Research

UMPSA researcher Ts. Dr. Ahmad Taufik develops DeciXion, a smart solution to help organisations make strategic decisions systematically

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PEKAN, 8 August 2025 – Observing the difficulties faced by many organisations in making strategic decisions, a research led by a lecturer from the Faculty of Industrial Management (FPI), Universiti Malaysia Pahang Al-Sultan Abdullah (UMPSA), Ts. Dr. Ahmad Taufik Nursal has produced DeciXion, a web-based Decision Support System (DSS) developed using the Fuzzy TOPSIS analysis method.

This research also received collaboration from a group of lecturers from Universiti Malaysia Perlis (UniMAP), Dr. Tisya Farida Abdul Halim, a lecturer from Universiti Utara Malaysia (UUM), Professor Sr. Dr. Mohd Nasrun Mohd Nawi, FPI lecturers Dr. Khairunnisa Abdul Aziz, Dr. Nurul Ashykin Abd Aziz, Ts. Dr. Noor Akma Abu Bakar, and Dr. Zarith Sufia Azlan.

According to Ts. Dr. Ahmad Taufik, among the difficulties faced by many organisations are too many alternatives to choose from, the existence of various criteria that need to be considered simultaneously, which sometimes conflict, as well as the use of subjective data that is difficult to assess accurately.

“More worryingly, this selection process is still largely done manually or relies on intuition or experience.

“These challenges inspired the development of DeciXion, a more systematic, transparent, and data-driven decision support system,” he said.

This research began in 2023 and is expected to be fully completed in 2025, under the Fundamental Research Grant Scheme (FRGS) titled ‘A Hybrid Multi-Attribute Decision Making and Sentiment Analysis Method for Residential Housing Project Purchases’.

He added that DeciXion is an additional output derived from this research.

“Through the Fuzzy TOPSIS method, DeciXion allows users to break down complex problems into smaller components, assess the importance of criteria and alternatives more accurately, and combine quantitative data and expert opinions in a single analysis system.

“This system makes it easier for users to enter data, set criteria, and subsequently generate decision reports automatically.

“This is what makes the process faster, more evidence-based, and transparent,” he said.

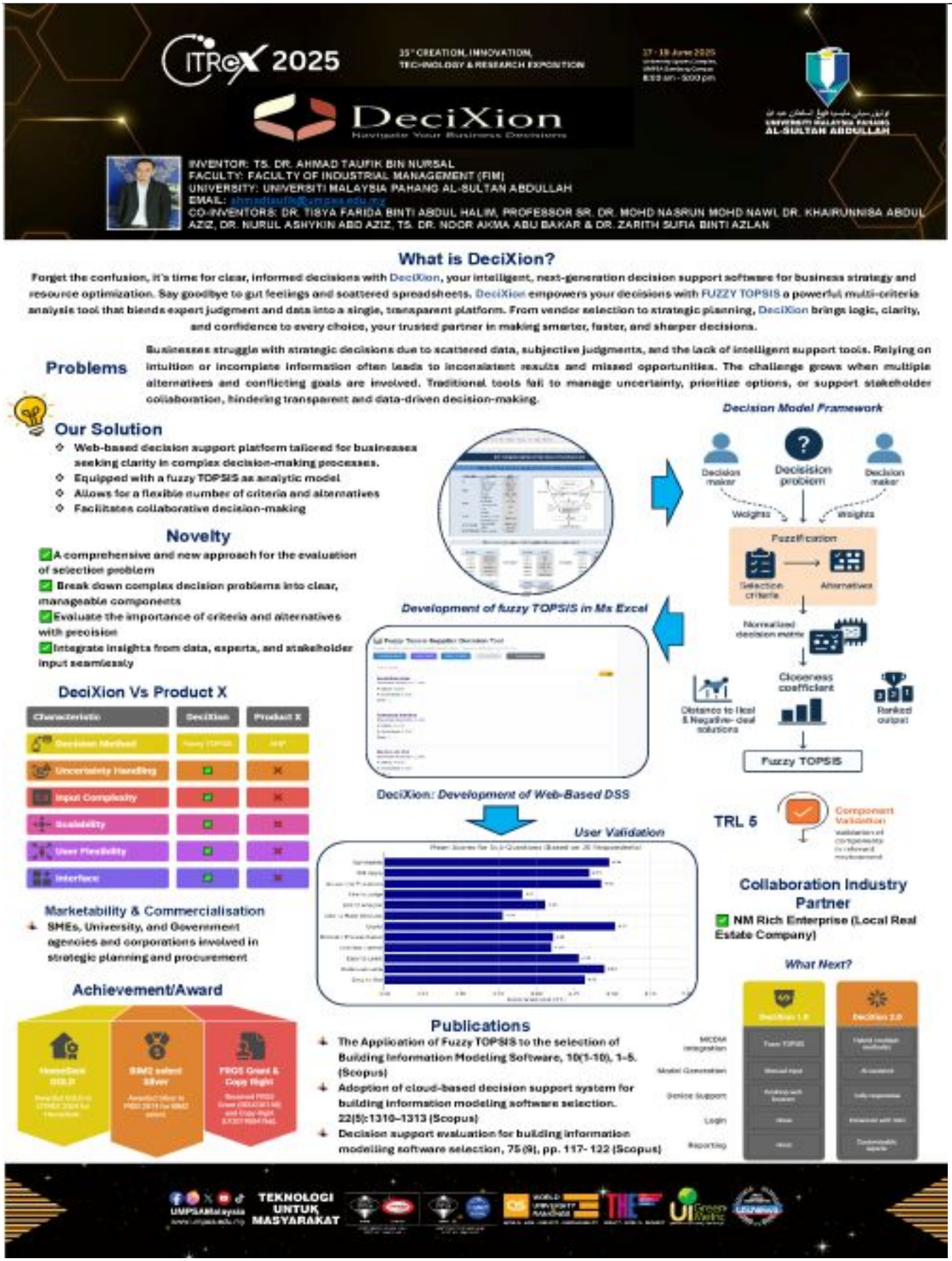
In addition, he stated that the main objective of developing DeciXion is to help organisations replace subjective decision-making approaches with more systematic, analysis-based ones.

“It can solve various issues in the industry, such as vendor selection, resource optimisation, technology selection, and strategic planning.

“This way, organisations can reduce the risk of inconsistent decisions and increase confidence in the decisions made.

“This project also received industry collaboration through NM Rich Enterprise, a local real estate company,” he said.

As a web-based system, the cost of using DeciXion depends on the scale of usage, additional modules, and the need for integration with existing systems.



He further added that his research team also plans to improve the user interface to be more user-friendly, strengthen integration with big data and predictive analytics, and expand its use to the government, education, health, and real estate sectors.

“DeciXion also has the potential to be widely commercialised as a local platform capable of

competing internationally.

“Not only for industrial use, DeciXion also serves to assist the academic community, especially postgraduate students in the field of Operations Research (OR) and Multi-Criteria Decision Making (MCDM).

“It provides a practical platform for testing decision models, facilitates thesis writing and journal publication, and saves time in building analysis models,” he said.

Before DeciXion was developed as a web-based system, the research team had produced an early version in the form of Fuzzy TOPSIS using Microsoft Excel.

Several of their studies have also been published in Scopus-indexed journals related to the selection of Building Information Modelling (BIM) software.

In terms of recognition, the combination of the DeciXion system with the sentiment analysis approach as a decision model in addressing home ownership issues successfully won the Management Special Award as well as a Gold Medal at the Creation, Innovation, Technology and Research Exposition (CITREX) 2024.

This recognition was obtained from the early version of the system developed using the Microsoft Excel platform, before it evolved into a more comprehensive and technology-based system.

Meanwhile, at CITREX 2025, DeciXion won the Strategic Business Management Innovation Award.

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