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UTP paving way in accelerating technology commercialisation

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Mohd Fadzil said that the IAS has amped up efforts to advance technology readiness levels.

DIGITAL transformation is the hot topic on everyone's lips at the moment, as the fourth Industrial Revolution (IR4.0) has paved the way to a more connected, digitised and automated world.

In this new digitally-transformed world, organisations and institutions that make use of these advancements in technology are sure to be a step ahead, just like Universiti Teknologi Petronas (UTP).

The university – in particular its Institute of Autonomous Systems (IAS) – has seen its revenue quadruple in recent years, thanks to digitalisation and the adoption of IR 4.0 technologies across various sectors.

IAS Director Associate Prof Dr Mohd Fadzil Hassan said that the institute has amped up efforts to advance technology readiness levels from mere concepts to more

mature stages, such as proof of concept, pre-commercialisation and commercialisation.

Beginning with small-scale consulting work, the institute has since introduced flagship solutions and projects that are deployed in Petronas and across the oil and gas industry. It has also expanded its services and solutions to other industries, such as telecommunications and manufacturing, as well as beyond borders to the Philippines and Indonesia.

UTP clinched a contract with TH to develop a customised e-learning management

platform for prospective haj pilgrims.

The institute also achieved another milestone when it clinched a contract with Lembaga Tabung Haji (TH) to develop a customised e-learning management platform for prospective haj pilgrims.

As more industries and organisations prioritise and embrace digital transformation to improve efficiencies, optimise costs and deliver better decision making, the university, which is celebrating its silver jubilee this year, believes it is in a unique position to capitalise on this shift.

"We are different from other digital solutions providers because we focus on customised solutions to meet industry needs and requirements.

"We sit with the client, understand their pain points and that of the industry. Based on our understanding and their expectations, we come up with solutions that are not available off the shelf.

"With Tabung Haji for example, all prospective pilgrims regardless of age and digital literacy levels can easily access and use the learning materials and modules and fulfil Tabung Haji's training objectives," said Mohd Fadzil.

The IAS – the largest research institute at UTP – houses seven research centres with 83 affiliated academic staff that encompass the whole industry value chain.

This includes aspects such as materials and integration between hardware and software to computing expertise in IR4.0 technologies such as the Internet of Things, big data analytics, cloud computing, artificial intelligence, augmented reality (AR) and virtual reality (VR).

UTP has also partnered with Pois Sdn Bhd on the development of AR and VR

applications at Taman Herba Gopeng in Perak.

"We look at the whole value chain to come up with solutions to improve processes, optimise resources and bring about improvements in costs and efficiencies.

"With the business development team, we identify opportunities where we can capitalise on our technical know-how, especially in the context of digitalisation and apply it to industry," he said.

Mohd Fadzil also shared that the Covid-19 pandemic turned out to be a "blessing in disguise" as it sped up the adoption of digitalisation solutions, which was ideal for proactive institutions like UTP that capitalised on the available opportunities.

A suite of solutions

From the breakthrough of its first project, Poseidon – a predictive analytics tool deployed commercially for use in monitoring the health status and sustainability of offshore structures – the institute has also embarked on various other solutions, as Mohd Fadzil believes these solutions are applicable to other industry sectors.

"With Poseidon for example, it can also be used in sectors with a grid system, such as telecommunications to measure the health of the tower structures located in remote areas," he said.

UTP met with the Royal Malaysia Police (PDRM) at Maktab PDRM Kuala Lumpur

for upskilling and reskilling initiative of PDRM workforces.

These other solutions include Digitalising Operation and Maintenance via Artificial Intelligence, Intelligent Corrosion Rate Predictive Analytics and Corrosion Predictive Analytics.

Digital Science, Technology, Engineering and Mathematics (STEM) is another area that the IAS is exploring, specifically to develop digital applications that can attract more students to these subjects.

"We're looking at using the integrated and blended approach to make learning fun, through gamification techniques and active learning," he said.

He added that these solutions can benefit schools, teachers and parents, as well as non-government organisations that are proponents of STEM.

Riding the momentum
Mohd Fadzil also said that he believes solutions based on big data analytics such as AR, VR and blockchain will continue to be priority areas, especially because many industries are still playing catch-up to digital transformation initiatives.

"Prior to the pandemic, the effort to incorporate AR and VR for training has been slow, but during the pandemic they saw these as cost-effective solutions and I think the momentum will continue."

He shared that researchers and academicians will also benefit from digitalisation as they are now able to integrate technology to ensure learning materials are easily accessible, while offering students a better understanding of subjects.

Having built its reputation and the trust of partners beyond Petronas and the oil and gas industry over the years, Mohd Fadzil believes that there are opportunities abroad, especially as some of its projects like the halal blockchain project in the Philippines has piqued the interest of partners in Indonesia.

"It's definitely an exciting time in the institute, particularly as the research progresses to more mature levels of readiness."

For more information, visit www.utp.edu.my