

# VIEWPOINTS



# Technology Management Curriculum Foresight from the Perspective of UTHM



**Prof. Ts Dr Alina Alina binti Shamsuddin**  
alina@uthm.edu.my



**Dr Wan Nurul Karimah binti Wan Ahmad**  
karimah@uthm.edu.my

Universiti Tun Hussein Onn Malaysia (UTHM), is a public university located in Batu Pahat, Johor, primarily focusing on Engineering and Technology. Foresight training and education at UTHM is provided to students of Bachelor of Technology Management at the Faculty of Technology Management and Business, in collaboration with MIGHT since 2013.

The industrial and work landscape has transformed tremendously in the last decades due to technological shifts and advances in societal and environmental scenarios. These changes demand a more versatile education system that can stay ahead of the technology curve and foresee the direction of the transformation to prepare for future possibilities and disruptions. The COVID-19 pandemic is a significant illustration of how the educational system has been disrupted. It brought attention to the need for planning in education since academicians had to swiftly adjust to the abrupt change to unconventional teaching and learning methods when learning activities were moved online.

Higher education institutions were forced to address the chasm between their infrastructure and academic staff readiness for online curriculum delivery with the need for effective learning and student assessment. On top of that, academicians were required to consider the social, economic, technological, and other implications that the pandemic has revealed as crucial for a resilient and compassionate education system that can produce highly creative, emotionally intelligent, and agile human capital suitable for the 21st-century workplace.

Foresight is a projection and insight into the state of the future. Competencies in using foresight tools and methodologies, for example, horizon scanning and scenario building, are required to shape or create the future. Studies from various disciplines, such as multimedia, accounting, and entrepreneurship, have shown positive impacts of integrating foresight into curriculum design. Reports on the delivery has shown that the use of foresight increased student engagement and immersion in learning, intellectual curiosity, creativity, communication skills, proactivity, imagination, mindfulness, and their positive attitude towards future potential. Furthermore, those who can think ahead tend to have more extraordinary abilities to reframe current challenges into future opportunities. This is a prerequisite skill that every graduate should equip themselves with to compete in the job market and survive in this turbulent world.

At UTHM, in hindsight, we now know the extent of our abilities (and the lack thereof) to adapt rapidly to changing teaching and learning needs. The most important revelation is that future learning systems and curriculums should be designed to embody foresight as a catalyst for nurturing 21st-century skills needed in today's volatile, complex, and ambiguous world and to prepare for possible future shifts.

The aspiration to produce resilient and adaptable graduates motivates us at the Department of Management and Technology to incorporate foresight in the Bachelor of Technology Management (BPA) with Honors curriculum that we offer at UTHM. The teaching and learning of foresight were initially provided to a select group of students through the final year Bachelor Project called the *Projek Sarjana Muda-MIGHT (PSM-MIGHT)*. This collaboration with MIGHT's myForesight® began in 2013 and constituted six credit hours of the project spread over two semesters. Every year, the myForesight® team trains the students and lecturers on foresight tools and methodologies while guiding and evaluating the students' projects. Throughout the ten years of the PSM-MIGHT collaboration, about 250 students have been trained to work on foresight projects related to future technological and societal needs in Malaysia, such as healthcare, mobility, future workplace, transportation, hospitality, and communication.

The tangible outcomes of the PSM-MIGHT collaboration can be seen in the compilation of the students' research (compiled into a series of 4 book chapters—titled Foresight Studies in Malaysia, published by UTHM—articles published in local and international proceedings and journals, and opportunities for students to present their findings at conferences and research exhibitions. In addition, the exposure and experience gained through the direct training and guidance by myForesight® experts have helped develop this collaboration's intangible outcomes, especially in shaping critical future thinking skills among students.

*“PSM-MIGHT provides a great platform for final year project students who aspire to learn more than just by participating in regular assignments and activities. The program helps to develop critical thinking and extend students' thoughts beyond their horizon.”*

PSM-MIGHT Graduate

Recently, the myForesight® team did a tracer study on four cohorts of PSM-MIGHT graduates. Interestingly, 78% of the graduates revealed that foresight training gave them an advantage and added value in gaining employment.

*“PSM-MIGHT equipped me with the essential skills and abilities to excel in my chosen career.”*

PSM-MIGHT Graduate

In addition, more than 80% of respondents reported that they found the foresight skills they had learned to be useful when applied to their current jobs. Students revealed that the project helped them develop learning skills such as critical thinking, creativity and communication, information and technology literacy skills, and life skills such as professionalism and work ethics, social responsibility, flexibility, and initiative.

*“In my opinion, this project is one of the great collaborations between UTHM and MIGHT. It taught us how to look into the future by researching through foresight study.”*

PSM-MIGHT Graduate

Moving into the next phase sees the potential of embedding the PSM-MIGHT modules into the BPA during the 2021 curriculum review. Realising the importance of foresight to Technology Management as a field and the impacts that the PSM-MIGHT collaboration has had on the graduates, a new course was introduced in the new BPA curriculum, namely, Foresight for Technology Management. Industry experts, including MIGHT members, and academicians, were nominated to review the curriculum.

One of the main focuses of the course is to shape future graduates' mind frame for future critical thinking, as well as to take advantage of the new opportunities in rapid technological progress to build a sustainable future. This opens opportunities to learn foresight skills—now not restricted to PSM-MIGHT participants but to all BPA students—and enhances the possibilities to use authentic assessment of learning in the course. This programme is unique to the Bachelor of Technology Management in Malaysia in terms of incorporating foresight as a core course and an integral part of a bachelor's degree programme. UTHM aspires for the PSM-MIGHT programme to be a stepping stone in developing more future-ready human capital that can conduct impactful foresight research—ultimately contributing to nation and society building.

*“PSM-MIGHT provides students with essential exposure as well as the necessary preparedness needed to face future employment”*

PSM-MIGHT Graduate