devastating. According to the Asia Pacific Risk Centre, the global cost of data breaches is projected to reach US$2.1 trillion by 2019.

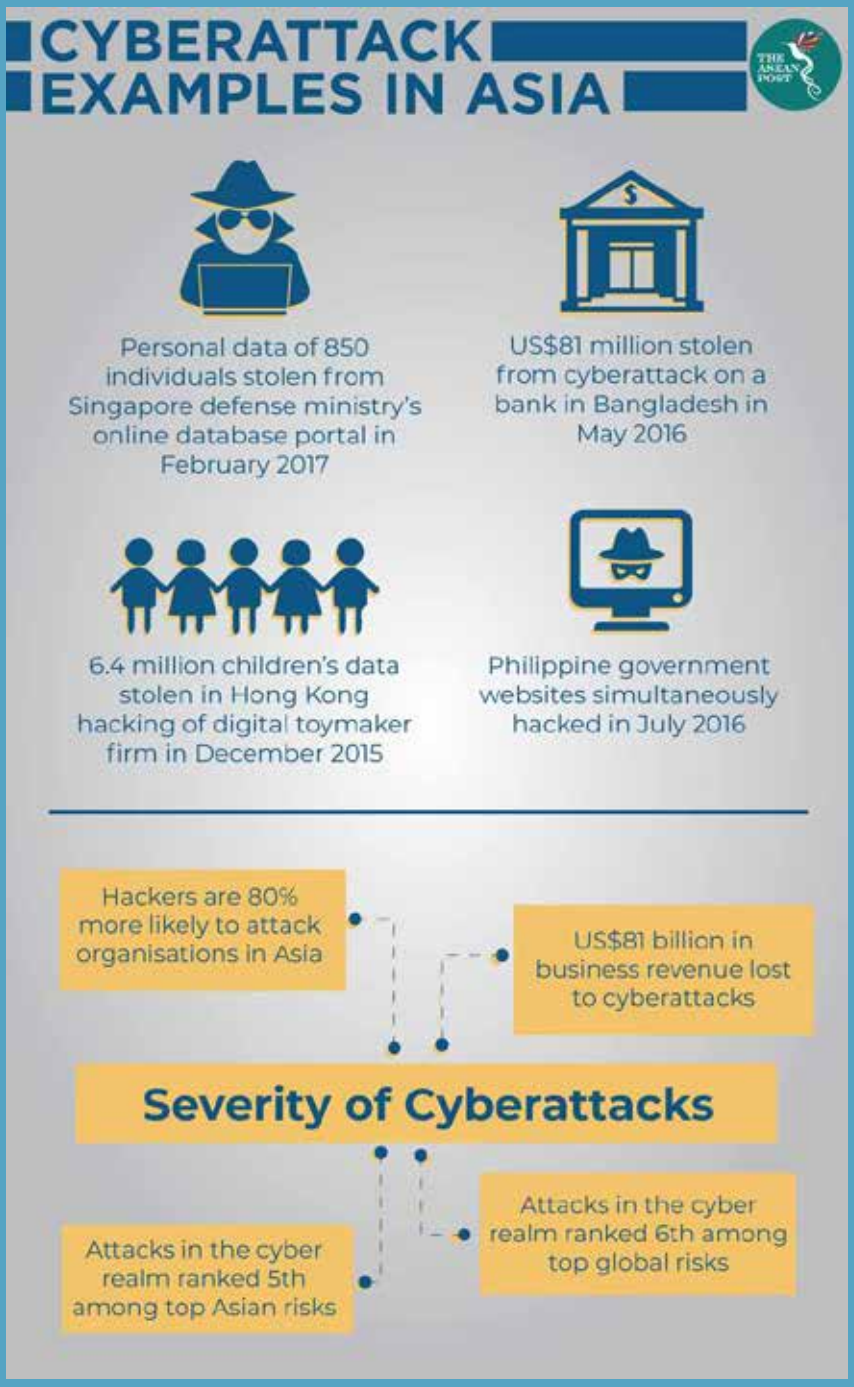
With technology advancing rapidly and embedding itself deeper in our lives, ASEAN countries need to realise the importance of investing in cybersecurity. As technology gets more pervasive, the more vulnerable we are to exploitation by cyber criminals, unless there is proper protection in place.

One of the biggest threats in cyberspace last year was the threat of ransomware. Ransomware is a form of digital extortion where attackers use a trojan to gain access to a user's computer and threatens to publish the victim's data or perpetually block access to the victim's computer unless a ransom is paid.

Financial threat

People's finances could be at risk with internet banking, e-wallets and even cryptocurrency usage on the rise. Without proper security measures in place, people could lose their livelihoods in the event of a cyberattack. Earlier this year, hackers managed to get away with US$440 million in cryptocurrency after hacking a Japanese cryptocurrency exchange.

The overall financial impact of cyberattacks can be devastating to an economy. According to the Asia Pacific Risk Centre, the global cost of data breaches is projected to reach US$2.1 trillion by 2019.



Source: Asia Pacific Risk Centre

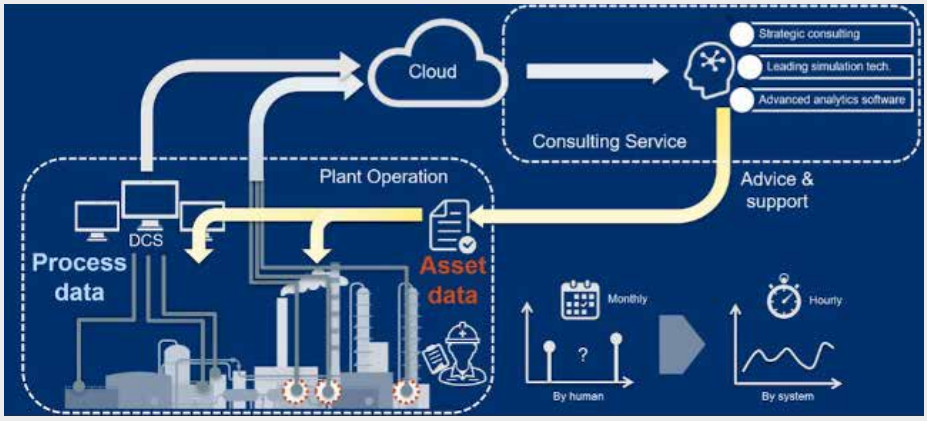
One of the steps ASEAN can take moving forward is to introduce a digital strategy to combat cyberattacks and data breaches. However, a deeper understanding of the tech sector and the workings of the internet is required. Aside from that, the initiative needs to transcend borders, as information and data move freely without borders on the internet. ASEAN has taken steps to cooperate with other countries to tighten cybersecurity. At a previous ASEAN Summit, ASEAN and the United States (US) released a joint statement reaffirming their commitment to strengthening cybersecurity. Russia has also made similar pledges in developing cybersecurity cooperation with ASEAN.

In combating cybersecurity, a common misnomer is that most attacks are carried out by cyber criminals. However, governments need to realise that corporations are just as capable of carrying out questionable actions when it comes to personal data, as seen in Facebook's multiple scandals recently. Governments also need to figure out an overarching strategy that can keep multi-national corporations in check as well as ensuring that the right infrastructure is in place to prevent future attacks from cyberterrorists.

Source: theaseanpost.com

Intelligent Use of Cloud Sharpens Operational Insight

Cloud-based wireless sensing enables safety, reliability and profits through widespread asset monitoring



Courtesy: Yokogawa Electric Corp

Many assets found in oil & gas industry plants and facilities often are not connected — directly or indirectly — to a distributed control system (DCS) or other type industrial control system. While this reduces the number of assets requiring DCS inputs and outputs (I/O), it doesn't mean they don't require monitoring. Many assets need regular data monitoring as part of improved maintenance efforts, but not for real-time control. Examples include motors, pressure relief valves, safety showers and steam traps.

In most plants and facilities, these type assets are much more numerous than those connected to the DCS, and many of them are difficult to access, either due to distance from connection points or lack of access.

If traditional wired sensing methods were used to connect these assets to a DCS or other control system for monitoring, the expense would be astronomical. So, the status quo leaves many of these assets unmonitored, or minimally monitored by technicians periodically checking them during rounds. However, tightening health, safety, and environmental regulations (HSE) are forcing facilities to invest in better maintenance to improve safety, reliability and profitability.

An increasing urgency exists to implement industrial internet of things (IIoT) solutions to deal with these and other issues as inevitable demographic changes bring in younger workers, who sometimes possess less situational awareness and ability to troubleshoot these assets. The proliferation of data, and data-driven organizations, compresses timeframes for decision making and introduces digital competitors.

Safety is enhanced by reducing the number of field workers in dangerous locations. Reliability is increased by applying predictive analytics to the big data generated by continuous plant monitoring. Profitability is improved by precluding the need for consulting services for plant equipment failures and plant-wide improvements. These three anticipated benefits have been the catalyst for most IIoT implementations.

Address the Issues

Condition monitoring coupled with predictive analytics can deliver a significant transformation by improving safety, reliability and profitability. Preventing a major asset failure often can more than justify the cost of implementation.

In the past, condition monitoring was accomplished by either walking around with portable devices and having the operators make ad-hoc decisions, or by installing extremely expensive condition-monitoring systems.

The first alternative produces inaccurate data that often doesn't get analyzed. The second is so expensive that only the most critical assets are monitored. What usually happens in a typical plant is a combination of the two. Rounds data is effectively useless, while condition

monitoring systems that monitor only the most critical assets can miss the failure of less critical assets — those that become critical only after a failure.

When walk around monitoring is replaced by inexpensive wireless sensors, such as a system of battery-operated sensors by Yokogawa, this is disruptive technology that alters best practices and proves extremely productive. It can improve safety by reducing the amount of time workers are required to be in potentially dangerous areas of the plant.

Wireless monitoring also frees workers for more value-added activities, and the much larger number of sensors that can be installed permits ubiquitous and wide-scale monitoring throughout the plant or facility. The data gathered by these wireless sensors empowers online condition-monitoring diagnostics for a much greater number of assets, producing predictive analytics when this data is translated into actionable insights with guaranteed outcomes. The best way to deal with this kind of data uses the cloud. As is well known, cloud computing involves the practice of using a network of remote servers hosted on the Internet to store, manage and process data, rather than a local server or a personal computer. Because the plant data is in cyberspace, it can be interrogated from anywhere (see figure 1). The cloud combines accessibility and convenience with enhanced plant security, as well as additional benefits.

The data can be seen by anyone using an approved smart device, and it can be remotely monitored and analyzed for condition monitoring and performance improvement by experts. Because the data is in the cloud, a simple one-stop solution is provided for data management.

DaaS in the Cloud

The sensor series includes devices for monitoring vibration, temperature and pressure. These sensors and the cloud service provided by Yokogawa constitute a data-as-a-service (DaaS) offering.

DaaS appeals to operators of oil & gas industry plants and facilities that do not want to manage and operate numerous data collection, transformation and sharing solutions — all of which would require granting access to their internal OT and IT networks.

DaaS addresses these and other issues by providing one dedicated point of contact, along with one approved and trusted company that is granted access behind the operator's firewall. The required multiple-managed and -supported connections and visualizations are therefore handled by a third-party, separating these services from the operator's core business activities.

For DaaS with visualizations, operators receive exposed data from existing automation and asset management systems. This enables the use of tools for engineers, managers and other personnel to perform work through a browser. And of course, this work can be done from anywhere on any device capable of hosting a browser, such as a PC, smartphone or tablet. DaaS is therefore an enabler of digitalization activities for operators. Digitalization forces good data practices, helping to simplify DaaS service implementations, along with the quality delivery of services to operators to promote their digital transformation activities.

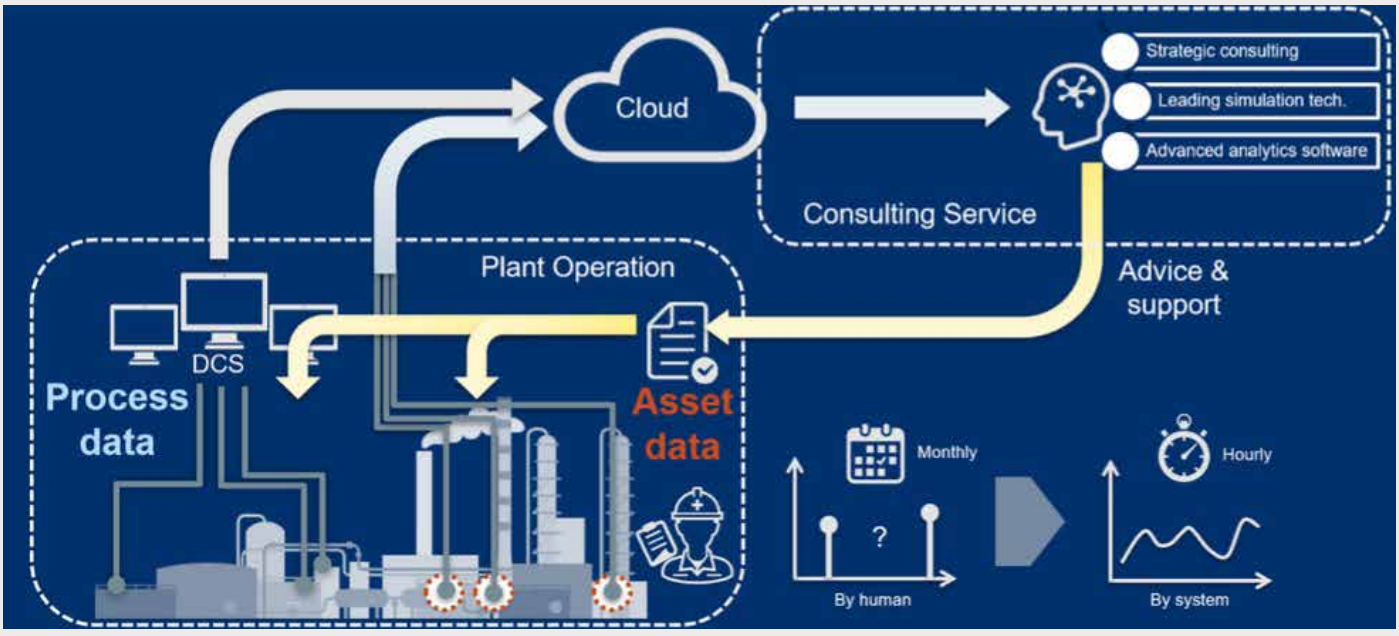


Figure 1: By integrating data into the cloud, an environment is created for cross-sectional analysis, with third-party consultants able to perform high-precision analysis and provide suggestions for optimizing production. Courtesy: Yokogawa Electric Corp.

Cloud Case Studies

It is no longer efficient to have workers doing rounds of equipment and assets, checking for potential failure. Those operators could be doing higher value-added work instead of filling in boxes on rounds reports attached to clipboards. It is just too easy for them to accidentally overlook a significant sign of abnormality, and failures often occur despite rounds.

For example, one plant was outsourcing vibration measurements for 200 items, with data collected monthly. This cost was approximately $48,000 per year, but frequent failures still occurred because the data was not digitalized, and the customer could not utilize the data for predictive maintenance.

The Yokogawa Group consulting company positioned dozens of sensor devices throughout the plant, with each transmitting data to the cloud. Cloud-based data management tools provided visualization and trend monitoring to indicate abnormal signs of incipient failure.

The consultant provides the information to plant personnel so they can act. The plant gets real-time equipment status reports. Automatic warnings are provided to plant technicians when failure can be predicted. Because the data is already digitalized, this methodology enables digital transformation of the plant.

Another plant installed wireless sensing devices on pumps, monitoring the acceleration for six months. In many cases, signs of abnormality occurred and were detected (see figure 2).

These potential failures were most often traced to broken balls in the bearing assembly. Early detection allowed predictive maintenance to be performed on the pumps, keeping them in service and reducing the costs of unplanned downtime.

Final Words

Simple wireless sensors are easy to install, relocate and connect to the cloud. Data in the cloud provides a force multiplier for consultants, and for maintenance managers, operators and other plant personnel. For many oil & gas plants and facilities, this is the quickest path to initial IIoT implementations.

Many sensors sending data to the cloud provides ubiquitous and real-time field information that can be analyzed and acted upon to prevent failures and downtime. It becomes possible to optimize production by integrating utility equipment data not associated with the DCS. The data can be used as input to a digital twin in the cloud mimicking plant operations, permitting the plant personnel and consultants to tune plant performance. The cloud-based data can be analyzed by experts located anywhere in the world using approved smart devices.

Sensing, with data storage in the cloud, therefore becomes "sense making" because it opens the way to digitalization of the plant. Digitalization leads to performance improvement and plant optimization.

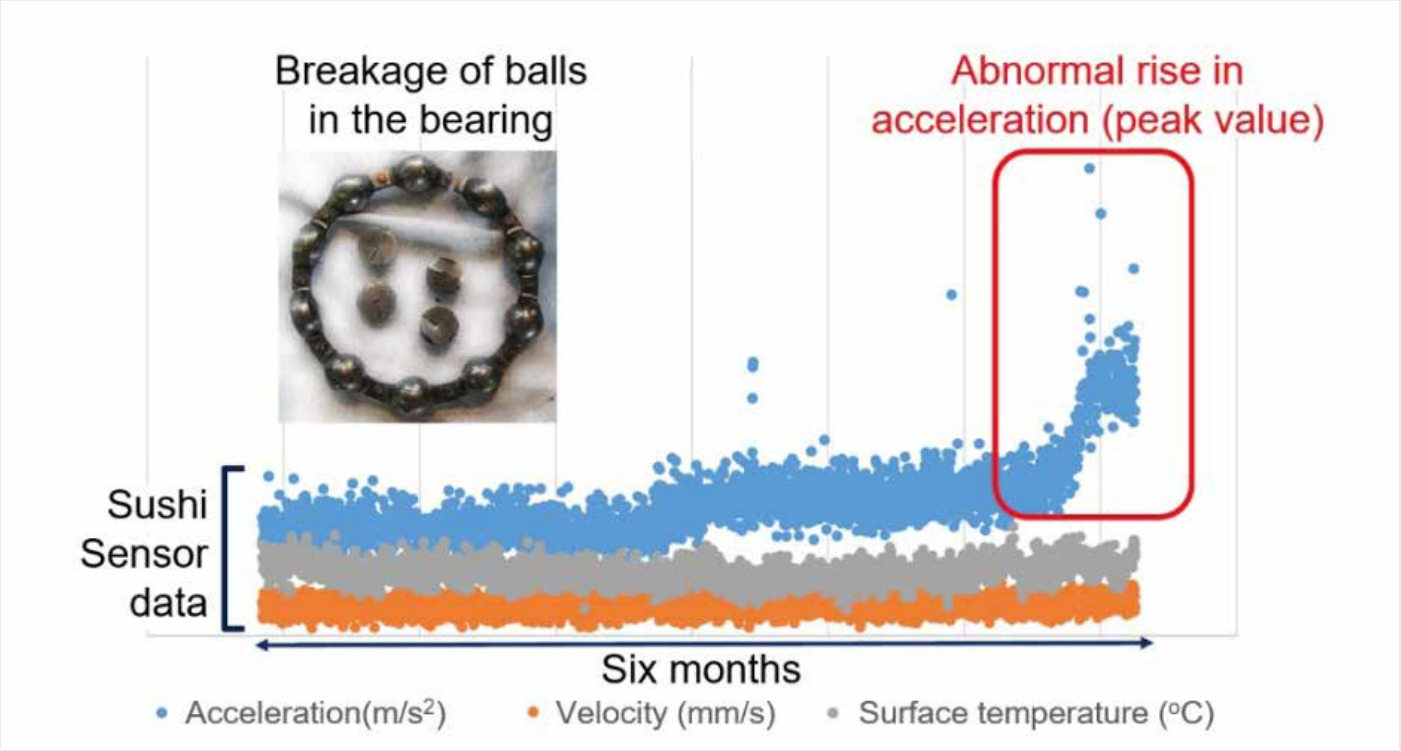


Figure 2: A sensor system monitored the acceleration of pumps and detected signs of abnormality before failure. Courtesy: Yokogawa Electric Corp.

Source: www.oilandgaseng.com

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Swimming Robots Used For Oil and Gas Operations

Simcoa used ABB's submersible inspection robot service, TXplore, to perform an internal inspection for one of their power transformers that was leaking oil.

Simcoa used ABB's submersible inspection robot service, TXplore, to perform an internal inspection for one of their power transformers that was leaking oil. Courtesy: ABB

Simcoa Operations is an Australian-based company committed to producing the world's highest quality silicon that is used in many of the products that make our modern lives easier. The company's manufacturing facility gets its power from the Australian grid through two power transformers.

Simcoa Operations sought the expertise of the local ABB Transformer Service team in Australia to perform an internal inspection for one of their power transformers that handles 50% of the facility's production capacity.

Their concern was traces of gas found in the unit's oil, indicating something was wrong. According to oil test results, the transformer had experienced discharges of high energy and electrical arcing. Initial hypothesis was that the issue is related to the tap-changer, a critical component in a transformer, and that it might need immediate maintenance.

Simcoa planned to have the inspection using the traditional method of personnel entering the confined space of the transformer, that requires first the lengthy process of draining out the oil and then adding breathable air. It would also put an incredible amount of strain on the other transformer to handle the additional power load.

This approach could take up to five days working around the clock and comes with safety concerns and limitations to which areas of the internals are visible to the human eye. Simcoa used ABB's submersible inspection robot service, TXplore, to examine the problem.

Despite poor visibility due to the dark oil, the robot was able to capture all internal areas and faults of the transformer using its onboard camera and LED lighting system. It was able to swim through tight areas and investigate and document all internal areas of the transformer.

The photos and videos taken during the inspection were streamed live and viewed together by ABB's transformer engineers and Simcoa Operations. It provided the data and evidence needed to make decisions for the next steps. Their tap-changer was operating fine and determined not to be the issue. On the same day that the unit was disconnected from the network, ABB concluded that the transformer could be energized and put back into service.

Reducing downtime and inspection costs, whilst enhancing safety

With the inspection service, there was no need to drain the oil, add breathable air or assemble a confined space rescue team. This saved the inspection process about 50% in costs. The trace amounts of gas in the oil would not stop the transformer from working properly and the issue was recommended to be addressed during the next planned outage.

ABB's inspection of the transformer was a critical activity for Simcoa Operations, both in terms of ensuring minimal shutdown of the transformer and enabling the issues to be identified quickly and safely. They had only one day shut down for this inspection as Instead of five or more days, they only had one day of shutdown.

Source: www.oilandgaseng.com

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"Sensorized" Skin Helps Soft Robots Find Their Bearings

Flexible sensors and an artificial intelligence model tell deformable robots how their bodies are positioned in a 3D environment.

For the first time, MIT researchers have enabled a soft robotic arm to understand its configuration in 3D space, by leveraging only motion and position data from its own "sensorized" skin.

Soft robots constructed from highly compliant materials, similar to those found in living organisms, are being championed as safer, and more adaptable, resilient, and bioinspired alternatives to traditional rigid robots. But giving autonomous control to these deformable robots is a monumental task because they can move in a virtually infinite number of directions at any given moment. That makes it difficult to train planning and control models that drive automation.

Traditional methods to achieve autonomous control use large systems of multiple motion-capture cameras that provide the robots feedback about 3D movement and positions. But those are impractical for soft robots in real-world applications.

In a paper being published in the journal *IEEE Robotics and Automation Letters*, the researchers describe a system of soft sensors that cover a robot's body to provide "proprioception" — meaning awareness of motion and position of its body. That feedback runs into a novel deep-learning model that sifts through the noise and captures clear signals to estimate the robot's 3D configuration. The researchers validated their system on a soft robotic arm resembling an elephant trunk that can predict its own position as it autonomously swings around and extends.

The sensors can be fabricated using off-the-shelf materials, meaning any lab can develop their own systems, says Ryan Truby, a postdoc in the MIT Computer Science and Artificial Laboratory (CSAIL) who is co-first author on the paper along with CSAIL postdoc Cosimo Della Santina.

> "We're sensorizing soft robots to get feedback for control from sensors, not vision systems, using a very easy, rapid method for fabrication," he says. "We want to use these soft robotic trunks, for instance, to orient and control themselves automatically, to pick things up and interact with the world. This is a first step toward that type of more sophisticated automated control."

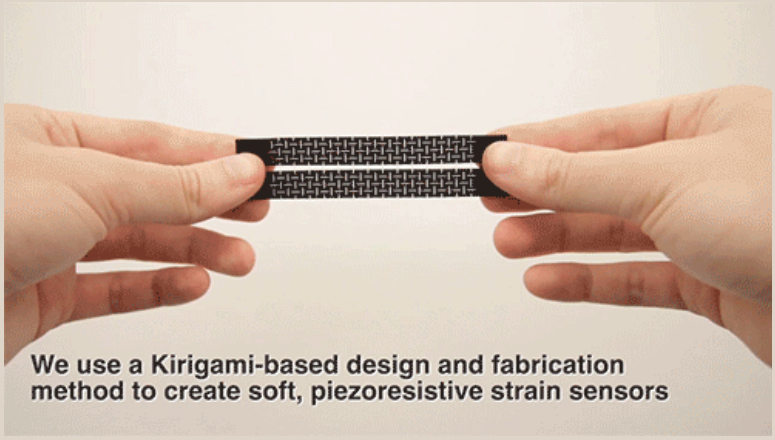
One future aim is to help make artificial limbs that can more dexterously handle and manipulate objects in the environment. "Think of your own body: You can close your eyes and reconstruct the world based on feedback from your skin," says co-author Daniela Rus, director of CSAIL and the Andrew and Erna Viterbi Professor of Electrical Engineering and Computer Science. "We want to design those same capabilities for soft robots."

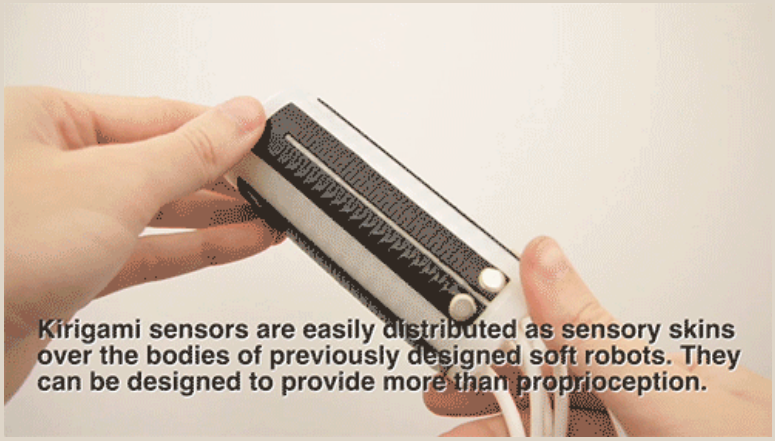
Shaping soft sensors

A long time goal in soft robotics has been fully integrated body sensors. Traditional rigid sensors detract from a soft robot body's natural compliance, complicate its design and fabrication, and can cause various mechanical failures. Soft-material-based sensors are a more suitable alternative, but require specialized materials and methods for their design, making them difficult for many robotics labs to fabricate and integrate in soft robots.

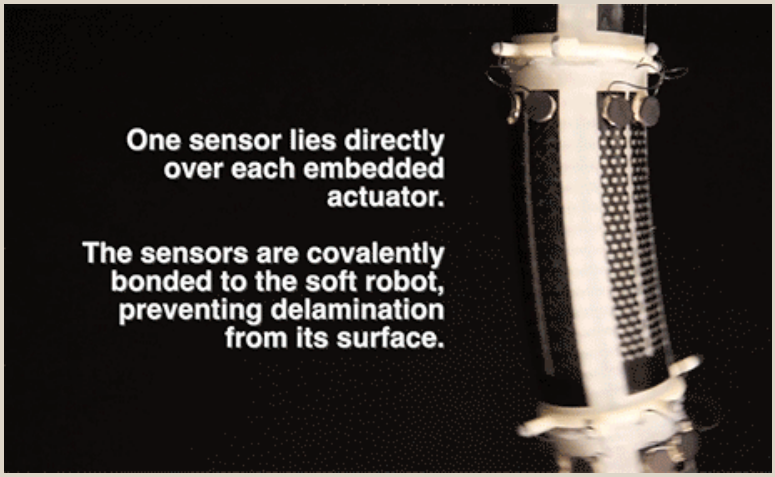
While working in his CSAIL lab one day looking for inspiration for sensor materials, Truby made an interesting connection. "I found these sheets of conductive materials used for electromagnetic interference shielding, that you can buy anywhere in rolls," he says. These materials have "piezo resistive" properties, meaning they change in electrical resistance when strained. Truby realized they could make effective soft sensors if they were placed on certain spots on the trunk. As the sensor deforms in response to the trunk's stretching and compressing, its electrical resistance is converted to a specific output voltage. The voltage is then used as a signal correlating to that movement.

But the material didn't stretch much, which would limit its use for soft robotics. Inspired by kirigami — a variation of origami that includes making cuts in a material — Truby designed and laser-cut rectangular strips of conductive silicone sheets into various patterns, such as rows of tiny holes or crisscrossing slices like a chain link fence. That made them far more flexible, stretchable, "and beautiful to look at," Truby says.





Credit: Ryan L. Truby, MIT CSAIL



Credit: Ryan L. Truby, MIT CSAIL

The researchers' robotic trunk comprises three segments, each with four fluidic actuators (12 total) used to move the arm. They fused one sensor over each segment, with each sensor covering and gathering data from one embedded actuator in the soft robot. They used "plasma bonding," a technique that energizes a surface of a material to make it bond to another material. It takes roughly a couple hours to shape dozens of sensors that can be bonded to the soft robots using a handheld plasma-bonding device.

"Learning" configurations

As hypothesized, the sensors did capture the trunk's general movement. But they were really noisy. "Essentially, they're nonideal sensors in many ways," Truby says. "But that's just a common fact of making sensors from soft conductive materials. Higher-performing and more reliable sensors require specialized tools that most robotics labs do not have."

To estimate the soft robot's configuration using only the sensors, the researchers built a deep neural network to do most of the heavy lifting, by sifting through the noise to capture meaningful feedback signals. The researchers developed a new model to kinematically describe the soft robot's shape that vastly reduces the number of variables needed for their model to process.

In experiments, the researchers had the trunk swing around and extend itself in random configurations over approximately an hour and a half. They used the traditional motion-capture system for ground truth data. In training, the model analyzed data from its sensors to predict a configuration, and compared its predictions to that ground truth data which was being collected simultaneously. In doing so, the model "learns" to map signal patterns from its sensors to real-world configurations. Results indicated, that for certain and steadier configurations, the robot's estimated shape matched the ground truth.

Next, the researchers aim to explore new sensor designs for improved sensitivity and to develop new models and deep-learning methods to reduce the required training for every new soft robot. They also hope to refine the system to better capture the robot's full dynamic motions.

Currently, the neural network and sensor skin are not sensitive to capture subtle motions or dynamic movements. But, for now, this is an important first step for learning-based approaches to soft robotic control, Truby says: "Like our soft robots, living systems don't have to be totally precise. Humans are not precise machines, compared to our rigid robotic counterparts, and we do just fine."

Source:news.mit.edu

An Interview with Ryan Lee, Business Development Manager at Emerson Automation Solutions

IIoT: Future of Factory Automation and Beyond

The AVENTICS intelligent air preparation unit combined with the Smart Pneumatics Monitor from Emerson enables customers to monitor energy consumption online.

About Ryan Lee

Ryan Lee is the business development manager for fluid controls and pneumatics solutions at Emerson. He supports customers within the food and beverage, pharmaceuticals and biopharmaceuticals, water and wastewater industries. He has more than 12 years of experience in the factory automation space.

About Emerson

Emerson is a global technology and engineering company providing innovative solutions for customers in industrial, commercial and residential markets. Our Automation Solutions business helps process, hybrid and discrete manufacturers maximize production, protect personnel and the environment while optimizing their energy and operating costs.

1. What are the current solutions offered by Emerson for factory automation and how does the company help the industry?

Emerson is a global provider of technology and engineering services that help manufacturers meet their toughest challenges and bring predictable success. We have the industry's broadest portfolio of automation technologies to help customers measure, control, optimize and power their operations. We also have the experience, expertise and global presence to help design and implement solutions that meet the most demanding application requirements.

With increasing demand for larger and more complex fluid control and pneumatic systems, Emerson is ideally positioned to deliver the required innovation, reliability and speed demanded within this evolving marketplace. Our engineers create industry-leading solutions and offer a range of support services that help to maximize customer operational efficiencies and generate measurable performance improvements across a wide array of industries and applications. These include automotive assembly and component manufacture, tire press, and production lines and packaging and filling applications within the food and beverage industry.

2. What are some of the current demands on the industry and how can IIoT help meet them?

Manufacturers are increasingly focused on making improvements that:

- Increase reliability, for example by doing predictive maintenance
- Improve sustainability by reducing emissions and energy consumption
- Optimize production and productivity
- Reach desired safety levels without compromising productivity

To achieve these performance goals, manufacturers are increasingly looking to undergo a digital transformation and implement new technologies and cultural changes within their organization. The food and beverage sector, as an example, is one of the industries that has embraced IIoT technologies. Manufacturers already have stringent controls in place throughout their process to ensure consistent quality and safe production. By installing automation technology with IIoT capabilities, customers are now monitoring all equipment and the whole production process. This is providing greater insight into energy consumption and losses, equipment health and machine performance.

With food and beverage production, the distribution control system and SCADA system has provided an overall view of the whole process. IIoT technologies provide the opportunity to monitor points previously overlooked or not possible. Manufacturers are keen to understand the Overall Equipment Effectiveness (OEE) of their machines. To improve OEE, the customer will focus on reducing unplanned downtime and improving yield and machine performance.

Emerson works closely with companies, firstly to classify and quantify each incident of unplanned downtime and then develop strategies that help to avoid them in the future. Emerson's range of IIoT solutions provides the customer with the required granularity to identify problem areas. For example, monitoring cylinder health and identifying potential issues earlier and rectifying them before they impact production is just one of the ways we can help companies to increase equipment availability contributing to improved OEE.

3. Food and beverage is one sector that you identified as ready to embrace the technology. Is there another industry that you think should start looking at it?

There are clear benefits for the water and wastewater industry. Potable water is scarce in many regions. Digital transformation can enhance process efficiency and support more effective water management. IIoT solutions can provide the necessary overview of how water is used in their area for more effective water management.

Emerson is working with many municipal bodies and corporations to digitally transform their plants and processes. For example, Emerson has worked with a provincial municipal body in Asia to help them better understand water usage in the region. By linking their monitoring systems to the metrological department using the cloud, water usage information has been synergized with data provided by the metrological department. This has helped the municipal to better determine the optimal way their processing plants should operate including the use of pumps to collect more rainwater during the rainy season.

OEE is calculated by multiplying the three OEE factors: Availability, Performance and Quality.

4. Can you share a case study of a successful implementation of IIoT for factory automation?

One of Emerson's customers in Asia recently invested in a solution that provided predictive maintenance to prevent the replacement of costly cylinders. This not only reduced machine downtime and labor costs but also saved the manufacturer expensive part replacements. The ROI for this application was made within twelve months. Another of our customers in the food manufacturing sector invested in IIoT technology that enabled them to analyze machine performance, identify leakages, and prevent unplanned downtime. This investment helped them to improve OEE and increase machine production significantly, with an ROI of fewer than three months.

5. Is IIoT implementation only for massive manufacturers? How do you guide new clients who may want to embark on these technology upgrades?

Organizations of all shapes and sizes can digitally transform their operations to realize performance improvements. Many companies have struggled to create an actionable roadmap or identify the business value, which has subsequently held them back. A lack of internal expertise and concern about the need for largescale investment may also be the factors in not yet adopting IIoT solutions. Emerson helps companies by developing and execute a tailored digital transformation plan to enable them to obtain their performance improvements. Companies can start small by addressing a key issue such as a problematic valve. Equally, we can help organizations to explore companywide programs across a single domain such as reliability, production or sustainability.

The AVENTICS Smart Pneumatics Analyzer from Emerson measures and visualizes data such as air consumption and pressure. It provides customers with real-time information and actionable insights, enabling them to quickly detect trends and leakages.

6. Does implementation of IIoT require a large investment?

When investing in new technology, it is always important to consider the return on investment (ROI). Emerson offers a range of scalable IIoT solutions that are quick and easy to deploy, enabling companies to obtain immediate quantifiable business benefits. We have many customers that have achieved an ROI in only three to four months, due to increased throughput, improved efficiency, and reduced downtime and energy consumption.

7. What advice would you give to companies who are new to IIoT and are hesitant about adopting it?

Global competition requires manufacturers to strive for operational excellence to ensure they are competitive and profitable. To achieve these goals, manufacturers are increasingly looking to digitally transform their operations. For those still hesitant, Emerson provides a range of services to support customers, with experts experienced in identifying opportunities to implement IIoT solutions that will provide the performance gains they need. We also offer IIoT introductory sessions to provide the opportunity to learn how to build successful IIoT strategies, turn new and existing data into actionable insights to improve performance and to help establish the ROI for IIoT applications.

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INDONESIA 4.0

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1st-2nd of July 2020

Nusantara Hall - ICE BSD City, Tangerang

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INDONESIA 4.0 CONFERENCE & EXPO 2020

is the only Indonesia's industry 4.0 event that will gather all the stakeholders not only from manufacturer but also from other cross sectoral industrial zones, such as Energy, Health, Transportation, Tourism, Construction, Defence, and Finance.

Program Activities

Indonesia 4.0 Conference
Learn from 40 VIP Speakers about the development of industry 4.0 in Indonesia, cross industrial sectors. Understand government policy, how to adapt with the trend, discover the latest technologies/solutions, learn the industry 4.0 case studies, and what this all means for your business and nation.

Technology Seminar Forum
A free-to-attend theater in the exhibition hall. Presentation from leading technology /solution /consultant vendors from all around the globe on their technologies, solutions, applications, products, and services.

Indonesia 4.0 Exhibition
A display from over 100 exhibitors/sponsors showcasing the most relevant and cutting edge industry 4.0 technologies, solutions, applications, products and services to over 5000 trade visitors from government and private sectors.

Factory Tour Plant
Invited audiences will be joining a factory tour plant to one of the biggest plants around Jakarta. The purpose of having this program is to see the real future factory so then people can learn and adopt the system and the technology.

Government Patrons

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An Interview with Mr. Tiong Khe Hock, the Managing Director of OMRON Electronics Sdn. Bhd

OMRON ELECTRONICS SDN. BHD

BACKGROUND

"To improves lives and contribute to a better society"

OMRON Industrial Automation has been present in Malaysia for more than 30 years. OMRON Electronics Sdn Bhd offers sales and distribution of industrial automation components together with engineering services. OMRON aim to assist our end customers to reduce cost and to achieve higher quality and productivity.

Training Services

OMRON provides training services for those using industrial automation equipment for the first time as well as for those learning the advanced functionality of an upgraded system. OMRON training provides the critical link needed to transfer what is learned in the classroom directly to the job site.

OMRON certificate will be given upon course completion. In addition, all training courses are recognized by Human Resources Development Fund (HRDF).

Technical Services

OMRON offers a rapid response after sales service for product repairs and returns to support maintenance programs and minimize downtime should problems occur on site. A fully equipped technical service center enables OMRON to provide quick maintenance to defect products and also providing technical support to end customer.

Network Distribution

OMRON has a well structured distribution network of offices located at strategic locations to serve large installed base of customers from all over Malaysia.

Customers can get OMRON products at their convenience in terms of availability and service. OMRON Distribution Network is divided into regional network namely: Northern Region, Central & East Coast Region, Southern Region and Malaysia.

There are 2 tiers of distribution channel that is, OMRON authorized distributors and OMRON authorized dealers working closely to meet the customer's needs.

The General Manager of OMRON Electronics Sdn. Bhd., Mr. KS Lee was explaining the function of Mobile Manipulator Robot during SEMICON 2019

The staffs of OMRON Electronics Sdn. Bhd.

Engineering & Solutions

OMRON Electronics engineering and solution team provides project management and other application consulting services. OMRON has a competent engineering and solution team that caters for these core engineering services:

Industry involved:

- Process Industry
- Building and Infrastructure Industry
- Waste Water and Sewerage Treatment Industry
- Automotive Industry
- and more

The staffs of OMRON cleaned up the rubbish in FRIM, Kepong during OMRON Day

OMRON and Society

OMRON Corporation was founded on 10 May, and every year OMRON worldwide devotes their anniversary to perform charitable activities and celebrate the spirit of community and volunteerism. This is known as OMRON Day.

OMRON Electronics Sdn Bhd has been playing their part in carrying out charitable activities not only in the form of monetary contribution to the needy but also all-out visiting orphanages, old folks homes, refurbishing charity homes and collecting clothing and books for aid organization.

Addressing environmental issues has been the key management objective of OMRON. OMRON creates eco-friendly products that contribute to global warming prevention, reduced resource consumption, and reduced pollution.

MR. TIONG KHE HOCK PROFILE

Tiong Khe Hock is the Managing Director of OMRON Electronics Sdn Bhd. He holds a bachelor degree in engineering and has over 35 years of experience in the field of instrumentation, control and industrial automation. He has led the company for almost 20 years and has built a team of competent sales and application engineers capable of offering automation solutions to meet the diverse needs of its clients. He is also the President of Malaysia Automation Technology Association (MATA), a leading association focusing on industrial automation in Malaysia.

INTERVIEW QUESTIONS

1. OMRON offers sales and distribution of industrial automation components with engineering services. On what basis does OMRON differ from other companies that also provide the same components and services?

OMRON differs from other competitors in our approach in solving our customers' problems. We can offer various solutions using our widest range of products consisting of input, logic, output, robotics and safety (ILOR+S) components bundle with engineering services, all from a single company.

2. One of the key management objectives of OMRON is to create eco-friendly products that contribute to global warming prevention, reduced resource consumption, and pollution. With the climate change issue that is on the rise right now, could you explain more on this?

As stated in the OMRON Principles, our mission is to improve lives and contribute to a better society. Sustainability is one of the important aspects of how we manage our business. OMRON manufactures high quality products and ensure that all our products are eco-friendly and made from non-hazardous materials. In response to climate change and global warming, OMRON made a pledge to achieve zero greenhouse gas emissions by 2050. At OMRON, 90% of our greenhouse gas emissions are from our electricity usage. We focused our efforts to reduce the impact to the environment by increasing the usage of renewable energy in our business activities. At the same time, OMRON is also in the business of providing energy management solutions to our customers. We contribute to energy usage efficiency with our solutions that centred around energy storage control technologies and visualization of energy usage.

3. OMRON offers a lot of solutions such as OMRON Enterprise Manager, SYSMAC Traceability Solution, and AnyFeeder Solution. What is OMRON's best solutions so far?

The vision of OMRON's Industrial Automation Business is to bring innovation to manufacturing by automation, to enrich lives of people all over the world. Our best solutions centered around the concept of **Innovative-Automation** by leveraging on OMRON core technologies in **sensing and control + think**. This concept consists of 1) **integrated automation** through evolution of control by achieving ultra-high-speed and ultra-high-precision machine control with our widest range of control devices in the industry; 2) **intelligent automation** through incorporation of AI and IoT in all manufacturing control devices, driving machines themselves to learn and evolve ; 3) **interactive automation** to achieve a new level of harmonization between humans and machines where machines move autonomously and work together with humans.

4. Recently, OMRON globally launches LD-250 Mobile Robot to move payloads up to 250kg that is the strongest and newest addition to the company's LD series of mobile robots. How does this product increase the speed of innovation

OMRON is the original pioneer of industrial mobile robots with the largest

install base in the world. The LD250 is based on the same tested and proven technology used in the industry leading LD90, with a higher payload capacity and tougher body. The LD250 will allows us to go into applications that previously we were not able to serve such as warehouse automation that need higher payloads. With LD250, our customers can take full advantage of our autonomous mobile robots (AMRs) that can navigate autonomously and avoid obstacles safely without physical guides. These capabilities are not available in conventional automated guided vehicles (AGVs).

5. Besides the distribution of industrial automation components with engineering services, OMRON also carries out charitable activities such as visiting orphanages, old folks homes, refurbishing charity homes and collecting clothing and books for an aid organization. Mind to share more on this?

Since 1991, OMRON has been practicing Founder's Day activities globally on May 10 every year. During this period, OMRON offices globally will carry out all forms of meaningful and charitable activities to help the local community. In 2008, OMRON launched Worldwide "**Eco-Volun**" Campaign, a five-month program of environment and volunteer work by OMRON Group employees around the world in conjunction with OMRON's 75th anniversary. Points were awarded to employees for environment friendly and volunteer activities e.g. recycling, carpooling, volunteering in charitable homes etc on a weekly basis. Based on the points collected from employees globally, OMRON made sizable donation to charitable organizations accordingly. This is a very meaningful and memorable event to many OMRON employees worldwide.

6. What is OMRON's approach to the small factories? As the industrial automation components are not considered affordable to them.

OMRON has been championing low-cost automation which is most ideal for smaller factories. We provide many basic automation components like Programmable Logic Controller (PLC) and sensors that are very economical. They can start by using OMRON's micro PLC and sensors to do data collection and simple logic control. With data monitoring, they can then investigate ways to improve their machine efficiency and productivity. If they employ a lot of manual labour to do repetitive works, they can then consider using robots to reduce the manual work gradually.

7. Based on the notion that robots will take over human power as IR 4.0 is proliferating, what is your point of view regarding it?

Industrial robot has been around for a long time. When robot was first introduced, people were fearful that robots are going to take over human jobs. Over the years, we have seen that robots mostly took over humans' mundane and repetitive jobs but let humans focus on more meaningful and higher value jobs. With the arrival of Artificial Intelligence (AI), we expect robots to become smarter thus I supposed some jobs will be replaced. At the same time, this is expected to create more higher value jobs in the areas of data analytics, AI, robotic programming and technical support services.

8.What does OMRON plan and strategy to contribute to the IR 4.0 in Southeast Asia for the next 5 years?

Our approach toward IR4.0 will focus on three main pillars namely AI, Internet of Things (IoT), and Robotics. This is fully in line with our concept of Innovative-Automation in manufacturing that consists of 1) **integrated automation** 2) **intelligent automation** and 3) **interactive automation** that has been explained earlier. OMRON has many practical experiences in implementing this Innovative-Automation concept to many customers in Japan. The Aisin AW Okazaki factory, a world's leading automotive parts manufacturer located in Japan is a good example of how they could become an **Innovative-Automation** Smart factory in cooperation with OMRON. We will share our knowledge and experiences in innovative-automation with our customers in this region.

Mobile Robot

FHV7 Vision Camera

What Healthcare Transformation in Asia Will Look Like In 2020

While 2019 was seen as an impressive milestone for digital healthcare firms, we should notice five transformations that will reshape the industry in 2020

Asia has more space to heath tech start-ups than anywhere else. The region's economies have gained spectacular development, enclosed with higher spending on the healthcare sector among Asians' pockets.

According to OECD's report, Southeast Asia (SEA) has seen an extreme expansion of healthcare expenditure. Except for Singapore, SEA nations are predicted to spend more than 70 per cent of the budget on healthcare system compared to the statistic from 2017.

In the next five years, ASEAN 6 countries, including Vietnam, the Philippines, Singapore, Thailand, and Indonesia, expectedly raise their expenditure to roundly US$750 billion. Furthermore, the value of the medical tech industry will surpass US$130 billion in 2020.

It means that digital health and medicine will remain a hot topic in the next decade. In which, Electronic Health Records (EHR) are reported to grow by approximately five per cent per year. This prediction comes up with the idea of "beyond hospital to community", which is claimed to be the future of the health industry. In this kingdom, digital hospitals will be the king.

In the dawn of a new decade, we expect remarkable change in the healthcare sector, including novel projects, investment flow, IPO, cybersecurity, and M&A.

E-Commerce Giants Join the Digital Health Market

Undoubtedly, e-commerce firms could gain confidence in the race of health tech innovation. They own enormous customer data and purchasing behaviour, which is valuable in building customer relationships for their next project.

In 2019, Amazon revealed a minor part of its Amazon Care plan, a virtual care platform.

In pursuing its project, Amazon acquired a digital diagnostics platform Health Naviator and integrated it with JP Morgan insurance. Amazon Care will predictably be launched as an Amazon Prime service at the end of 2020, serving over 105 million current subscribers of this brand.

Asia currently holds powerful advantages in the forms of high population and rapid growth in the e-commerce industry. With a similar scenario, Asian e-commerce giants could create another version of Amazon serving in Asia.

Typically, Alibaba and Lazada have a high incentive to invest in telehealth. Additionally, after the coronavirus crisis in Wuhan, China might upgrade their healthcare strategies to be in favour of private sector investments.

Digital Health Start-ups to Mature In 2020

As mentioned above, 2020 is the game of incumbents. Several digital therapeutics start-ups might feel confident with their financial ability, while others might get into a joint venture with tech giants.

As a successful Singapore start up, DoctorAnywhere readies itself to expand to Vietnam. It integrated with ViettelPay, a big Vietnamese payment platform, to set up the first virtual clinics in Vietnam.

China's Ping An Good Doctors collaborated with tech unicorn Grab to deliver their internet hospital in Singapore. As a result, a higher barrier in the health tech sector has been built to deter new entrants.

This situation also encountered in the US, where well-funded digital therapeutics providers got enough cash to sustain. Livongo added a series of small companies to its partner networks. Omada announced an expansion plan that provides treatment for more diseases, instead of just diabetes.

At the end of 2019, several medical incumbents return to the race. That time, the world saw a decreasing trend in investor appetite globally. The measured indicated both funding and deals experienced an extreme drop by roundly 40 per cent.

Digital Health Providers Keen on Staying Private - Instead of Going Public

We have no optimistic view of the IPO situation of private health tech firms in 2020. Although Asia Pacific dominated the global IPO volume last year, we have evidence to believe that IPO activity will slow down shortly. This perspective mainly due to the economic instability in Asia at the beginning of 2020.

IMF has cut down its growth forecast for the majority of Asian countries. Particularly, Singapore's expected growth rate dropped from 2.4 per cent to one per cent. The forecasted growth rate for China would be 5.8 per cent instead of 6.1 per cent.

Reasons came from the political crisis between China and the US; or China and Hong Kong. The current situation would lead to a significant decrease in foreign investment in this area. In fact, the IPO activities in the Asia Pacific fell by 12 per cent in volume and 27 per cent of the process in 2019, in comparison with that in 2018.

IPO reports for Asia proposed the downtrend in the IPOs market from several nations, including Greater China, Japan, and Australia. The same situation had happened in SEA 2019, where both IPO deals and fundraising decreased by eight per cent and 55 per cent, respectively.

With the economic slumps predicted to continue in 2020, several health companies have the incentive to keep its business in private.

Cybersecurity Risks in Healthcare

In fact, 2019 was seen many serious cyberattacks targeting healthcare firms. A data breach resulted in exposing health data of over 32 million people. Additionally, those attacks were worsened by the increasing trend of scales, frequencies, and money loss.

Over 14,000 Singapore citizens' medical data from HIV Registry has leaked to the internet. Australian authorities announced the risk of roughly 100 breaches detected from January to June 2019.

Healthcare leaders have more concern in ransomware attacks than any other threat. The risk for ransomware in Asia reported being 40 per cent higher than the global average.

Vietnam, Indonesia, and India remain with the highest encounter rates. In 2020, there will predictably be more hospital shutdowns with larger volumes and more disruptive because of ransomware.

In fact, governments and authorities would invest a high effort in dealing with cyberattacks. Government funds expectedly address unchecked cybercriminals. Alternatively, they should enforce cybersecurity protocols supporting hospitals.

M&A Could Be Efficient Strategies for Health Tech Firms In 2020

M&A activities in the Asia Pacific will expectedly follow the global increase trends in 2020. Instead of IPO, telehealth start-ups tend to choose M&A and joint ventures in terms of optimising financial and operational performances.

Following the US, Asia would become the largest regional location for medtech growth, predictably rise by 35 per cent in 2023. Additionally, M&A across the continent might increase, since 61 deals

have been made by Asian buyers and firms in the EU and US.

Regarding electronic health record (EHR), Google plans to develop a project for potential EHR tools. The power of Google is indisputable, causing current EHR firms in the market to pursue M&A plans in beating the potential domination of tech giants in the market.

A combination of the factors above makes the scene for healthcare start-ups in Asia in 2020 quite exciting.

Source: e27.co

What the World Can Learn from Japan's Robots

Japan is changing: a rapidly ageing society, a record-breaking influx of visitors from overseas, and more robots than ever. That's where the country's young people come in. Gen J, a new series by BBC Worklife, keeps you up to speed on how the nation's next generation is shaping the Japan of tomorrow.

At a sleek office building in Shinagawa, Tokyo, workers are strolling in and out for lunch. As they walk through the glass doors, they pass two security guards, each dutifully flanking the passage in stern silence. It all seems pretty unremarkable, until you realise one of those security guards is a robot.

Standing up to five feet tall with wheels and a blue police cap, "his" name is Ugo. His battery lasts up to half a work day, and every two hours he'll do a routine patrol around the building – even summoning lifts by pushing the call button himself. His digital "face" – which usually displays two big blue cartoony eyes – is replaced with the Japanese text for "on duty".

"It's important for the robot to feel cute, so you're not intimidated," says Ken Matsui, CEO of Mira Robotics, the start-up behind Ugo. Right now, the police bot – whose built-in camera allows guards downstairs to see things from the robot's point of view – is one of only two prototypes in the country. But Matsui says companies in China and South Korea are interested in his company's work, which also includes cleaning robots for use in houses and schools.

In recent years, headlines, pundits and politicians have often warned that we're in the midst of a job-stealing robot revolution; but roboticists argue that their creations will complement, rather than replace, us. In Japan, the robots are already here – what's more, many are actively embracing the robot age, from suburban nursing homes to the highest levels of government, which announced an investment of 100bn yen ($100m) in robot development a few years ago. Some entities are even highlighting robotic colleagues as a selling point to young, new recruits.

As the Tokyo 2020 Olympics approach - an arena for companies like Toyota to show off new humanoid robots that will interact with guests and help athletes on the field – the world's attention is turned to Japan. And for good reason: amid fast global ageing and increased automation, it could be that Japan's robot-friendly present is everyone else's future.

New Technology, Ageing Population

In Tokyo's Silver Wing nursing home, about two dozen seniors are sitting in the common area as pudding cups are distributed. In the middle of the room is a staff member and a humanoid robot named Pepper, who is leading the room in group games and exercises.

This robot mascot for Tokyo's 2020 Summer Olympics was unveiled by Toyota last year. The car giant will also reveal human assistance robots during the Games (Credit: Getty Images)

This police robot acts as eyes and ears for human officers in a different room. Countries like China and South Korea have expressed interest in such tech (Credit: Bryan Lufkin)

Pepper's hosting a game of "guess the kanji", as a big screen shows super-magnified parts of Chinese characters that the crowd have to identify aloud. Many of the residents are dementia patients.

"We ask residents with dementia where they are and who they are in natural conversation with communication robots and human staff," says Kimiya Ishikawa, director of Silver Wing. "It's hard [for humans compared to robots] to remember each resident's personal information, so robots are utilised [to help] in that area."

Japan is facing major demographic challenges due to the elderly wave, low fertility rates and a shrinking population - Roger A Søraa

But it's not only in the common room that robotics is being employed. Upstairs, staff have access to robotic exoskeletons that fit around the waist and lower back: these apparatuses ease the severe body strain as they help their elderly clients get in and out of bed. (Some studies have shown that over 80% of nurses in Japan experience lower back problems.)

"Japan is facing major demographic challenges due to the elderly wave, low fertility rates and a shrinking population. This leads to a number of issues facing Japanese society which the West can learn from," says Roger A Søraa, robotics researcher at Centre for Technology and Society in Norway. "Elderly care facilities and hospitals see a severe lack of healthcare workers; there are not enough humans to do the tasks the way they used to be done."

Kayoko Fujimoto, chairperson of trustees for the Ryusei Fukushikai Social Welfare Foundation, runs a nursing home in Hyogo prefecture, about 100km southwest of Kyoto. Last year she wrote a bestselling book seeking to reinvent the image of nursing home work, and she thinks robots can help.

At the Hyogo nursing home, staff have rolled out several robots that have been big hits with residents, like Paro the talking, fuzzy baby seal bot, which was developed a decade ago. Residents love to play with him because he's cute, and the staff love him because he's clean, doesn't require food and no one's allergic to him.

One of the most popular additions is Telenoid: a baby-like robot with no legs and tiny arms. A staff member in a different room talks through the robot, and the voice comes out of its mouth. Some publications have criticised Telenoid as being creepy, but Fujimoto and her staff say it's beloved by the residents.

One resident, a woman with dementia, holds a Telenoid as 27-year-old staff member Minami Okabe, down the hall, sings a Japanese folk song into a headset. The smiling resident holds Telenoid like a baby and says, "Let's sing a song again". The staff say that this particular patient is usually very quiet, but not with the robot. "It's fun, seeing them react like that," says Okabe, who's worked at the nursing home for five years. "They react differently to the robots than they do to us."

Telenoid was developed by Osaka University's Hiroshi Ishiguro, the roboticist who made international headlines when he created his own android doppelgänger. He's a celebrity in Japan, and he's not the only high-profile tech entity Fujimoto's worked with: there's also Panasonic, NTT Docomo (Japan's main mobile phone operator) and Daiwa

Critics call the Telenoid robot creepy, but government officials from around the world have visited this nursing home to see how it helps dementia patients (Credit: Bryan Lufkin)

House, Japan's largest homebuilder. "In Japan, the speed of an ageing society is faster than in other countries, [so] the government is promoting developing robots," says Fuijimoto. "We want to help as an experimental facility."

Working in nursing homes, she says, has not traditionally been seen as an attractive job. Her hope is that talented young people will see how she is using new technology – from big, recognisable tech companies – and be enticed into this line of work. That was the case for Okabe, who read about how the home was using Telenoid in a leaflet. "There are many people, including students, who come here to see this," she says.

Japan is quite domestic-oriented, and we don't accept many immigrants, so robots are more suitable - Ken Matsui

'Automation, Not Immigration'

Still, whether Japan will lead a 'robots in the workforce' revolution remains unclear. Rian Whitton, senior robotics analyst at global tech market advisory firm ABI Research, says that robot deployment in places like nursing homes is low in practice and that Japan's recently eased rules for low-wage migrant workers show that the government knows widespread automation isn't yet possible.

He also points out that China and the US, for example, are quickly catching up to Japan in areas like homecare robotics. "Ultimately, Japan is going to go from the top vendor for robotics globally, as it used to be, to being a relatively strong player alongside Germany, South Korea, Singapore and Taiwan," he says. "[Japan] will lose influence relative to the Chinese and American robotics ecosystems."

In fact, in one report released by the International Federation of Robotics last year, South Korea, not Japan, had the most industrial robots – manufacturing robots that assemble electronics and vehicles, for example – already in the workforce, with Germany not far behind. Plus, South Korea, like Japan, is also rapidly ageing, meaning local robotics companies are gearing products towards the demographic changes.

Yet in Japan's favour is its very long history of embracing robots, not fearing them. In the West, pop culture and media often frame robots as job-stealing Terminators itching to start a revolution. In Japan, they're often cute and cuddly; anime and manga have depicted robots as things to love. Others point to a respect for inanimate objects that's rooted in Shintosim.

Hiroshi Ishiguro, famous for creating a robot doppelganger of himself, is one of many that say the robotic solutions in Japan will soon apply everywhere (Credit: Bryan Lufkin)

Pepper, a robot created by tech giant Softbank first released in 2015, leads a game in a nursing home. Such robots still aren't commonplace, however (Credit: Bryan Lufkin)

Another factor is ingrained resistance to immigration, despite the recent moves to allow more foreign workers in. As Japan's workforce ages and shrinks, employers will struggle to fill low-wage jobs in retail or food service, for example. That's prompted domestic calls to embrace robotics, with headlines like "Graying Japan wants automation, not immigration."

One area that needs workers is housekeeping services. With more pensioners and fewer workers, demand for in-house caregivers and cleaners is on the rise. That's why Mira Robotics has also created a butler robot that can do simple tasks like wash dishes, fold clothes and vacuum, which are actually quite complex tasks for a robot.

"In other countries, like Hong Kong, the solution is to have more immigrants, but it's not a perfect solution," says Mira's Matsui. "Japan is quite domestic-oriented, and we don't accept many immigrants, so robots are more suitable."

Many of these robots – Ugo, Telenoid and others – can be used or monitored by humans from a remote location. That makes it possible for elderly or disabled individuals – people who might otherwise be excluded from the workforce – to command such robots, or even someone in a different city.

Not just Japan will have more robots, but the whole world - Hiroshi Ishiguro

Normal, like smartphones

Looking forward, Silver Wing's Ishikawa says that major research is going into making social robots that can detect – and predict – healthcare changes in people. For example, the robots that record conversations to help human caregivers track a dementia patient's progress could soon also monitor vital signs and, using AI, compare that data to a symptoms database, extract correlations and calculate the risk of a condition worsening.

Hiroshi Ishiguro, the Osaka University roboticist, says we'll see other cute, communicative robots in places like hotel rooms or restaurants (where touch-screen menus are already commonplace in Japan) to assist guests in other languages. Meanwhile, government initiatives continue: last year, robots began to be rolled out in 500 classrooms across Japan to help teach English after a 250m yen ($2.3m) investment from the Education Ministry.

That could, in turn, help Japan's younger generation grow up at ease with robots in a variety of environments. Ishiguro believes that they will integrate into our lives the same way smartphones did a decade ago. "Not just Japan will have more robots, but the whole world," he predicts.

Whitton agrees, though he says the timescale is not yet clear. "I see all major economies adopting industrial policies related to robotics and other technologies in line with what China and Japan have been doing for decades," he says.

Source: www.bbc.com

Solutions for Networking Lag in Massive IoT Devices

Researchers have proposed a system that would use currently underutilized resources in an existing wireless channel to create extra opportunities for lag-free connections. The process, which wouldn't require any additional hardware or wireless spectrum resources, could alleviate traffic backups on networks with many wireless connections, such as those found in smart warehouses and automated factories.

The internet of things (IoT) widely spans from the smart speakers and Wi-Fi-connected home appliances to manufacturing machines that use connected sensors to time tasks on an assembly line, warehouses that rely on automation to manage inventory, and surgeons who can perform extremely precise surgeries with robots. But for these applications, timing is everything: a lagging connection could have disastrous consequences.

Researchers at the University of Pittsburgh's Swanson School of Engineering are taking on that task, proposing a system that would use currently underutilized resources in an existing wireless channel to create extra opportunities for lag-free connections. The process, which wouldn't require any additional hardware or wireless spectrum resources, could alleviate traffic backups on networks with many wireless connections, such as those found in smart warehouses and automated factories.

The researchers announced their findings at the Association for Computing Machinery's 2019 International Conference on Emerging Networking Experiments and Technologies, one of the best research conferences in networking techniques. The paper, titled 'EasyPass: Combating IoT Delay with Multiple Access Wireless Side Channels', was named Best Paper at the Conference. It was authored by Haoyang Lu, PhD, Ruirong Chen, and Wei Gao, PhD.

"The network's automatic response to channel quality, or the signal-to-noise ratio (SNR), is almost always a step or two behind," explains Gao, associate professor in the Department of Electrical and Computer Engineering. "When there is heavy traffic on a channel, the network changes to accommodate it. Similarly, when there is lighter traffic, the network meets it, but these adaptations don't happen instantaneously. We used that lag -- the space between the channel condition change and the network adjustment -- to build a side channel solely for IoT devices where there is no competition and no delay."

This method, which the authors call "EasyPass," would exploit the existing SNR margin, using it as a dedicated side channel for IoT devices. Lab tests have demonstrated a 90 percent reduction in data transmission delay in congested IoT networks, with a throughput up to 2.5 Mbps over a narrowband wireless link that can be accessed by more than 100 IoT devices at once.

"The IoT has an important future in smart buildings, transportation systems, smart manufacturing, cyber-physical health systems, and beyond," says Gao. "Our research could remove a very important barrier holding it back."

Source: www.sciencedaily.com

How Technology Is Making Warehouses More Efficient

Warehouses are getting busier by the day as e-commerce companies gain traction in new and emerging markets.

In Asia, particularly, the e-commerce boom has created a strong demand for more efficient warehouses, and logistics companies are turning to technology to build the next-generation storage spaces that can cater to this industry.

What's interesting to note is that unlike other sectors, in logistics and warehouse, digital solutions that are making the biggest impact are those that leverage a combination of technologies rather than just one.

Further, warehouses of the future, although physical in nature, are increasingly becoming digital, data-driven units.

Here are some of the key ways modern warehouses are using technology to build their business:

1 | Leveraging Sensors and Robotics

In recent times, sensors have become quite affordable. As a result, it's making more of a debut in warehouses.

Sensors not only help keep track of what is going on in the warehouse, but also ensures that sensitive materials such as chemicals and food products have the right temperature, humidity, lighting, and other storage conditions.

Robotics, another technology that is becoming cheaper, is used in the warehousing space, in conjunction with sensors, to ensure the storage spaces can run more efficiently, and be in operation around the clock.

New-age robots are also much slimmer and easier to manoeuvre — helping to maximize the space crunch in modern warehouses in cities such as Singapore and Hong Kong, where square-footage is always at a premium.

2 | Making the Most of Wearables and Barcodes

When Amazon made headlines tracking the movements of staff in warehouses with wearable devices, it drew the attention of several critics.

However, the technology is something several businesses use in their warehouses, in order to understand what tasks workers struggle with and how those can be optimized.

Further, new-age warehouses use barcodes (often alongside RFID tags) on parcels to not collect data on incoming and outgoing parcels but also to track the parcels within the warehouse.

Doing so ensures that workers are doing their jobs efficiently, and makes the company aware of tasks that need to be optimized because they take too long or hinder workers from completing tasks quickly.

3 | Smart(er) Inventory Management Systems

Warehouses store inventory. If they're owned by a single company, they hold data about that particular company. If they work with many clients, they keep stock of the inventory of several businesses.

Ultimately, however, these warehouses know what items are in stock, how long it took to get there, how long it was on the shelf, and where it is going next.

That data is really valuable to managers who're looking to take their demand and supply forecasts to the next level — and hence, if warehouses make their systems smarter, they're able to deliver better insights — to their own company or to their clients — increasing the value of the work they do.

Source: techwireasia.com

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2019 Post Show Report Figures:

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*Statistic Extracted from 2019 ASEAN Super 8 Post Show Report

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Need for Construction Industry 4.0

The Industry 4.0 has been much talked about buzzword, both locally and globally. The term refers to the Fourth Industrial Revolution, comprising growing trends in the technology such as of Autonomous Robot; Big Data Analytic, Cloud Computing technologies; Internet of Things (IoT), Additive Manufacturing (3D printing), System Integration, Cyber Security, Augmented Reality, Automation, Simulation and Artificial Intelligence (AI).

The Fourth Industrial Revolution is an overarching industrial transformation that covers every aspect of industries and economic activities including every aspect of living. It is a total transformation of all sectors into new system and/or way of life that will change the way we do businesses.

The Ministry of International Trade and Industry (Miti) launched the National Policy on Industry 4.0 (Industry4WRD) to provide a concerted and comprehensive transformation agenda for the manufacturing sector and its related services.

The government will allocate RM210 million from 2019 to 2021 to support the transition and migration to Industry 4.0. The Malaysia Productivity Corporation (MPC) will carry out Readiness Assessments to assist up to 500 Small Medium Enterprises (SMEs) to migrate to Industry 4.0 technologies.

However, Industry4WRD embraces Industry 4.0, only focuses on the manufacturing sector.

The construction industry is starting to see the impact of Industry 4.0 in terms of the technologies to be used and building specifications. The construction industry is going through a major change with innovative new technologies pushing for industry penetration updating and upgrading current ones.

Some of the major technologies advancement in construction industry are Building Information Modelling (BIM); Drone Technology; Industrialised Building System (IBS) and Green Building Construction

Building Information Modelling

BIM is a modelling technology and associated set of process to produce, communicate, analyse and the use of digital information models throughout the construction project life-cycle. BIM is an intelligent three-dimension (3D) model-based process that gives the architecture, engineering, and construction professionals an insight and tools to more efficiently plan, design, construct and manage buildings and infrastructure.

The advantages of using BIM technology includes improvement of the efficiency of planning and design stage of the construction project. The 3D visualisation also has the ability to provide details of every infrastructure and items within it.

Building Materials and Quantities can be extracted from BIM which will improve the efficiency of the engineering planning and design.Cloud-based platform will improve the ability for analysis and design audit, efficiency for design production and better understanding of the project as client and building owners can also evaluate the proposed design and modifications at different places and yet able to access project information through the cloud platform.

Drone Technology

Site Survey – the usage of drone in construction site surveying has expedite the ground survey process as the tedious ground survey can expedite the site mapping, provide ground contouring survey as well as drone overview image detailing.

Construction Site Monitoring

The use of drone in project and site monitoring has offer numerous advantages for construction applications (e.g. site mapping and inspection, reporting, client updates and project monitoring.) To illustrate, drones can reduce the need for engineers to visit sites, while at the same time increase the frequency of location checking.

Industrialised Building System

IBS is a technique of construction where by components are manufactured in a controlled environment, either at site or off site, placed and assembled into construction works The benefits of using IBS are high-quality products and minimum waste, due to a factory work environment that is easier to control; faster completion, due to the introduction

of prefabricated components to replace onsite fabrication.

The usage of IBS technology will results in a safer, cleaner and more organized site, due to the reduction of construction waste, site workers and prefabricated construction materials. IBS will also reduce the dependency of the foreign workers at construction site.

The construction of the China Wuhan-HuaShenShan Hospital that was completed in 10 days is an excellent example of the IBS or Modular Construction Technology.

Green Building Construction

A green building inherently has a low carbon footprint, reduces environmental impact and enhances the indoor environment, which improves the social well-being of the occupants. In other words, it is a quality building with higher standards that will perform better over its life cycle.

The Green Building Index (GBI) and GreenRE are two of Malaysia's industry recognised green rating tool for buildings to promote sustainability in the built environment.

Major Challenges by Construction Industries in Moving Towards Industry 4.0

They include lack of awareness on the concept of Industry 4.0 and its benefits; no clear comprehensive policy and coordination on Industry 4.0 in Malaysia; lack of targeted incentives to incentivise more companies to move to Industry 4.0; Mismatch skillsets and lack of right talent/human capital; lack of awareness on the concept of Industry 4.0 and its benefits; the industry awareness of the concept of Industry 4.0 particularly for the Construction 4.0 technology. Generally there is still a misperception that the adoption of new construction technologies will have cost implications. However, the improvement in efficiency and productivity as well as manpower reduction and time saving will eventually add value and improve the construction projects.

No Clear Comprehensive Policy and Coordination on Industry 4.0 in Malaysia

The government national policy on Industry 4.0 (Industry4WRD) focuses only on the manufacturing sector.

There is an urgent need for the government to formulate a clear roadmap and national policy to provide a clear direction for construction and building industry players and streamline future programmes related to IR 4.0, in particular, the construction technology.

The formulation of the Construction Industry 4.0 Technology Policy should include all the relevant stakeholders such as Malaysia Board of Technology (MBOT), Board of Engineers, Malaysia (BEM), Construction Industry Development Board (CIDB) as well as professional bodies such as Technological Association Malaysia (TAM), The Institution of Engineers Malaysia (IEM), Malaysia Institute of Architects (PAM) and Master Builders Association Malaysia (MBAM).

Lack of Targeted Incentives to Incentivise More Companies to Move to Industry 4.0

The government can facilitate the transition and migration to Construction Industry 4.0 Technology by provide the comprehensive programme to help construction industry to assess their capabilities and readiness to adopt Industry 4.0 technologies and processes.

The government should also provide funding and inceptive towards for the adoption of new Construction Industry 4.0 Technology such as BIM, IBS and Green Building Technology.

Mismatch Skillsets and Lack of Right Talent/Human Capital

There is currently a mismatch of skillsets for the players and construction workforce including the professional (engineers, architect and quantities surveyors) to embark the new Construction Industry 4.0 Technology).

This is where the professional bodies such as The Institution of Engineers Malaysia (IEM), Technological Association Malaysia (TAM), Master Builders Association Malaysia (MBAM), can play a role to facilitate and provide training to enhance the knowledge of the construction workforce towards the adoption of the Construction Industry 4.0 Technology.

Training, courses, seminar and conferences related to these new technologies such as BIM Manager Training and Certification, IBS and Green Building Rating training can be conducted.

Overall, construction industry players must thoroughly consider the evolving needs of the industry in end-to-end project management to draw on the Construction Industry 4.0 emerging technologies.

The only way to achieve this is to embrace technology and productivity-enhancing innovations to improve decision making and work procedures.

The risk of not adopting to new Construction Industry 4.0 Technology, is the construction player who do not adopt will face their Kodak or Nokia moment, where they suddenly find that their processes are no longer needed and a competitor has redefined the product and the industry.

Source: www.malaymail.com

Huawei OceanStor Distributed Storage

Leading Big Data Innovations in the 5G and AI Era

In the new era of 5G and AI, information collection became ubiquitous and data has been generated at an unprecedented pace. Thus, more and more industries are adopting big data technologies to unleash the full power of data. For example, to streamline operations and to make more accurate investment decisions, operators deployed big data infrastructures to carry out operational analytics. In the financial industry, with the help of big data analytics, institutions can respond to customer needs more effectively with personalised recommendations and precision marketing. Big data technologies have also been used by governments across the globe to optimise city administration, saving tax payers billions of dollars.

The Challenges of Conventional Big Data Architectures in The New Era

These new systems and novel ways to explore data have already created tremendous value for customers. However, as business grows and new use cases are discovered daily, the previous generation of architecture needs to evolve as well. Thus, new requirements are proposed and there are new challenges to be solved by system designers.

Through years of evolution, many operators have built industry-leading big data systems, including operational analytics, network optimisation and planning, CDRs, and log retention. As time goes by, many IT organisations have begun to observe inconveniences or hit roadblocks, such as data silos, inflexible expansion, and low disk utilisation ratio.

Many of the challenges can be traced back to the conventional Hadoop architecture, which has a tightly coupled storage-compute relationship. The main drawbacks are:

- Many big data vendors require dedicated HDFS clusters for their subsystems. This means that each big data subsystem (often by a single vendor) can only connect to its own HDFS. Different subsystems from the same vendor must co-locate and be deployed on the same nodes, thereby forming a closed architecture and data silos.
- Computing and storage resources must be expanded at the same time. However, it is difficult to predict computing and storage usage ahead of time, and resource usage growth may be different for computing and storage. As a result, if computing and storage resources are expanded at the same pace, many computing or storage resources may be wasted.
- Disk utilisation ratio is low. Currently, open source HDFS implementations mainly use the traditional three-replica technology to store data, which translates to less than 33 per cent disk utilisation ratio. This low ratio means more physical drives are required, thereby increasing the overall storage cost.

The storage industry is seeking new ways to solve these problems, and the decoupled storage-compute architecture is a very promising solution.

OceanStor Distributed Storage Decouples Compute and Storage

Huawei has long been promoting the applications of big data. Globally, it ranked third in terms of code contribution to the Hadoop community and first among all IT device vendors. In 2019, Huawei launched its Decoupled Storage-Compute Big Data Solution powered by OceanStor distributed storage, to lead big data innovations in the cloud and AI era.

The OceanStor D series next-generation intelligent distributed storage sits at the core of this new solution. It provides remote HDFS interfaces to replace local HDFS storage in Hadoop. Compute nodes and storage nodes can form resource pools separately, as shown in the following figure. The following four enhancements show the decoupled storage-compute solution improves the efficiency and reduce costs in multiple areas:

1. Independent expansion of storage and computing resources

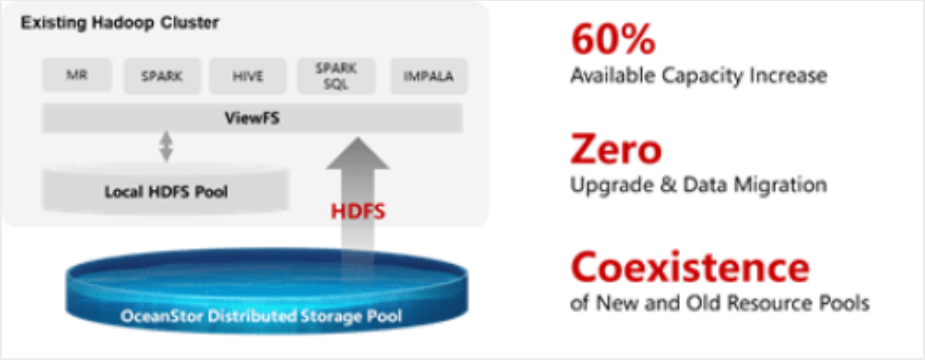
The decoupled storage-compute architecture allows storage and computing resource expansion at their own pace. In other words, computing and storage resources can be expanded as needed independently. No resources will be wasted after expansion like in the coupled scheme.

2. Independent cloud resource pools for improved resource utilisation and data sharing efficiency

In the decoupled storage-compute big data solution, the computing and storage resources can be burst to the cloud separately. This enables computing and storage resources to be effectively utilised, and one set of big data storage can support multiple applications simultaneously. Fig. 2 shows a use case in which siloed data were combined into a big storage pool, and the pool is used by many applications including cloud applications.

3. Elastic EC algorithm for huge storage utilisation boost

The OceanStor distributed storage leverages the EC algorithm for data protection. The D series storage platform supports a maximum of 22+2 EC, improving storage utilisation from 33 per cent to 91 per cent, while providing more enterprise-grade features, such as automatic tiering of hot, warm, and cold data. Compared to traditional HDFS, this feature can bring in huge savings for D series users. Fig. 3 illustrates the difference between 3-replica and 22+2 EC. Besides 22+2, a spectrum of EC selections is available to provide users a trade-off between cost and performance.



4. Native HDFS interface, no plug-in required, and fully compatible with mainstream big data platforms

OceanStor distributed storage provides native HDFS interfaces and is fully compatible with mainstream big data platforms, such as FusionInsight, Cloudera, Hortonworks, and Transwarp. If a customer already has an existing coupled storage-compute environment, the D series can be added alongside existing storage. There is no service disruption to the existing environment during the process.

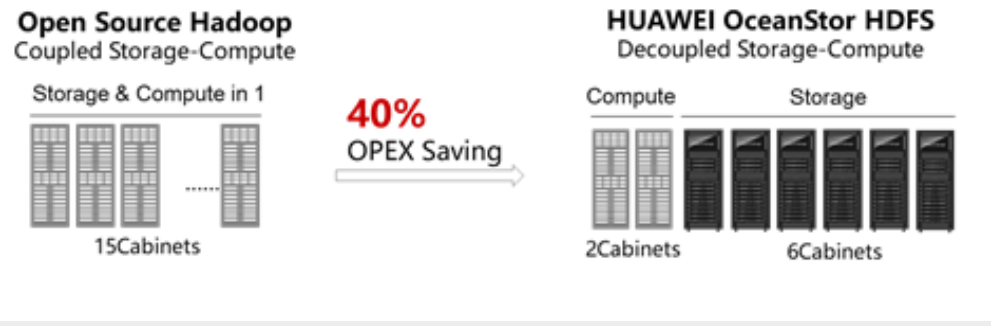
Case Study: China Telecom Combined Decoupled Storage-Compute and Local HDFS Solutions for Higher Effective Capacity

China Telecom Hebei adopted HUAWEI OceanStor decoupled storage-compute solution for capacity expansion of its operational analytics platform. Disk utilisation was improved from 33 per cent to 91 per cent with Elastic EC, which led to a more than 60 per cent increase in effective capacity (aka usable capacity). With ViewFS, distributed storage and local HDFS together can achieve balanced reading and writing of data. There is no need to upgrade the existing big data platform version or migrate the existing data.

Case Study: A Singapore ISP Adopted Decoupled Storage-Compute Architecture to Replace Open Source Hadoop Software

The customer built an vOpen Source Hadoop based environment to save the R&D log data. One of the key requirements from the customer is to improve the data density as much as possible, so that the operation cost can be minimised.

After several rounds of evaluation, they chose Huawei OceanStor distributed storage instead of open source HDFS software, thus promoted disk utilisation from 66 per cent to 91 per cent. As a result, the customers increased the usable capacity (aka available capacity) of a single cabinet by 140 per cent, reduced the number of cabinets from 15 to 8, and achieved a 40per cent OPEX saving.



Source: www.mobileworldlive.com

URC Adds Control Modules for

August Locks, Home Connect, and Symetrix

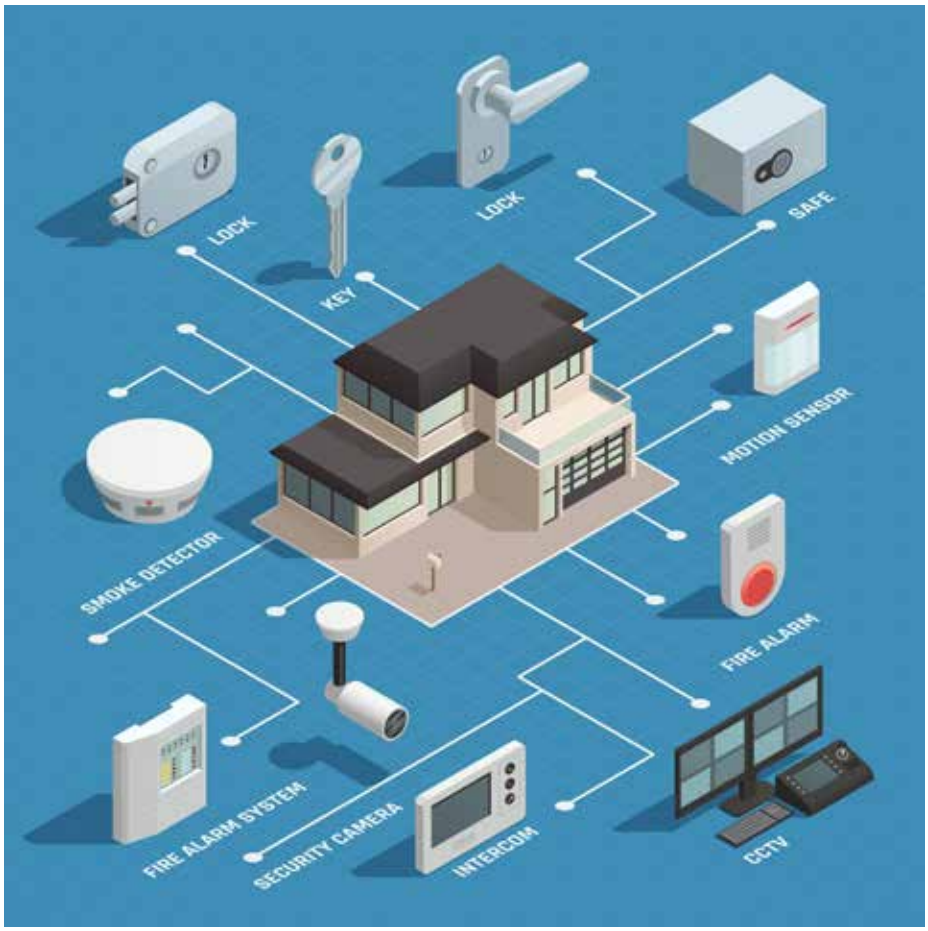
URC has launched a two-way IP module for integration of its Total Control 2.0 system with August Smart Lock and Smart Lock Pro door locks and Symetrix Radius NX, Prism, Solus, and Edge DSP models, Home Connect appliances with its Total Control system.

The August module, available at the end of February to authorized URC installers via URC's dealer portal, allows end users using any URC Total Control touch screen or the Total Control smartphone application to control and view status of compatible August Smart Locks door lock models via the URC Total Control System.

The Symetrix module, avail able now to authorized URC installers via URC's dealer portal, allows commercial facilities managers using any URC Total Control touch screen or the Total Control smartphone application to control independent channels or zones of audio routed thru compatible Symetrix DSP models.

With the Home Connect module, end users can enjoy automated morning routines – for example their coffee, brewed to their satisfaction by Home Connect appliances, can be ready upon their wake-up alarm going off thanks to seamless integration of URC's smart automation technology with Home Connect.

Compatible Home Connect enabled coffee machines are available from Bosch, Thermador, Siemens, Neff, and Gaggenau brands. Support for additional Home Connect appliances will be added during the year.



"End users with URC's Total Control smart automation and control system can now automatically or manually brew the coffee of their choice from any URC Total Control interface or even via voice commands in English or German via URC's TRC-1480 handheld remote with voice control or any Amazon Alexa device connected to URC's Total Control system," commented Lars Granoe, URC's vice president of product management. "And, with the URC's Total Control system a dealer can even automate their normal routine thru this integration with Home Connect, so end users can enjoy coffee at regular times during the day. This integration takes automation to a completely new level."

Regarding August locks, Granoe added, "We are continuing to expand our ecosystem of compatible products with our Total Control smart automation system, and August Locks provide an easy and elegant solution for custom installers, since the product attaches to the existing deadbolt, so consumers don't have to change their keys.

This two-way module allows homeowners using a URC Total Control touch screen or the URC smartphone app the ability to lock, unlock, and view the

status of any and all doors in their home that have an August Smart lock or August Smart Lock Pro installed from any URC Total Control interface.

The addition of new models from Symetrix to URC's portfolio of two-way modules expands the commercial applications – from bars and restaurants, houses of worship, meeting rooms, to larger venues such as whole resort facilities, banquet halls and stadiums.

"Symetrix is world-renown for delivering high performance audio DSP hardware and software, making it a great fit for our URC Total Control line." URC launched an integration module with the Symetrix Zone Mix 761 last year," Granoe said.

Using URC's Accelerator 2.0 programming software, dealers will be able to customize the landing page for each device with a modular button layout, combine features and functions on one page of the user interface, add live camera feed and favorite channels pop up window for homeowners for ease of use. Custom Device Layouts will be available beginning of March with a live update to URC's Accelerator 2.0 software to authorized URC installers.

URC also will be adding support for the German language to URC's TRC-1480 whole-house remote with voice control. Launched in Q3 2019. The TRC-1480 is the latest addition to URC's award-winning Total Control 2.0 smart automation & control system, and features push-to-talk voice control, a vibrant 2.4-inch touchscreen LCD for display of two-way meta data, hard buttons and an ergonomic design. German language support will be available in March 2020.

Source: restechtoday.com

FANUC Malaysia Opening Ceremony

FANUC Malaysia organized a grand opening ceremony for their new office in Klang on the 13th of February 2020. Officiated by Mr. Ogusu San, the ceremony was attended by various respectable figures in the field industry.

FANUC Malaysia was founded in April 1994 with 4 staff. In November 2001, their office moved to Glenmarie in Shah Alam. During that time, the number of employees was 19. After 25 years, they decided to build a new building in Klang and started the operation in November 2019. The total number of employees is 47. During these 25 years, around 30,000 of FANUC products were installed in Malaysia.

The products included FANUC CNC, FANUC Robot, FANUC Robodrill, FANUC Roboshot, and FANUC Robocut. FANUC has been supporting the 30,000 of FANUC products from the Glenmarie office.

The newly built office consists of a bigger warehouse to keep more spare parts. It is as the Glenmarie office was not big enough and questions had arisen on how FANUC was able to store and carry out their business. This newly built office in Klang has a bigger showroom with more robots and robomachines to provide better training. They are now confident to provide better support and service to their clients.

The Managing Director of FANUC Mechatronics (Malaysia) Sdn. Bhd., Mr. Kota Ogusu highlighted that the completion of this new office is just the beginning for them. Since he joined FANUC Malaysia in June 2016, he has been working on this new office project and it is finally completed after three and a half years. However, his job is not yet completed and Mr. Kota Ogusu shared some of their targets which are:

- They'll increase the number of spare parts to expand the immediate delivery ratio in the warehouse.
- They'll start the robot system engineering step by step and do more test cuts for the customers, using Robodrills in the new showroom.
- They'll set up their service branches in Johor Bahru and Penang ,

To achieve these goals, FANUC Malaysia promises to keep on moving and will keep on making the best efforts. FANUC Malaysia will try to keep on contributing to all clients' further growth and success.

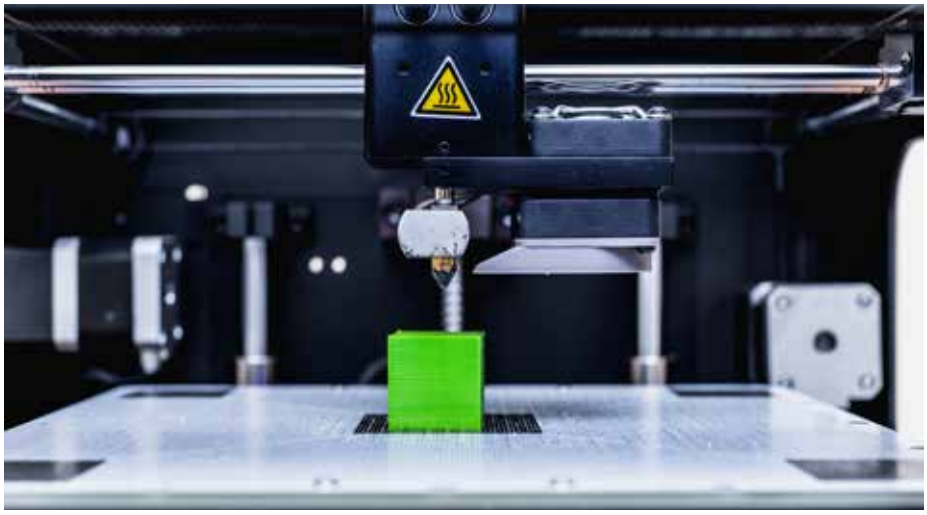
Source: www.asiaautomate.com

Different Ways 3D Printing is Being Used Today

It wasn't too long ago that 3D printing became the big thing in the news.

Stories have been cropping up showcasing the immense capabilities of this relatively new technology.

All industries seem to be taking full advantage of 3D printing in one way, shape, or form. The medical field, artistic industries, and other technologically driven corporations have found the ability to print their needed designs on demand to be an invaluable tool. As it stands, there are so many ways that 3D printing is being utilized in today's modern workforce. New ways to use the technology is being discovered all the time to better improve the way our industries function for society.



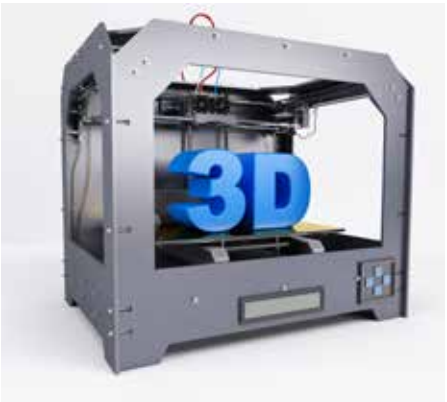
A good example of an almost superhuman 3D printing ability is the printing of human skin to be used in skin grafting surgeries. Scientists have found many brilliant medical discoveries using the most up-to-date equipment, and 3D printing has begun to make a name for itself. 3D printers print "skin" that many burn patients have reaped incredible benefits from. Those who have experienced major burns or other distortions can now receive grafts in a timely manner and with as many grafts as are needed, so there is no possibility of running into a shortage when skin grafts are needed on short notice. What this proves to us as a society is that this relatively new technology may be capable of so much more in terms of medical development. Modern day prosthetics are becoming more affordable due to this technology.

Aside from skin grafting, dentists are also able to use 3D printing to capture accurate imaging of the insides of their patient's mouths. This cuts down the need to perform imaging from the outside of the mouth through (albeit minimal) exposure to radiation that some imaging techniques still give off. It also provides a much more accurate representation of tooth damage, so that dentists are kept better informed.

As amazing as skin grafting and imaging teeth may be, 3D printing technology has also shown major promise in the area of part printing for planes. Believe it or not but plane parts have actually been successfully printed and used in finishing off the interiors of working planes. While it may not be perfected enough to safely use on parts outside of the plane, by printing the interiors, this saves plane manufacturers millions of dollars that would have otherwise been used to adorn the inside of their planes.

Another area of interest that has gained a lot from 3D modelling would be the art industries. Cake decorating has created edible 3D models that can be bought and consumed safely by cooks and customers alike. There are 3D printers that are designed to build only edible chocolate treats for those who enjoy creating more intricate treats for people to purchase. Along with cake decor, even working musical instruments have been made using 3D printing technology. Back in 2014, Lund University in Sweden had a whole band play with nothing but 3D printed instruments that worked just as well as hand crafted instruments when played. What this means is that musical instruments may become more affordable for the average consumer to purchase and learn to play at home.

Rapid advances have been made in many industries that utilize the technology using the proper 3D modelling programs. As it stands, it is only a matter of time before more industries start to reap the benefits presented in planning, designing, and implementing 3D models using 3D printing technology.



Source: www.technative.io

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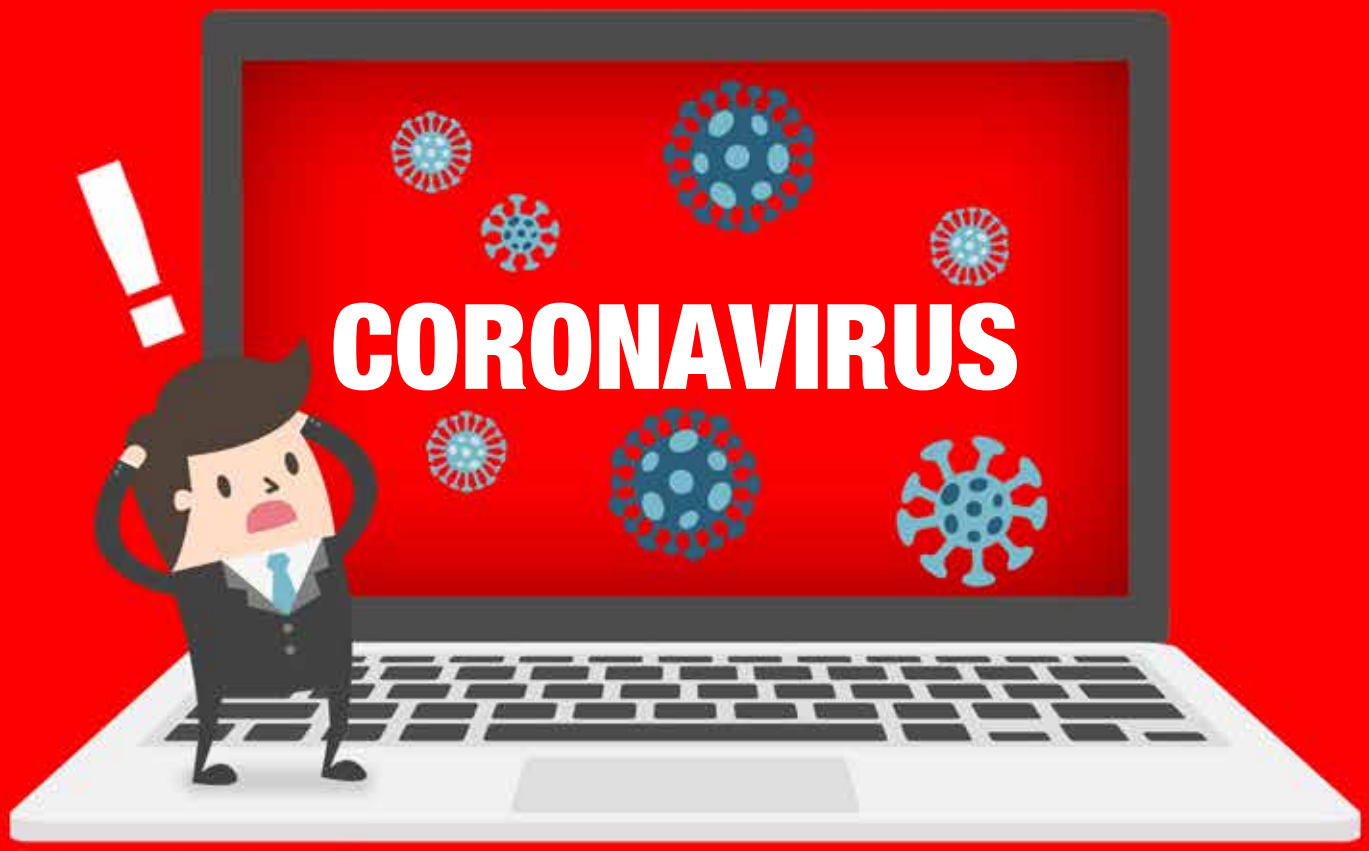

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