Cawangan Perak

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WELCOME SPEECH FROM THE CHAIRMAN

RISM 17th International Surveying Conference for Undergraduates (ISCU 2025)

بسم الله الرحمن الرحيم السلام

عليكم ورحمة الله وبركاته

Greetings to all,

It is with great pleasure that I welcome you to the 17th RISM International Surveying Conference for Undergraduates (ISCU 2025), themed *"Embracing Construction Revolution 4.0: Transforming Malaysia's Built Environment."* On behalf of the Royal Institution of Surveyors Malaysia (RISM), I also wish to express our sincere appreciation to Universiti Teknologi MARA (UiTM), Perak Campus, for graciously hosting this significant event.

As we navigate the era of the Fourth Industrial Revolution (IR4.0)—or in our context, Construction Revolution 4.0 (CR4.0)—we are witnessing transformative advancements across the global construction sector. Technologies such as Building Information Modelling (BIM), the Internet of Things (IoT), artificial intelligence (AI), robotics, big data analytics, and cloud computing are redefining the way we build, manage, and interact with our built environment. For Malaysia, embracing CR4.0 is a strategic imperative to achieve our socio-economic and environmental goals.

This conference serves as a vital platform to unite surveying undergraduates from various disciplines, fostering critical dialogue on industry challenges, enhancing professional networking, and preparing a new generation of talent for the rapidly evolving construction landscape. It is also an opportunity for employers to engage with and inspire our future professionals.

I would like to extend my heartfelt thanks to all industry speakers, paper presenters, judges, and participants for their time, contributions, and support in making ISCU 2025 a success. I also commend the organising committee for curating a meaningful and dynamic conference experience.

May the knowledge gained, connections formed, and ideas exchanged during this event inspire all participants to lead and innovate in their future endeavours.

Wishing everyone a productive and memorable conference.

Prof. Ts Sr Dr. Adi Irfan Bin Che Ani'
Chairman, Universities' Partnering Committee
RISM Session 2024/2025
May 2025

WELCOME SPEECH FROM CO-CHAIRMAN

RISM 17th International Surveying Conference for Undergraduates (ISCU 2025)

Bismillahirrahmanirrahim.

السلام عليكم ورحمة الله وبركاته and greetings to all.

It is my great pleasure to welcome everyone to the 17th International Surveyor Conference for Undergraduates (ISCU 2025), proudly hosted by Universiti Teknologi MARA (UiTM) Perak Branch in collaboration with the Royal Institution of Surveyors Malaysia (RISM). This event is a meaningful platform for students in the built environment to share ideas, showcase innovations, and build professional networks. We are honoured by your presence and enthusiastic participation, with 135 accepted papers and 78 poster presentations this year.

UiTM Perak, home to the College of Built Environment, has long been a hub for academic excellence in architecture, planning, and surveying. Our commitment remains strong in nurturing competent graduates who meet industry demands and contribute to nation-building.

While you're here, we invite you to experience the heritage and culture of Perak Tengah from the architectural richness of Rumah Kutai to the historical towns of Pasir Salak, Bota, and Kampung Gajah.

To all presenters and winners, congratulations on your achievements. Let your work today be a catalyst for future success and academic growth. We hope this conference will inspire you to explore new ideas, foster collaboration, and make lasting memories.

My deepest thanks to the Royal Institution of Surveyors Malaysia (RISM) and the organising committee for making this event a success.

We hope your experience here will be rewarding and unforgettable.

Thank you. Selamat datang dan selamat berjaya.

Associates Professor Dr. Nur Hisham Ibrahim, *PMP*
Co-Chairman, Universities' Partnering Committee
RISM Session 2024/2025
May 2025

WELCOME SPEECH FROM THE PROJECT DIRECTOR

RISM 17th International Surveying Conference for Undergraduates 2025

Alhamdulillah, all praise to Allah S.W.T. for His guidance and blessings in making the RISM 17th International Surveying Conference for Undergraduates (ISCU) 2025 a reality.

It is with great honour and gratitude that I welcome all participants, guests, academicians, and industry professionals to this prestigious event, proudly organized under the Royal Institution of Surveyors Malaysia (RISM). This 17th edition of ISCU stands as a proud testament to our collective dedication toward academic excellence, professional collaboration, and youth empowerment in the field of surveying.

I extend my heartfelt appreciation to RISM for its unwavering support, to the hardworking ISCU 2025 Organising Committee, and to all 16 partnering universities across Malaysia for their commitment and contributions. Your efforts have shaped this conference into a dynamic platform for knowledge exchange, innovation, and professional growth.

To the academicians and practitioners present, your insights are invaluable in bridging the gap between academic theory and real-world practice. To our undergraduate participants, your passion, curiosity, and commitment are the very foundation of our future. May this conference not only deepen your academic journey but also ignite a spirit of leadership, integrity, and sustainable thinking.

Let this gathering serve as more than an academic milestone. May it foster lifelong networks, inspire transformative ideas, and chart new directions in our shared professional journey.

Wishing everyone a rewarding and inspiring conference experience.

Sr Dr. Nurul Fadzila Zahari
Project Director
RISM 17th ISCU 2025

PERSPECTIVE OF THE STAKEHOLDERS ON PROPTECH ADOPTION IN THE MALAYSIAN REAL ESTATE INDUSTRY

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ABSTRACT

The advancement of technologies in the real estate industry also known as PropTech (Property Technology) has been building its momentum through several revolutions started from the middle 80's which was identify as PropTech 1.0, PropTech 2.0, PropTech 3.0 and currently PropTech 4.0 which aligns with the Industry Revolution 4.0 (4IR) policy. PropTech 4.0 offers technological advancement for the real estate professionals including valuers, property managers, real estate agents, developers, property buyers and sellers by providing cutting edge software for day to day real estate operations. The rapid advancement of PropTech has the potential to revolutionize the real estate sector in Malaysia by improving operational efficiency, enhancing transparency, and providing better user-experiences for the stakeholders. Therefore, employers and stakeholders play an important roles in ensuring efficient and effective adoption of Proptech towards leveraging the real estate industry portfolio in Malaysia. This research aims to explore the industry player perspective on the PropTech potential and advancement in the Malaysia real estate industry. The objective of this research are i) To identify existing PropTech innovations in the real estate industry in Malaysia; ii) To assess the perceptions of the real estate industry stakeholders on the benefits and challenges of PropTech adoption; iii) To explore the future potential and collaboration of PropTech in reshaping the real estate industry in Malaysia. This research shall adopt a qualitative method approach by conducting an interview with the stakeholders. The expected outcome of this study will provide a thorough understanding on the current adoption of PropTech in the Malaysia real estate industry and its future potential that could leverage the real estate industry which aligns with the National Fourth Industrial Revolution (4IR) Policy set by the Malaysia government in 2021.

Keywords: PropTech, Real Estate Industry, Stakeholders, Malaysia

I. INTRODUCTION

A new era of human civilization has emerged since the pandemic Covid-19 which has highly accelerated the wave of technological digitalization in every aspect of humans' day to day lifestyle. With the global implementation of the Fourth Industrial Revolution (4IR), a significant impact has elevated technology usage in various sectors that includes the real estate industry which has been identified as Property Technology (PropTech). Proptech refers to the advancement of technology adoption in the real estate industry that includes technologies such as Building Information Modelling (BIM) , Artificial Intelligence (AI), Internet of Things (IoT), Blockchain, Big Data, smart contract, data analytics tools, Virtual Reality (VR) and drone that leverage the overall real estate industry in providing a smart living innovation, systematic management, improving productivity in delivering real estate servicing according to the global needs and trends.

As the world are moving towards the Fourth Industrial Revolution (4IR), is it crucial for the real estate industry stakeholders to adapt and integrate technology usage in the real estate services to upkeep with the new generation of tech savvy potential clients as well as to uplift services delivery at par with the advancement of complementary sectors such as constructions that has well incorporated smart homes technology in newly built projects. The real estate industry players includes real estate valuers, property managers, real estate agents as well as property investors plays an important role in reshaping the traditional practice of real estate services towards an innovation and productive practice by being able to assess the current level of Proptech incorporation in actual real estate practice and identify any gaps or needs for improvement that could find solutions in Proptech innovations.

I. PROBLEM STATEMENT

International studies highlight that the Proptech adoption in real estate companies has raised the bar in operational efficiency, customer engagement, innovation, and workforce productivity which has set a new battleground in the real estate industry investment that attracts investors' interest in reinventing in innovative and productive real estate business (Siniak et al., 2020). However, the level of technology usage in the Malaysia real estate industry, specifically among the real estate agents, remains low and limited despite the global trends of Proptech and the National Fourth Industrial Revolution (4IR) that is highly encouraged by the government due primary reasons such as inadequate training opportunities and expensive technology cost (Mohamad, Aini, & Alias, 2024). Therefore, this research look forward to gather the real perspective, ideas and suggestions from the real estate professionals on efforts that could be implement towards integration of Proptech in the Malaysia real estate industry.

Furthermore, the adoption of Proptech in Malaysia real estate industry is not just limited to the stakeholders in terms of financial and training aspects. The legal framework and enforcement also remains vague on the Proptech establishments in Malaysia as there are several Proptech startups that are yet to register under the Board of Valuers, Appraisers, Estate Agents and Property Managers (BOVAEP) which deemed as an illegal real estate brokering according to the existing legislation under the BOVAEP (New Straits Times, 2019). According to the Malaysian Institute of Professional Estate Agents and Consultants (MIPEAC) President Francis S.P. Loh (New Straits Times, 2019), it is advisable for the Proptech startups to abide by the legislations and register the company under BOVAEP to ensure public safety in property dealing matters which is regulated under the body.

As a matter of fact, it is important to ensure every Proptech startups company collaborates with a real estate professional to ensure proper conduct of real estate transactions according to the legislation. According to Act 242, section 22C (ba), any person unless registered estate agent with an authority to practice is forbids to offer for any sale, rent or lease of property. By having a firm enforcement and guidelines on these matters, it could improve positive collaboration between the technology industry and real estate industry to leverage the implementation of Proptech in Malaysia.

Hence, this research aims to gather the perspective of stakeholders in resolving the illegal brokering issue and finding a mutual ground between two industries towards an innovative real estate experience in Malaysia. After all, the real estate industry has contributed 1.3% of the Malaysia GDP‘s in 2023 (Statista, 2023) while the technology industry which includes startups has contributed 23.2% to Malaysia's GDP in 2021 (Ministry of Science, Technology and Innovation Malaysia [MOSTI], 2021). Further collaboration between both industries could potentially enhance and uplift the real estate industry practice and contribute to increase the national economy in technology and real estate sector.

II. RESEARCH QUESTION

The following questions act as the guidelines to accomplish the research objectives:

a) What are the existing PropTech innovations in the real estate industry?
b) What are the benefits and challenges of PropTech adoption in Malaysia real estate industry?
c) What is the potential of PropTech adoption that could enhance the real estate industry in Malaysia?

III. RESEARCH OBJECTIVES

The main objective of this research is to identify the existing PropTech innovations adoption from the perspective of Malaysia real estate stakeholders to identify the future potential in reshaping the real estate industry in Malaysia. To achieve this objectives, the research objectives have been outlined as follows:

a) To identify existing PropTech innovations in the real estate industry in Malaysia.
b) To assess the perceptions of the real estate industry stakeholders on the benefits and challenges of PropTech adoption.
c) To explore the future potential and collaboration of PropTech in reshaping the real estate industry in Malaysia.

II. PRELIMINARY LITERATURE REVIEW

This part of the research shall include the preliminary literature review on two categories which includes the Proptech and real estate sections.

Proptech

Proptech has emerged in the real estate scene as early as the mid-1980s which first started in the United States. Previously, the Proptech wave has undergone three generations which are the Prop-Tech 1.0 (1980-2000); Prop-Tech 2.0 (2000-2010), and Prop Tech 3.0 (2010-2021) according to (EDU, 2021). The new wave of Proptech which is the Proptech 4.0 has emerged post Covid-19 aligned with the Fourth Industrial Revolution (4IR) according to (Malaysia Proptech Association, 2024)

Proptech is defined as digital technology integration such as Artificial intelligence (AI), Big Data, Block chain, Virtual Reality (VR), drones and other digital technologies into the real estate process and practice (Siniak et al., 2020). Proptech, shorten from the word Property Technology, is revolutionizing the real estate industry by providing ease in effective communication as well as transaction process that enables data-driven property management, better decision-making, and optimized operations of real estate practices (Darshan, 2024). Proptech may provide various real estate solutions through technology advancement, however it may be much challenging that it initially appears. According to (Darshan, 2024) Proptech consists of 2 main types which are the front-end technologies that are directly related to the consumers and the back-end technologies that power the Proptech platforms such as data analytics systems and cloud-based software which require a high IT skill for operation.

Real Estate

Real estate can be defined as land, and any permanent structures or improvements attached to it, whether natural or man-made including the surface of the land and below the surface of the land. Therefore, the real estate industry refers to the practices related in development, buying, selling, leasing and management of real estate properties. Real estate industry consists of professionals such as real estate valuers, property managers, real estate agents and developers. Real estate does not only contribute to asset and wealth creation for individuals but it also contributes to macroeconomic growth (Statista, 2023).

I. THEORETICAL FRAMEWORK

The Technology Acceptance Model (TAM) originally proposed by Davis (1992), provide a robust foundation to understand the behavior in relation to the adoption of new technologies in the industry. The model explain two key factors that influence an individual's decision in adopting the use of new technologies which are based on the Perceived Usefulness (PU) whereby it refers to the degree of a person believes that technology integration would enhance their performance in work or life and Perceived Ease of Use (PEOU) whereby it refers to the degree of a person believes that using technology will be easy and effortless. TAM proposed that if users perceived technology to be useful and easy to use, they are more likely to develop an attitude or interest toward using the technology which contribute to behavioral intention to use technology, therefore resulting in actually using the technology.

In the context of this research, TAM provides a useful framework to explore on how and why should real estate practitioners adopt Proptech by identifying the perceived usefulness and ease of use to uncover the pattern of existing technology adoption as well as the benefits and challenges in Malaysia real estate sector.

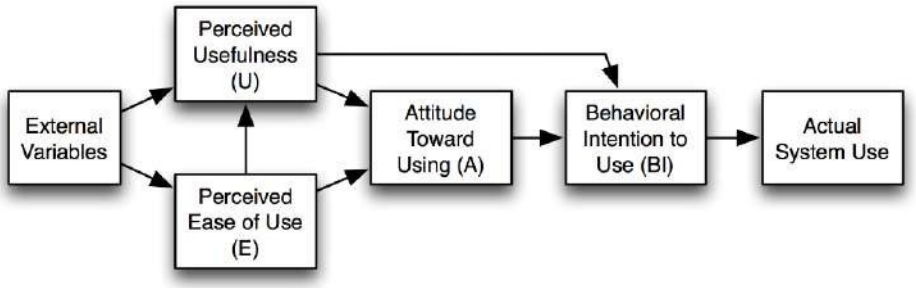

Figure 1.0 Technology Acceptance Model Framework

This research also provide a proposed conceptual framework that is tailored to the real estate industry in Malaysia by taking into consideration other factors as independent variables, dependent variables, mediating variables and meditators variables that could influence one aspect and another. The independent variables taken into consideration the stakeholders factors in adopting Proptech by addressing the awareness, knowledge, challenges, perceived of usefulness, ease of use as well as technological readiness and policy support. This conceptual framework proposed

that with adequate awareness and knowledge, identifying the challenges and usefulness, explore ease of use, technological readiness and the policy support needed by the real estate practitioner with the influence of mediating variables such as individual trust in Proptech implementation, the market trend that highly adopting Proptech and forward-thinking organizational culture that is motivated to implement Proptech innovations it could will determine the dependent variables of which is the stakeholder perspective on the Proptech adoption in the real estate industry. The moderating variables is also part of the framework as it contribute to as a factor that strengthen the relationship between the independent and dependent variables. As example, smaller firm size may dealt with investors challenges and needed more policy support in adopting Proptech compare to larger firm which will affect the outcome of stakeholder's perspective to varies based on the moderating variables.

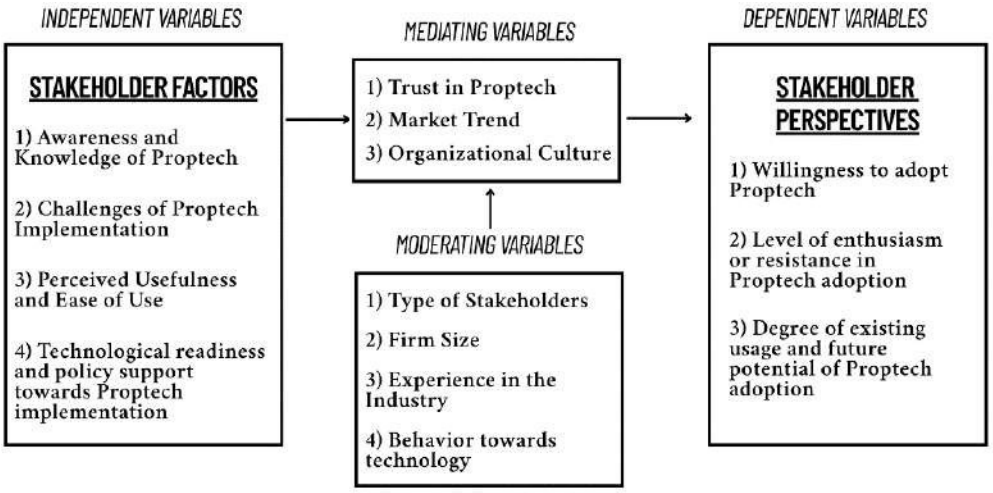

Figure 2.0 Proposed Conceptual Framework

III. RESEARCH METHODOLOGY

This research shall adopt an exploratory research design, adopting a *qualitative method approach* by conducting an in-depth interview to explore diverse perspectives of the real estate stakeholders on the integration of PropTech in Malaysia real estate industry. The exploratory research design using qualitative method of this research is structured to the target group as follows:

I. Real Estate Practitioners: In-depth interview with real estate professionals that includes real estate valuers, agents, negotiator as well as property managers to identify their perspective on the industry readiness as well as the benefits and challenges of adopting PropTech in their work.

II. Private Associations: In-depth interview with real estate association bodies such as Malaysia Institute of Estate Agent (MIEA) and startups association, Malaysia PropTech Association on their perception of future potential and collaboration of PropTech in Malaysia real estate industry.

RESEARCH PHASE

Phase 1: Literature Review

This first phase shall be conducted based on literature review on existing articles and journals on the PropTech to identify the existing adoption, identify gaps and assist in finalizing the research objectives. The literature review as the secondary data source, extracting information from research findings and in-depth understanding of the research topic. The literature review on PropTech will help to identify the adoption of PropTech generally and its current application in Malaysia real estate industry. In this phase, it is crucial to understand the research objectives in screening the relevant secondary source references such as articles, journals, regulations and other official published documents related with the research topic.

Phase 2: Interviews

In the second phase, a structured interview process will be conducted to gather primary data from key stakeholders in the real estate sector, including real estate valuers, property managers, real estate agents and PropTech providers. A comprehensive interview questionnaire will be designed to capture insights on PropTech adoption, challenges, benefits, and their impact on real estate practices in Malaysia. The interviews aim to explore real-world experiences, perspectives, and challenges faced by industry stakeholders in adopting PropTech solutions. By collecting qualitative data, this phase will provide a deeper understanding of stakeholder needs, concerns, and the practical

implications of PropTech adoption in Malaysia's real estate sector. The findings from this phase will complement the literature review, offering a balanced view of the current state of PropTech in Malaysia.

Phase 3: Data Analysis
In the third phase, the data collected from both the literature review and interviews will be analyzed using qualitative methods. The analysis will focus on identifying patterns, relationships, and trends related to PropTech adoption in Malaysia's real estate sector. Thematic analysis will serve as the primary method for qualitative data analysis. In order to ensure systematic data collection and analysis, software tools, NVivo may be used to organize data according to significant phrases for data interpretation.

DATA SAMPLING

This research is shall adopt a purposive sampling strategy to identify the target respondent that is well equipped with proficient experience and knowledge in the real estate industry practice that could provide reliable and relevant insights on the Proptech adoption in the real estate industry scene in Malaysia. The aim of this research is to gather diverse yet relevant insights of the real estate industry stakeholders on their perspective on the benefits, challenges, impact and potential improvements that encourages the Proptech adoption into the real estate industry practice from various point of view including valuers, estate agents, property managers as well as the Proptech startups. For the purpose of this research, the respondent shall be selected based on the criteria below:

a) Valuers, Estate Agents and Property Managers that is registered under the Board of Valuers, Appraisers, Estate Agents and Property Managers (BOVAEP) with a minimum of 3 years' professional experience in the industry.
b) Involved or had the experience with operational engagement with Proptech tools in practicing real estate services.
c) Private associations that represent the members of the registered real estate professionals.
d) Proptech startups or associations that represent the members of PropTech startup.

The data sampling method may adopt a stratified sampling to ensure precision and fair representation of valuers, estate agents and property managers. The sampling size shall anticipate 24 participants that will be equally represent each stakeholders however the validation of data sampling will also depending on when the data has reached it saturation and no new significant themes emerging from the ongoing interviews.

Table 1.0 Data Sampling Size

Stakeholders	Number of Interviews
Valuers	6
Estate Agents	6
Property Managers	6
Proptech Start-ups	6

Data Collection Procedure
This data collection method of this research will be based on qualitative approach by conducting a semi-structured comprehensive interview questionnaire that will be designed to capture insights on PropTech adoption, challenges, benefits, and their impact on real estate practices in Malaysia. The interviews aim to explore real-world experiences, perspectives, ideas and challenges faced by industry stakeholders in adopting PropTech solutions.

Table 2.0 Data Collection Method

Section	Title	Purpose
A	Background Information	To identify the respondent experience and qualifications in the real estate and Proptech industry.
B	Awareness and Adoption of Proptech	To identify the respondent's level of awareness, understanding and adoption of the existing Proptech in the real estate industry.
C	Challenges of Proptech Adoption in the Real Estate Industry	To understand and explore the challenges face by the respondent in adopting Proptech in the real estate industry.
D	Impact of Proptech in the Real Estate Industry	To explore the respondent opinion on the impact and benefit of Proptech adoption in the real estate industry.

E	Proptech Usefulness and Ease of Use	To explore respondent experiences and insight on the usefulness and degree of ease in implementing Proptech.
F	Future of Proptech in Malaysia	To explore the respondent insight on the future potential and innovations of Proptech adoption that could enhance the real estate industry and to gather suggestions on how Proptech can be better integrated into the Malaysia's real estate industry.

This research shall employ two validation strategies to ensure credibility and rigor of this qualitative method approach that will emphasize the dependability and conformability by having respondent validation and member checking. Initial findings from the semi-structured interview shall be presented to the respondent for the purpose of authenticity validation and feedback for further adjustment to enhance understanding.

IV. SIGNIFICANCE OF RESEARCH

This research aims to fill the gap in PropTech studies specific to the Malaysian real estate industry. By exploring the impact of PropTech on real estate stakeholders by identifying its benefits, challenges and future potential. The study will provide valuable insights to real estate professionals, startups firms, and policymakers to better harness technology for sustainable growth that is aligned with the Malaysia national policy IR4.0 as well as the global trends. This research aims the targeted community could gain insights as follows:

I. This research shall assist real estate practitioners such as real estate valuers, property managers, real estate agents and investors to use the findings to leverage PropTech solutions effectively.
II. This research shall provide insights into stakeholder needs and challenges that will help startups design user-centric PropTech solutions.
III. The study shall provide recommendations from stakeholders to develop policies that foster PropTech adoption and collaboration within the real estate industry and PropTech startups in reshaping Malaysia real estate industry.
IV. This research fills a gap in existing literature, contributing to the broader understanding of Proptech's impact in Malaysia real estate industry.

All in all, by understanding the perceived usefulness and ease of use of Proptech under the Technology Acceptance Model (TAM) it helps the real estate practitioner to identify technologies and innovation that align with their capabilities and serves their operational goals in delivering real estate services. Other than that, stakeholders perspective also contribute to a comprehensive solutions in providing a user-centric Proptech innovations that meets the market needs insight while providing insights for the industry regulators in the adaptation of digital transformation in the industry. For instance, perspective from the stakeholder may result in diverse insights and ideas on incentives and policies creation that could support real estate firms in overcoming challenges and knowledge gap when adopting Proptech.

V. CONCLUSION

The Proptech innovations holds various potential in reshaping real estate industry practices in Malaysia towards a productive and sustainable operational system. It is essential for the industry players to be well equipped with the Proptech adoption in their professional practice to keep up with the Fourth Industrial Revolution (4IR) as the new generation that would enter into the industry will be among those who are digital fluent that integrates their daily activities with technology advancement. Therefore, the real estate industry must be well equipped and practice technology integration by adopting Proptech as part of the real estate industry practice. Furthermore, more investors are keen towards investing in innovative businesses that incorporate brilliant technology to deliver efficient services. By having the real estate and ICT industry working together in building an innovative Proptech integration in the Malaysia real estate industry, it will not just boost the economy but also enhance Malaysia real estate services at par with well-developed country globally. In conclusion, this research shall focus on understanding the perspective of stakeholders which includes real estate valuer, property managers, real estate agents, property investors as well as the Proptech startups on the benefits, challenges and potential of Proptech adoption in reshaping Malaysia real estate industry.

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