POWERING UP ON AI
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Powering up on AI

Adoption is growing, but Thailand needs a strategy for how to implement it, writes **Suchit Leesa-Nguansuk**

Adoption of artificial intelligence (AI) technology in Thailand is expected to scale up this year, having a greater impact on business and society, thanks to powerful machine learning, predictive ability and automation.

But the country needs to have an urgent AI strategy to prepare the future workforce and build a "core engine" technology in a sustainable way, said Panachit Kittipanya-ngam, president of the Thailand Tech Startup Association.

He said AI will affect business with the arrival of 5G infrastructure as more data is input and processed, bridging the online and offline worlds.

Venture capital firms prefer to invest in AI startups, Mr Panachit said. In Asia, investment in AI increased from US$6 billion in 2016 to $12 billion in 2017.

Analysts project AI investment globally to reach $36.8 billion in 2025, with 60% related to big data and the rest dealing with image recognition.

AI plays a bigger role because it helps increase productivity in business, improves cost management and creates opportunities, Mr Panachit said.

The challenge for Thailand will be that most workers are low- or mid-level employees, meaning several of them will be replaced by automation, especially in the sectors of healthcare, banking and retail, he said.

For high-level employees and senior management, new jobs can be found in the field of data scientists.

"It is a pity that Thailand still focuses on basic research and uses available third-party tools, such as chatbots, marketing and dialogue systems, but lacks the advanced research in AI on core visions of healthcare, agriculture, manufacturing, education, law, insurance and various industries," Mr Panachit said.

USING AI FOR DIFFERENTIATION

Chai Wutiwiwatchai, director of the National Electronics and Computer Technology Center (Nectec), said the private sector has been increasing its investment in AI for a few years.
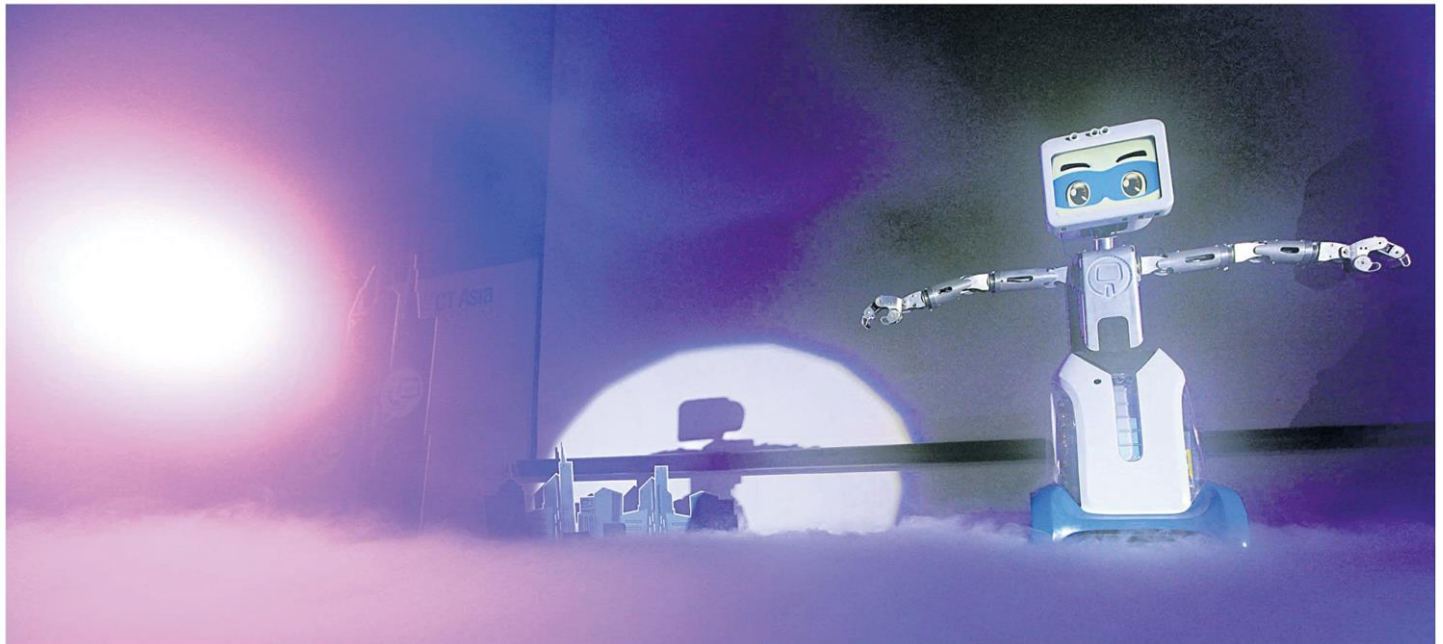
Firms want to collect data to determine users' real experiences, he said.

AI does not serve every business problem, so users need to ask if it is the right tool for the job, Mr Chai said.

Businesses should start with a proof of concept, then use cloud-based infrastructure before fully embracing a large-scale roll-out, he said.

To use AI practically, businesses need to

CT Asia Robotics' Dinsor 2 robot, developed by Thai engineers. NATTHITI AMPRIWAN

have a core AI engine that enables them to differentiate from rivals, Mr Chai said.

Nectec has been using AI and data analytics to serve the country. For example, the Thai People Map and Analytic Platform (TPMAP) applies AI to reduce poverty in the country and practice preventive maintenance of dams.

Nectec plans to initiate its own R&D projects, such as National Language Processing to enable the business sector to develop its own AI usage model.

AI-FIRST STRATEGY

Dhanawat Suthumpun, managing director of Microsoft Thailand, said the country should adopt an AI-first strategy, making it more accessible and affordable for sustainable growth.

AI and data intelligence play a crucial role for digital transformation in organisations because it can leverage use of data loops from engaged customers, optimise operations to reduce cost, stay ahead of rivals, empower employees and run product transformations, he said.

In 2018, some 20 Thai enterprises were early adopters of AI, in particular conglomerates, banks, telecom operators and retail. All were driven by a need to differentiate their products and services, Mr Dhanawat said.

Those enterprises are investing to build AI teams — data scientists and data engineers to develop unique products and service capabilities — while adopting third-party AI technology to integrate with their products and services.

The banking sector plans to move to facial recognition for electronic know-your-customer regulations, as well as blockchain and machine learning for fraud detection.

The oil and gas industry uses AI for road safety to detect drivers' dangerous behaviour, while the retail business uses it for loyalty programmes and e-commerce.

"Microsoft has no intention to use AI to replace humans, but we see that human ingenuity is amplified by intelligent technology," Mr Dhanawat said.

Microsoft predicts that mid-sized companies are the next wave of AI adopters, using the technology to integrate their businesses.

A Microsoft-IDC study predicts that 95% of jobs in Thailand will be transformed over the next three years. While 30% of jobs will be outsourced, automated or simply made obsolete, a roughly equal number of new roles created by shifts in the digital landscape will emerge to provide ample opportunities in the workforce. A further 35% of the workforce can

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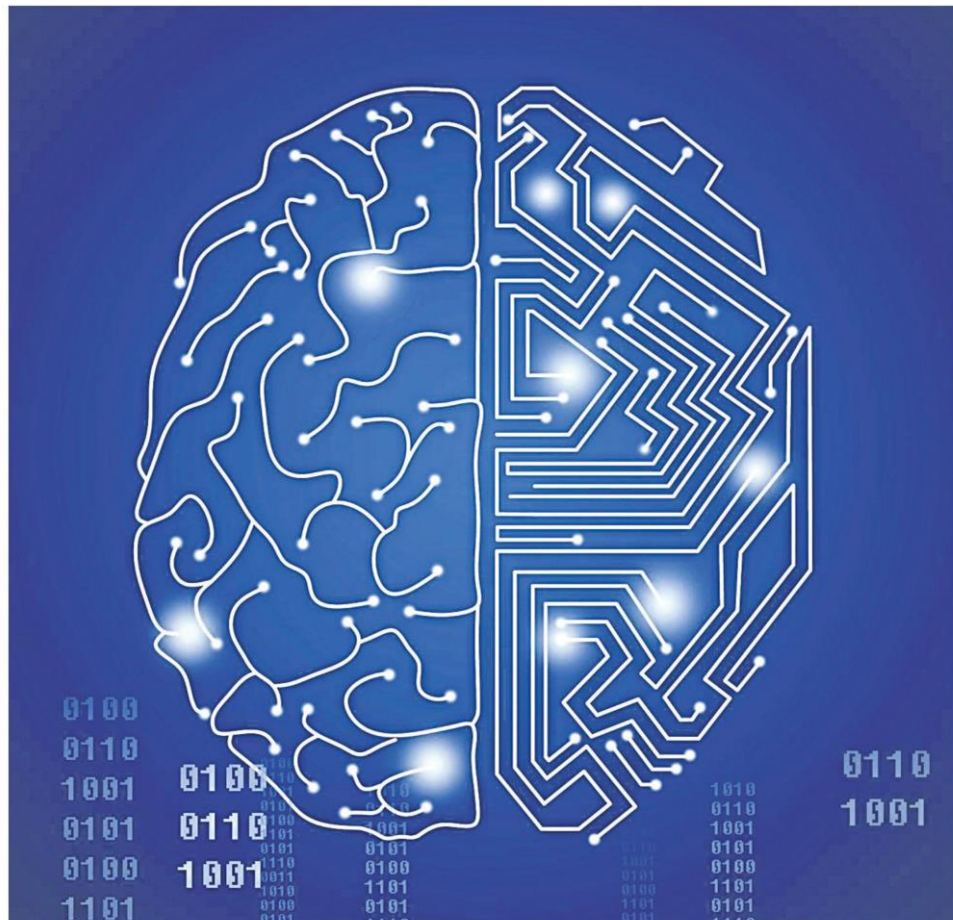>
> **DHANAWAT SUTHUMPUN**
> Managing director,
> Microsoft Thailand

Quantum technology could give artificial intelligence an assist.

be retained, according to the survey.

FUTURE TRENDS OF AI

Patama Chantaruck, vice-president for Indochina expansion and managing director of IBM Thailand, said her company expects causal modelling to emerge as a central feature of the AI world this year.

Most AI methods are fundamentally based on correlations, without a deep understanding of causality, meaning they do not have the ability to make judgements, unlike humans, Ms Patama said.

Emerging causal inference methods enable data structures to efficiently select interventions to test putative causal relationships, and to make better decisions by leveraging knowledge of causal structure, she said.

TRUSTED AI

A number of organisations responded to recent data breaches and consumer privacy concerns by establishing ethics advisory boards. IBM sees an increase in research investment in the "pillars of trust" covering algorithmic fairness, explanatory efficacy of the result, robustness, transparency and increased efforts in deploying AI for social good, Ms Patama said.

In 2019, these efforts become central to how companies build, train and deploy AI technologies, according to IBM.

"We expect to see special focus on transferring advanced research in trusted AI into real products and platforms, along with an emphasis on encouraging diversity and inclusion on technical teams to ensure many voices and perspectives guide technological progress," Ms Patama said.

She said quantum technology could give AI an assist. As the complexity of AI problems grows, quantum computing — which thousands of organisations are already accessing via IBM's cloud quantum computing services — could potentially change how businesses approach AI computational tasks.

In 2019, there will be accelerated traction in quantum experimentation and research, and new research on how quantum computing can potentially play a role in training and running AI models, Ms Patama said.

A core element of quantum algorithms is the exploitation of exponentially large quantum state spaces through controllable entanglement and interference, she said.