Journal of Information Systems Engineering and Management
2025, 10(52s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Enhancing Awareness of Intangible Technology Transfer in Malaysian Universities: Strategies and Best Practices

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ARTICLE INFO

Received: 14 Mar 2025

Revised: 19 May 2025

Accepted: 27 May 2025

ABSTRACT

This research investigates the essential issue of intangible technology transfer in Malaysian institutions, highlighting the need for increased awareness and planned implementation. Intangible technology transfer refers to the exchange of knowledge, skills, and inventions that do not take physical form yet are critical for maintaining a competitive advantage in the global market. This study outlines critical methods and best practices for fostering intangible technology transfer among academic institutions. Following a thorough analysis of current literature and case studies, we identify effective efforts that have facilitated information sharing and collaboration between universities and companies. Furthermore, we suggest a framework for building awareness initiatives that engage staff, students, and industry stakeholders, with the goal of creating a thriving innovation environment. The findings suggest that by prioritizing intangible technology transfer, Malaysian universities can significantly enhance their contribution to economic development, safe research and technological advancement.

Keywords: Intangible technology transfer, universities, safe research, innovations , internal compliance programme.

INTRODUCTION

In the rapidly evolving landscape of technology and innovation, the concept of intangible technology transfer (ITT) has gained significant attention in educational institutions worldwide. In Malaysia, universities play a pivotal role in fostering innovation and bridging the gap between research and industry. However, the awareness and understanding of ITT remain limited among academic staff and students. This article explores strategies and best practices to be free of ITT in Malaysian universities, focusing on key elements such as education, collaboration, and policy reforms.

UNDERSTANDING INTANGIBLE TECHNOLOGY TRANSFER

Intangible technology transfer refers to the transfer of non-physical assets, such as knowledge, skills, and proprietary processes, from one entity to another. Unlike tangible transfers, which involve physical products, ITT encompasses the sharing of intellectual property, expertise, and innovative practices (Guan et al., 2018). In the context of Malaysian universities, effective ITT can lead to improved academic-industry partnerships, increased commercialization of research, and ultimately, enhanced economic growth.

CURRENT STATE OF ITT AWARENESS IN MALAYSIAN UNIVERSITIES

Despite the potential benefits, awareness of ITT in Malaysian universities is often overshadowed by a focus on tangible outcomes, such as patents and prototypes. A study by Ahmad et al. (2021) revealed that many faculty members and students possess limited understanding of ITT concepts and processes, which hampers their ability to

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engage effectively in technology transfer initiatives. This lack of awareness poses challenges for universities aiming to maximize the impact of their research on industry and society.

Protection of intangible technology transfer (ITT) is crucial for both academia and industry, as mandated by the Strategic Trade Act of 2010 (STA 2010). Protecting ITT is essential to prevent unauthorized misuse or exploitation of inventions produced in educational or professional settings. Malaysia's first Intangible Technology Transfer Outreach to Academia took place on Tuesday, 9 July 2024, in Kuala Lumpur at the Shangri-La Hotel, which was organized jointly by the Strategic Trade Secretariat, Ministry of Investment, Trade and Industry (MITI), Malaysia Strategic Trade Control Community (MYSTCC), Multimedia University (MMU), and Export Control and Border Security programme (EXBS), US Department of State. The objective of the event was to explore the challenges and opportunities associated with intangible technology transfer and safe research practices in today's rapidly evolving technological landscape. This research is the first study conducted in Malaysia to examine the impact of intangible technology transfer outreach on academia. Using mixed method research design, the researcher distributed a questionnaire via Google Form to selected university attendees to analyse the impact of the ITT Outreach to Academia event and to identify the internal control programme initiated by the private and public universities. In general, the event had a beneficial effect, and initiatives are being implemented by the government to raise awareness among scholars regarding the importance of conducting safe research and the relevance of STA 2010. The results indicate the impact of the ITT Outreach to Academia event that took place on July 9, 2024. Some universities know about STA and ITT but don't have any immediate plans to take action, while others are aware and have already taken steps. Some universities have existing due diligence that partially meets STA requirements and are now looking to incorporate additional procedures.

The target population of this study is public and private university participants who attended the ITT Outreach event. The sample collected comprised of 18 respondents from the Technology Transfer Offices (TTOs) or Research Management Centres (RMCs) from 13 public and private universities.

The purposive sampling approach allowed the researchers to gather rich, detailed data that addressed their specific research questions. By selecting participants who had direct experience with digital tools, the study was able to capture nuanced insights into the factors that influenced engagement and academic performance.

The findings indicate the impact of the ITT Outreach to Academia event that took place on July 9, 2024. The majority of university respondents (78%) know about STA 2010. Some universities that do know about STA 2010 and ITT however don't have any immediate plans to take action, while others are aware and have already taken steps. Some universities have existing due diligence that partially meets STA requirements and are now looking to incorporate additional procedures.

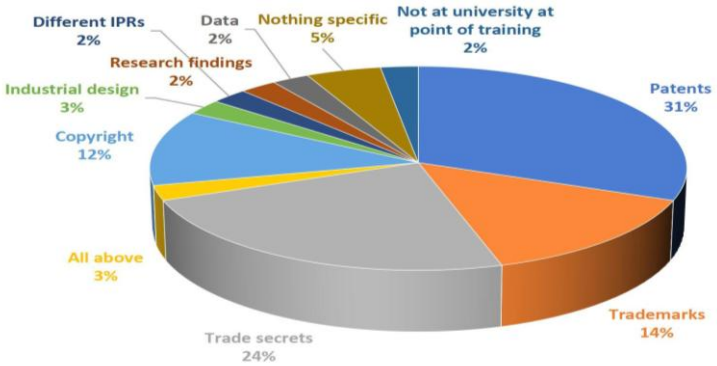

Figure 1. Responses for "Common Types of Intangible Technology Transferred and Monitored in Malaysian Universities"

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The responses varied from university to university; however, the most common type of intangible technology transferred and monitored according to the respondents was patents or 31%. The second most common intangible technology was trade secrets at 24% and third highest was trademarks at 14%.

Two of the respondents from the same private university shared that there is nothing specific regarding intangible technology transferred at their university. One respondent answered they were not at the university at the time of this outreach event held on 9th July 2024. One respondent answered all above for intangible technologies transferred.

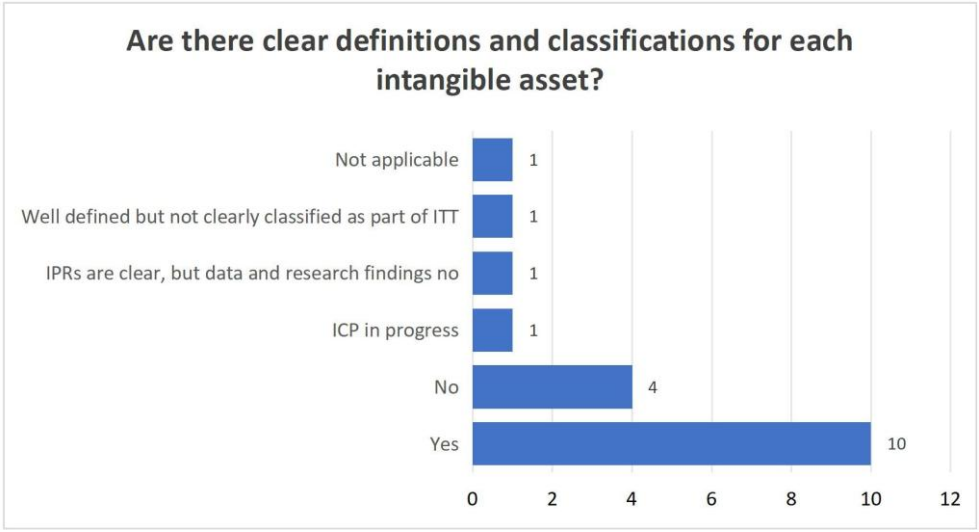

Figure 2. Responses to "Are There Clear Definitions and Classifications for Each Intangible Asset?"

The results show that 56% of the respondents agree that there are clear definitions and classifications for each intangible asset while 22% of the respondents shared that the definition and classification for each intangible asset were not clear, and the answers from the remainder 5.6% covered a wider range: Not Applicable (1) , Well defined but not clear as part of ITT (1), IPRs clear but data and research findings no (1) and ICP establishments in Progress (1).

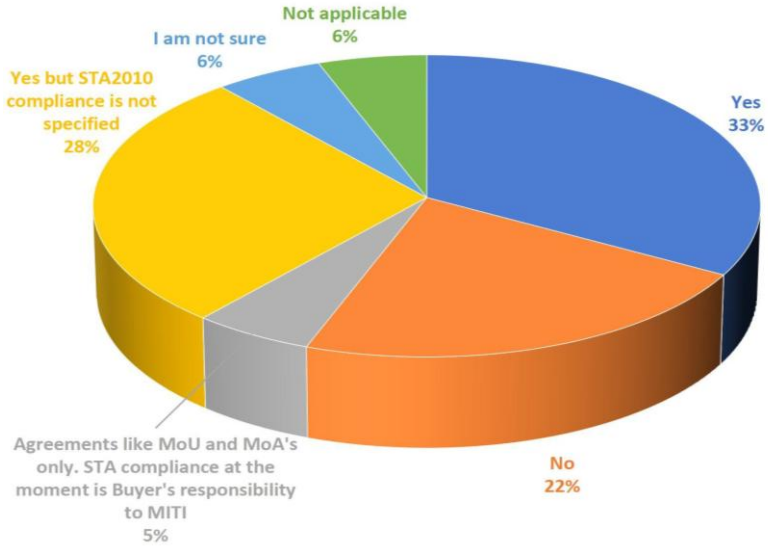

Figure 3. Responses to "Are Formal Agreements in Place for all Technology Transfers?"

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33% of the respondents answered Yes there are formal agreements in place for all technology transfers. 22% answered No, while 28% answered Yes but STA 2010 is not specified. Not counting the 'Not applicable' and 'I am not sure responses', the results show that the majority (55%) of the universities combining Do not have formal agreements (22%) responses with universities that Do Have Formal Agreements but Are Not STA 2010 compliant (28%) and Agreements like MoU and MoA only, STA compliance currently is mostly considered buyer's responsibility to get permissions from MITI (5%).

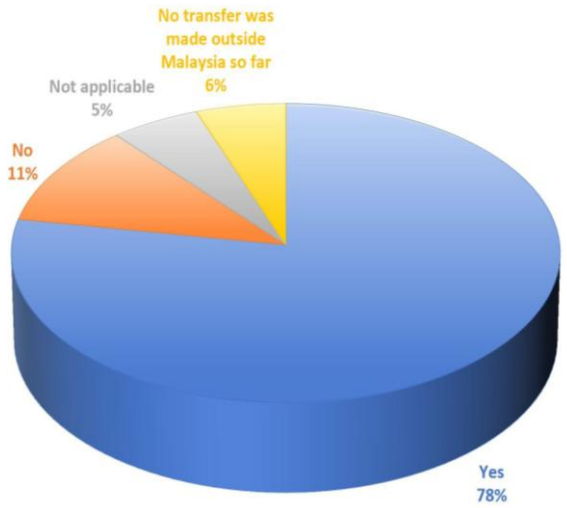

Figure 4. Responses to "Are You Aware of the Export Control Regulations (STA 2010) Applicable to the Technology Being Transferred?"

The majority of the respondents (78%) answered Yes they are aware of the export control regulations (STA 2010). 10% answered No and 5% answered Not Applicable.

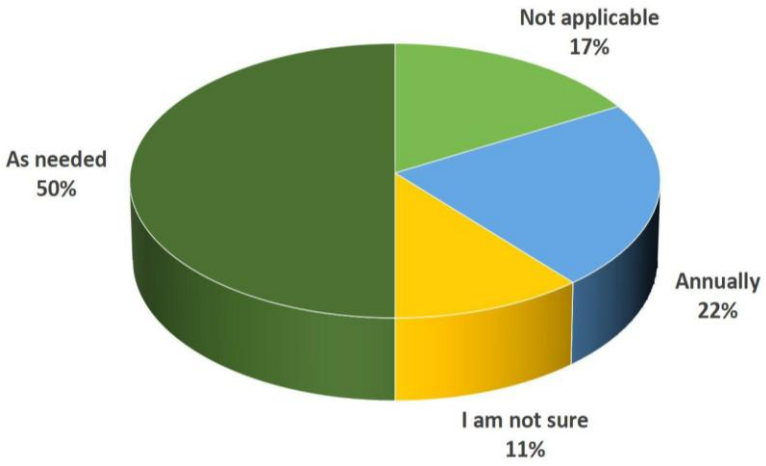

Figure 5. Responses to "How Often is the Internal Compliance programme Reviewed and Updated?"

The majority of the respondents 28% answered Annually and 28% answered As/When needed for periodicity of reviewing/updating their internal compliance programme. The second highest response was 17% for both Not

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applicable and 17% for Not sure. 5% said for STA purposes, none and 5% said No Specific ICP performed. We rely on audit process from other units.

STRATEGIES TO ENHANCE AWARENESS OF ITT

Integrating ITT into Curriculum

One of the most effective ways to enhance awareness is by integrating ITT concepts into the university curriculum. Courses on technology commercialization, intellectual property rights, and innovation management should be included in relevant programs. This educational approach ensures that students and faculty are equipped with the necessary knowledge and skills to engage in ITT activities (Sulaiman & Abdul Rahman, 2020).

Workshops and Training Programs

Organizing workshops and training sessions focused on ITT can provide hands-on experience and practical knowledge. These events can feature industry experts, successful entrepreneurs, and technology transfer professionals who can share insights and best practices. Such initiatives foster a collaborative learning environment and encourage participants to explore ITT opportunities (Mohamad et al., 2019).

Strengthening Industry Partnerships

Establishing robust partnerships with industry stakeholders is crucial for enhancing ITT awareness. Collaborative research projects, technology fairs, and internship programs can create platforms for knowledge exchange and networking. By involving industry partners in academic activities, universities can foster a culture of innovation and entrepreneurship (Zainal et al., 2020).

Promoting Success Stories

Highlighting successful ITT cases within the university can inspire faculty and students to engage in similar initiatives. Case studies showcasing successful collaborations, commercialization efforts, and innovative projects can serve as powerful motivators. Universities should utilize various channels, including social media and university publications, to disseminate these success stories (Ismail & Rahman, 2021).

Policy Reforms and Institutional Support

To create an enabling environment for ITT, universities must adopt supportive policies and frameworks. Institutional support, such as dedicated technology transfer offices and funding for innovation projects, can facilitate the transfer of intangible assets. Additionally, universities should advocate for national policies that promote ITT and enhance collaboration between academia and industry (Khan et al., 2022).

BEST PRACTICES FOR SUCCESSFUL ITT IMPLEMENTATION

Establishing Clear Objectives

Universities should define clear objectives for their ITT initiatives. These objectives should align with the institution's mission and vision, ensuring that all stakeholders are aware of the goals and expected outcomes.

Fostering a Collaborative Culture

A collaborative culture encourages interdisciplinary research and innovation. Universities should promote cross-departmental collaborations and create platforms for faculty and students to work together on ITT projects.

Continuous Evaluation and Improvement

Regular evaluation of ITT programs and initiatives is essential for understanding their impact and effectiveness. Feedback from participants can guide improvements and help universities adapt to changing needs and trends in technology transfer.

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CONCLUSION

Enhancing awareness of intangible technology transfer in Malaysian universities is crucial for maximizing the potential of research and innovation. By implementing strategies such as curriculum integration, industry partnerships, and supportive policies, universities can foster a culture of ITT that benefits both academia and industry. As Malaysia continues to advance in the global knowledge economy, a concerted effort to raise awareness and understanding of ITT will be essential for driving sustainable growth and development.

In view of this, it is recommended that:

a) An organised, targeted and planned outreach programme is needed, at least annually, to support intangible technology transfer (ITT) activities at the private and local universities.

b) A budget has to be allocated by the universities (private and public) to conduct such activities. The budget allocation, ideally, should be supported by the Ministry of Education (MOE), Ministry of Finance (MOF) and Ministry of Investment, Trade and Industry (MITI).

c) Train-the-trainer engagements are needed to sustain the talent pool of strategic trade experts in the Malaysian academia.

d) An App or website should be developed to facilitate desktop search by concerned individuals (university researchers) to help in filing for university permissions and for automating and streamlining the assessment process by the TTO

e) Regional and global engagement should be made a priority for outreach programmes conducted in the Malaysian universities, to stay updated on best practices or examples of efficient and comprehensive ITT controls in the academia.

f) A centralized data-sharing mechanism could be established for cases with high and moderate risk, for potential violation of STA 2010 and other international regulations.

g) Periodic Audit by the concerned government authority should be instituted to ensure that appropriate safeguards on research programmes are in place at the universities.

Acknowledgement

I would like to express my heartfelt gratitude to the esteemed mentors and colleagues who have significantly contributed to the development of this report on the impact of Intangible Technology Transfer (ITT) on private and public universities. First and foremost, I would like to thank WiSTMI and Coalescion, Shawn Baker-Garcia and team for giving me this opportunity to excel further in the field of Women in Strategic Trade. I extend my sincere thanks to Dr. Seema Ghalaut for her invaluable guidance and insight throughout this research. Her expertise has been instrumental in shaping the direction of this study. I am also deeply appreciative of Professor Dr. Maria Espona, whose extensive knowledge and constructive feedback have enriched our understanding of the subject matter. Her support has been crucial in navigating the complexities of ITT. A special thank you goes to Ms. Muslihana Mustafa for her encouragement and innovative ideas, which have inspired my approach and analyses. Her contributions have added depth to my findings. Lastly, I would like to acknowledge my triad member, Dr. Nor Ashikin Mohamed Yusof. Her collaboration and commitment have been essential in bringing this project to fruition. Working together has been a rewarding experience that I will always cherish. Together, their mentorship and support have made this report possible, and I am truly grateful for their contributions. Thank you all for your unwavering commitment to advancing knowledge in this vital area

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