

Analysis Of Proptech Development Policies In The United Kingdom And The Potential For Application In The Vietnam Real Estate Market

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Abstract - In the context of technology reshaping the global real estate market, this paper focuses on analyzing PropTech development policies in the United Kingdom, one of the pioneering countries in building a real estate technology ecosystem, in order to draw relevant lessons for application in Vietnam. With over 800 PropTech companies, a total investment exceeding £1.65 billion in 2022, and a coherent policy framework, the UK has established a solid foundation based on four key pillars: (1) Open data, (2) Legal sandbox, (3) R&D funding, and (4) Triple Helix collaboration mechanisms. Through comparative analysis, the paper highlights that Vietnam possesses favorable conditions such as rapid urbanization, increasing demand for market modernization, and a strong national agenda for digital transformation. However, challenges remain in terms of the absence of a flexible legal framework and standardized real estate data. Therefore, the study proposes a localized, sector-prioritized pilot policy model as a foundational approach to develop PropTech in Vietnam in a systematic, transparent, and sustainable manner.

Keywords - PropTech; Real estate open data; Legal sandbox; Technology R&D

I. INTRODUCTION

Amidst the ongoing global wave of digital transformation, real estate is one of the sectors with relatively slow technology adoption but holds tremendous breakthrough potential. The concept of PropTech (Property Technology) emerged in the early 2000s and has since become one of the most heavily invested technology fields in major financial centers such as London, New York, Singapore, and Sydney. According to the KPMG Global PropTech Survey 2023, over 93% of real estate companies surveyed believe that PropTech will significantly impact traditional business models within the next five years, with 52% already investing directly in digital technologies for asset management, transactions, and data analytics. The United Kingdom is one of the pioneering countries in systematically designing and implementing PropTech development policies. According to Unissu (2023), by the end of 2022, there were over 800 PropTech companies operating in the UK market, particularly concentrated in London, one of Europe's leading financial and innovation hubs. Investment in UK PropTech reached approximately £1.6 billion in 2022, a nearly 230% increase compared to 2018, with active participation from venture capital funds, banks, and the government (CBRE UK, 2023). A key policy

pillar that has enabled the UK to lead in this field is the implementation of open data policies for the real estate market. These policies allow businesses to access information on planning, cadastral data, and transaction prices transparently through platforms like HM Land Registry. Beyond data provision, the UK government also operates the Regulatory Sandbox program, managed by the Financial Conduct Authority (FCA), which allows real estate startups to test new business models in a flexible, controlled regulatory environment. According to FCA (2022), more than 100 real estate startups have been supported within the sandbox framework, including models such as blockchain-based registries, AI-driven valuations, smart contract rentals, and property crowdfunding.

Additionally, the Innovate UK - Smart Grants program provides funding ranging from £25,000 to £2 million for technology innovation projects in PropTech, fostering R&D and enhancing innovation productivity (UKRI, 2023). In contrast, Vietnam's PropTech market, while beginning to take shape, remains nascent. According to the Vietnam Digital Landscape 2023 report by Q&Me Research, around 50 PropTech startups are currently operating, mainly focusing on online brokerage (e.g., Rever, Batdongsan.com.vn), property management (e.g., Houze, Landsoft), real estate data platforms (e.g., MeeyLand), and short-term rentals (e.g., Luxstay). The total investment in Vietnam's PropTech sector in 2022 reached only around USD 10 million, equivalent to just 0.6% of the UK's investment scale (Do Ventures & NIC, 2023). Critically, nearly 85% of land and urban planning data in Vietnam has not yet been digitized or integrated nationwide (Ministry of Natural Resources and Environment, 2023), posing significant challenges for tech companies developing data-driven and AI-based applications. Furthermore, Vietnam currently lacks dedicated policies for piloting new business models in real estate and does not have targeted R&D funding programs for PropTech. The absence of legal sandboxes, limited access to innovation capital, and weak linkages between government, universities, and enterprises remain major obstacles. Meanwhile, Vietnam's real estate market is projected to surpass USD 35 billion by 2025 (Statista, 2024), with urbanization accelerating, expected to reach 45% by 2030 (Ministry of Construction, 2022). This creates an urgent need to develop a modern, sustainable, and high-performing PropTech ecosystem. Based on this context, the paper aims to analyze the PropTech development policy system in the UK, one of the most representative and successful models, in order to draw policy lessons and assess their applicability to the development conditions of Vietnam's real estate market. Enhancing productivity in the real estate sector cannot be separated from the digital transformation process, which requires enabling policies that not only guide the market but also stimulate innovation across the entire industry.

II. LITERATURE REVIEW

2.1. Theoretical Framework

PropTech, short for "Property Technology" refers to the application of digital technologies across all stages of the real estate value chain from project development, marketing, transactions, leasing, to asset management and operations. According to research by Andrew Baum (2017) of the University of Oxford, PropTech is not a separate industry but rather a technological transformation within a traditional sector, similar to how FinTech applies to finance or EdTech to education. PropTech encompasses a wide range of tools, from online brokerage platforms (e.g., Zillow, Rightmove) and property management software to disruptive technologies such as blockchain, artificial intelligence (AI), the Internet of Things (IoT), and augmented/virtual reality (AR/VR). According to the KPMG Global PropTech Survey (2023), PropTech development can be categorized into three evolutionary stages: (1) PropTech 1.0 (pre-2010): The digitization of property listings and traditional brokerage services; (2) PropTech 2.0 (2010 - 2018): The emergence of data management platforms, SaaS systems for real estate, and CRM integrations; (3) PropTech 3.0 (post-2018): Characterized by the use of smart technologies like AI, blockchain, machine learning, and ESG integration to optimize operations, financialize assets, and promote sustainable development.

According to the Oxford Future of Real Estate Initiative (2022), the application of technologies such as AI-based property valuation, customer behavior analytics, and peer-to-peer rental models has helped reduce transaction time in the UK real estate market by up to 25% and operating costs of buildings by 12 - 15%, while also improving transparency and user experience. This paper applies the Mission-Oriented Innovation Policy framework, developed by Mariana Mazzucato (2018), to explain the government's role in fostering technological innovation in real estate. This theory posits that the state is not merely a "regulator" but an "active innovation agent" through deliberate programs such as R&D funding, experimental legal frameworks, and the establishment of public missions such as digitalizing the housing market, developing smart cities, and improving sustainability in asset operations.

Empirical studies in the UK, particularly by Edler & Fagerberg (2017), highlight that successful innovation policies are often associated with the formation of strategic alliances among the state, universities/research institutions, and businesses that are known as the Triple Helix model (Etzkowitz & Leydesdorff, 2000). This model has facilitated the emergence of billion-pound PropTech platforms in the UK through open data integration, shared research infrastructure, and the establishment of common operational standards. This market-shaping policy model is further reflected in tools such as: (1) Legal sandbox: providing a controlled, flexible regulatory environment for real estate tech startups to test innovative models; (2) R&D funding support: through programs like Smart Grants (Innovate UK), offering up to £2 million per project for PropTech companies developing new technologies; (3) Open data policy: since 2015, the UK has implemented the “Digital Land” program and opened access to data from HM Land Registry, enabling PropTech companies to officially and publicly access land, planning, and transaction data via APIs. Rather than relying solely on market forces, the UK government has played an active role in shaping the PropTech ecosystem, making it one of the most dynamic real estate tech markets in Europe. According to Brynjolfsson & McAfee (2014), fully digitized enterprises demonstrate up to 26% higher labor productivity compared to traditional firms, thanks to process automation, reduced transaction time, and enhanced customer data analytics. McKinsey (2022) also notes that real estate companies adopting digital technologies can improve operational productivity by 15 - 30% and reduce project development time by up to 20%. In the context of digital transformation, the UK's real estate sector recorded an average annual productivity growth of 3.2% between 2015 and 2021, largely driven by the adoption of data technologies and intelligent operational software. This progress is underpinned by a transparent legal infrastructure, open data, and incentivized R&D mechanisms. Conversely, in developing countries like Vietnam, where market data remains fragmented, real estate transactions still rely heavily on asymmetric information and personal networks. As a result, the sector's productivity lags significantly behind regional benchmarks (World Bank, 2020).

2.2. Research Methodology

This study employs secondary document analysis to collect and synthesize policies, reports, academic publications, and practical data related to the PropTech sector in the United Kingdom and Vietnam. The sources include government reports (such as HM Land Registry, FCA, Innovate UK), industry reports (CBRE, KPMG, Deloitte), data from international organizations (OECD, World Bank), and academic research published in specialized journals. The purpose is to analyze the content of policies related to open data, legal sandboxes, and innovation support in the real estate sector in the UK. The analysis focuses on identifying key policy pillars, intervention objectives, implementation tools, and the degree of alignment with mission-oriented innovation.

III. ANALYSIS OF PROPTech DEVELOPMENT POLICIES IN THE UNITED KINGDOM

3.1. Context of Formation and Development

Over the past two decades, the United Kingdom has gradually affirmed its position as one of the leading countries in fostering innovation in the real estate sector, with the emergence of a robust PropTech ecosystem. The formation and growth of PropTech in the UK did not occur by chance, but rather as the result of a well-balanced combination of a dynamic market, transparent institutional foundations, and, notably, the guiding role of public innovation-oriented policy. One of the key drivers behind PropTech's growth in the UK is London's status as Europe's leading financial center, where a concentration of venture capital firms, tech investors, multinational real estate corporations, and high-tech startups has created fertile ground for innovation. According to Unissu (2023), as of the end of 2022, the UK had 812 active PropTech companies, accounting for nearly 10% of all PropTech firms globally. Of these, 72% were headquartered in London, forming the largest PropTech innovation cluster in Europe, far surpassing cities like Berlin, Amsterdam, and Paris. Internationally, only the United States surpasses the UK in terms of the number of PropTech firms, thanks to its larger market and investment scale. In contrast, countries such as Germany (540 companies), Singapore (150 companies), and Vietnam (fewer than 50 companies) remain in early stages of development.

The investment landscape also reflects remarkable growth. According to CBRE UK (2023), total PropTech investment in the UK reached £1.65 billion in 2022, a more than 230% increase compared to 2018. This growth not only reflects investor confidence in real estate technology but also highlights the supportive legal and policy environment cultivated by the UK government. Priority investment areas include: (1) AI-based property valuation platforms for automated appraisals; (2) Smart building management systems to optimize energy use, maintenance, and asset operations; (3) Blockchain applications for asset registration and transactions

to enhance transparency and security; (4) Real estate tokenization platforms that allow fractional ownership trading. Beyond favorable market conditions, the UK's leadership in PropTech is largely attributed to the government's proactive and strategic participation in designing a mission-oriented innovation policy ecosystem. The government's role goes beyond merely "fixing market failures" to actively "shaping new markets" through initiatives such as regulatory sandboxes, targeted R&D funding, open property data, and cross-sector/regional integration. Unlike many countries where PropTech growth is primarily market-driven, in the UK, public policy plays a leading role in creating experimental environments, mitigating innovation risk, and incentivizing private sector participation. The success of PropTech in the UK is closely tied to broader efforts in the digital transformation of urban governance and the real estate market. According to the UK Government Digital Strategy (2022), the integration of digital technology into spatial data infrastructure, building permitting, asset registration, and market monitoring is a strategic priority for 2022 - 2030. This is part of a larger agenda to build a data-driven economy and a smart urban environment. Overall, the rapid development of PropTech in the UK is not only the outcome of a favorable business environment but also the product of a comprehensive, long-term, and clearly defined innovation policy approach grounded in modern theories of market shaping and productivity in the digital economy.

3.2. Key Policy Support Mechanisms

The UK government provides not only financial support but also institutional and data infrastructure to promote experimentation, collaboration, and innovation. These policies can be grouped into five main categories:

Open data policies: Since 2015, the HM Land Registry has operated the Digital Land Platform, offering public access to cadastral data, planning permissions, property prices, and land use information via APIs. This platform has attracted over 250 million visits, with an average of 1.4 million data queries per month (HM Land Registry, 2023). Nationwide data standardization and digitization are essential prerequisites for the emergence of data-driven startups.

Regulatory Sandbox: The Financial Conduct Authority (FCA) has operated a sandbox model since 2016, allowing startups to test new business models in a flexible but supervised legal environment. By the end of 2022, over 100 PropTech and PropFinTech firms had participated, with a post-sandbox commercialization success rate of around 67% (FCA, 2022). Test cases include blockchain-based asset transactions, smart leases, crowdfunding platforms, and peer-to-peer rental models.

Smart Grants for Innovation: Through Innovate UK, the government offers R&D grants ranging from £25,000 to £2 million per project in digital real estate. In 2022 alone, PropTech-related projects received over £48 million, supporting more than 70 early-stage companies (Innovate UK, 2023).

Triple Helix Collaboration: The government promotes partnerships among businesses, research institutions, and local authorities to foster PropTech aligned with smart city development. Innovation intermediaries such as Connected Places Catapult and Future Cities Catapult provide experimental infrastructure and integrated data platforms.

PropFinTech Development Support: The FCA and the UK Treasury have authorized the piloting of over 35 digital real estate finance models, including tokenized ownership, smart leasing, and blockchain-based tenant identification (CB Insights, 2023).

3.3. Achievements and Remaining Challenges

The UK's comprehensive and directive PropTech policy framework has yielded several positive outcomes, both in terms of operational metrics and international recognition. According to the UK Office for National Statistics (ONS, 2023), the average time to complete a residential property transaction dropped from 22 days to 17 days between 2018 and 2022, largely due to the use of digital transaction platforms, real-time data analytics, and optimized legal verification processes. This reduction plays a crucial role in enhancing market liquidity and lowering administrative costs and legal risks for both buyers and sellers. In the commercial real estate sector, smart building technologies, especially IoT sensors, energy consumption analytics software, and AI-based predictive maintenance which have helped reduce operational costs by 12-15% depending on asset type (JLL UK, 2022). For example, the British Property Federation (2023) reports that buildings equipped with smart sensors reduced electricity usage by an average of 18% and cut routine maintenance costs by nearly 30%, thanks to early fault detection and repair process automation. From an investment perspective, 68% of real estate investors in the UK had adopted PropTech tools for transactions, management, or market analytics by

2022, significantly higher than the EU average of 41% (Deloitte Real Estate Tech Radar, 2023). The report also shows that more than 50% of surveyed investors had shifted part of their capital toward technologies like blockchain, AI-driven valuation, and automated leasing platforms, rather than focusing solely on traditional physical assets. This indicates that PropTech is no longer a peripheral trend but has become a core component of long-term growth strategies for leading real estate corporations.

However, alongside the achievements, there remain several significant challenges that must be addressed to ensure the sustainable and comprehensive development of PropTech in the UK in the coming period.

First, the issue of data fragmentation and lack of standardization poses a considerable barrier. Although the open data system has been implemented at the central level, the degree of digitization and data interoperability across local authorities varies greatly. According to UK PropTech Association (2022), only about 57% of local councils in the UK are capable of sharing land, planning, and construction data in formats compatible with national API standards. This leads to a situation of "data fiefdoms," making it difficult to build unified analytical platforms.

Second, there is a growing concern over data privacy and personal information security, especially as PropTech companies increasingly use AI to analyze user behavior, purchasing patterns, and credit profiles. This raises the need for strict compliance with the EU's General Data Protection Regulation (GDPR), as well as significant investments in cybersecurity infrastructure and legal compliance capabilities. According to a PwC UK (2022) survey, nearly 60% of PropTech startups struggle to fully meet data security requirements, particularly those operating business models involving tenant data, behavioral tracking, and transaction history.

Third, the current legal framework lags behind the advancement of emerging technologies such as blockchain and smart contracts. Although the sandbox mechanism has enabled experimentation with decentralized real estate transaction models, there is still no formal legislation that clearly defines the legal validity of real estate transactions conducted via blockchain platforms. This legal ambiguity creates uncertainty over property rights in the case of disputes, causing institutional investors, banks, and notaries to remain cautious about integrating new PropTech platforms into their official business procedures.

IV. THE CURRENT SITUATION AND DEVELOPMENT POTENTIAL OF PROPTech IN VIETNAM

4.1. Current State of Development

In recent years, Vietnam's PropTech market has shown clear signs of movement, reflecting the diffusion of the digital transformation wave into the real estate sector. Although a comprehensive ecosystem has yet to form, as seen in more developed countries, some local startups have emerged as pioneering players. These include platforms such as Rever (technology-integrated brokerage model), Propzy (O2O real estate transactions combining legal, financial, and tech services), Houze (smart building management and rental), MeeyLand (real estate data and digital planning maps), and DatXanhHomes (the digital sales platform of Dat Xanh Group). According to the Vietnam Digital Transformation Report 2023 by NIC and Do Ventures, by the end of 2022, there were approximately 40 to 50 PropTech companies actively operating in Vietnam, with a total investment value of less than USD 15 million, a modest figure. These startups primarily focus on "surface-level" segments such as online listings, brokerage platforms, and CRM integration, while more advanced areas like AI valuation, blockchain-based transactions, or IoT asset management remain largely absent.

One of the greatest obstacles to PropTech development in Vietnam is the absence of a dedicated public policy framework to support innovation in real estate technology. Currently, there is no legal sandbox program that allows real estate startups to test digital business models such as asset tokenization, decentralized transactions, or peer-to-peer rental platforms. Existing R&D funding programs (mostly under the Ministry of Science and Technology) are still heavily skewed towards industrial, agricultural, and medical technologies, with no specific mechanisms to encourage PropTech innovation or operational model reform in real estate markets. Data infrastructure regarded as the "foundation" for PropTech solutions, also faces major limitations. According to the Ministry of Natural Resources and Environment (2023), about 80% of land and planning data in Vietnam has not been fully digitized; much of it still exists in paper format, fragmented and inconsistently integrated across provinces. Urban planning maps are publicly accessible only in major cities like Ho Chi Minh City, Hanoi, and Da Nang, while most localities still rely on manual data retrieval. Moreover,

the data is not standardized in format, lacks API compatibility, and does not meet international open data standards like those in the UK.

In addition, the current legal framework is not flexible enough to accommodate new business models in PropTech, particularly those related to financial services, public asset management via software, or blockchain-based real estate transactions. For instance, short-term rental platforms such as Airbnb still lack clear regulatory mechanisms; land registration is still manually processed in many areas; and e-contracts for real estate transactions are not fully legally recognized, creating hesitation among both businesses and consumers. Another significant challenge is the limited availability of specialized technological talent in real estate. According to the Vietnam IT Market Report (TopDev, 2022), fewer than 3% of software engineers in Vietnam have experience working with geospatial data, blockchain technologies, or IoT-integrated systems, technological pillars of modern PropTech.

4.2. Future Development Potential

Although Vietnam's PropTech ecosystem remains in its early stages and faces numerous institutional, technical, and data-related barriers, its development potential is widely recognized as extremely promising. In fact, Vietnam currently possesses a combination of favorable conditions, "right timing, right place, right people" to enter a breakthrough phase, much like what FinTech experienced over the past 5 to 7 years.

First, Vietnam's real estate market is expanding rapidly, creating strong demand for digitalization and optimization in transaction, management, and investment processes. According to Statista (2024), the total market value of Vietnam's real estate sector is expected to reach nearly USD 40 billion by 2025, with housing, hospitality, and industrial real estate segments all growing at an average annual rate of 8 - 10%. In this context, technological tools such as online transaction platforms, AI-based asset valuation, smart asset management systems, and big data analytics can play a decisive role in shortening transaction times, increasing transparency, and improving capital efficiency.

Second, rapid urbanization and growing urban management pressures are opening vast opportunities for PropTech applications. According to the Ministry of Construction (2022), Vietnam's urbanization rate is expected to reach approximately 45% by 2030, equating to over 50 million residents living in urban areas. Pressures related to housing, infrastructure, planning, and public asset management are increasing rapidly in major cities like Ho Chi Minh City, Hanoi, Da Nang, Binh Duong, and Hai Phong. In this context, technological solutions such as IoT-based building operations, digital planning maps, real-time infrastructure monitoring platforms, and AI applications for forecasting residential, mobility, and infrastructure demand are becoming "key enablers" toward smart, efficient, and livable urban environments.

Third, a key pillar supporting the positive outlook for PropTech in Vietnam is the national digital transformation policy. With the issuance of Decision No. 749/QĐ-TTg in 2020, the Vietnamese government set the goal of building a "digital government, digital economy, and digital society" by 2030. Within that framework, real estate, which is characterized by high-value assets, multi-step processes, and fragmented data, is seen as a priority sector for full digitalization. If key agencies such as the Ministry of Construction, the Ministry of Natural Resources and Environment, the General Department of Taxation, and local departments coordinate efforts to standardize real estate data, open APIs for land - planning - registration data, and establish a flexible legal framework, PropTech could become a "tipping point" in modernizing and increasing transparency in Vietnam's real estate market.

Lastly, growing interest from venture capital funds, particularly international ones which is worth noting. According to Do Ventures & NIC (2023), PropTech is currently among the top six technology sectors attracting foreign investor interest in Vietnam, trailing only behind EdTech, FinTech, and HealthTech. Prominent business models receiving attention include open planning map platforms, AI-based property valuation, decentralized real estate transactions, and asset tokenization. Although the scale of investment remains modest, "smart money" has begun to recognize PropTech as a promising market in Vietnam, something that was virtually unheard of five years ago.

4.3. Applicability of UK Policies to Vietnam

Adopting the UK's PropTech policy model in Vietnam is not overly ambitious; in fact, it is entirely feasible if adjusted appropriately to suit the local levels of infrastructure, institutional maturity, and market readiness. The UK's policy experience serves not only as a developed-country reference model but also as a philosophical approach, where the state does not stand apart from the technology market but takes an active role in creating an innovation ecosystem and legal framework that guides the real estate technology sector toward purposeful development. Based on Vietnam's current conditions, four key policy groups from the UK can be considered for adaptation:

First, open real estate data policy is a foundational pillar for any PropTech initiative. In the UK, the government developed the Digital Land platform, a public system that provides access to land-use planning, cadastral records, transaction data, and building permits via open APIs. This model enables companies such as Zoopla, LandTech, and SearchLand to develop investment analytics tools and automate brokerage services. In contrast, Vietnam's land and planning data remains severely fragmented. According to the Ministry of Natural Resources and Environment (2023), only about 28% of district-level administrative units have publicly accessible digital planning maps, mostly image files without APIs or standardized formats. The national land data system is still scattered across provincial land registration offices and is internally integrated only with limited third-party access. Vietnamese platforms such as MeeyMap and Dat Xanh Maps must collect and digitize data from unofficial sources, increasing costs and undermining transparency. Therefore, adopting the UK's model is not only feasible but essential, especially as Vietnam's National Digital Transformation Program is underway and the Land Law 2024 (effective 2025) mandates the digitalization of cadastral records. The government should establish a national land and planning data platform, standardize formats, and provide controlled open API access for tech companies.

Second, the legal sandbox policy for testing new business models is one of the UK's major innovation successes. The UK's Financial Conduct Authority (FCA) launched its sandbox in 2015 (initially for FinTech and later expanded to PropTech in 2018). Companies such as Coadjute (blockchain-based real estate transactions) and CrowdProperty (crowdfunded property development) were allowed to pilot their services in a supervised, flexible legal environment. The model allows businesses to operate under legal exemptions to assess real-world risks. In Vietnam, digital rental contracts, blockchain-based registration, and tokenized real estate platforms (like Realbox.io) still lack clear legal frameworks and risk being labeled as unauthorized fundraising or virtual asset ownership. Although a FinTech sandbox draft was introduced by the State Bank in 2020, PropTech has not been included. Given its lower risk profile compared to finance, PropTech deserves inclusion in priority pilot groups, particularly in new urban areas such as Thu Duc City, Ecopark, or Ha Long Marina, which already have urban data foundations and high demand for digital services.

Third, R&D support policies specific to PropTech. In the UK, innovation stimulus packages provide up to £500 million per year through Innovate UK, with construction and real estate accounting for nearly 10%. Businesses can submit proposals for AI, IoT, or blockchain-based products and receive funding for up to 70% of project costs if feasibility and transfer value are proven. In Vietnam, Do Ventures (2023) reports that fewer than 5% of PropTech startups have ever accessed state funding due to the lack of specific industry classifications, technical peer reviewers, and slow application processes. Furthermore, Vietnam's research ecosystem remains disconnected from the market: universities lack PropTech-focused programs, and businesses cannot invest in core R&D. Therefore, a specialized R&D funding program, possibly based at the National Innovation Center or jointly managed by the Ministry of Science and Technology and the Ministry of Construction is both viable and necessary. Initial priorities should include developing open planning map technology, AI-based valuation tools, and ESG-aligned smart building management systems.

Fourth, the triple-helix cooperation model among government, universities, and businesses is currently underdeveloped in Vietnam but holds great potential. In the UK, universities such as UCL, Oxford Brookes, and Imperial College host real estate technology research centers where PropTech companies can test applications, share data with local authorities, and co-develop talent. In Vietnam, although real estate programs exist at institutions such as the University of Economics Ho Chi Minh City (UFM), NEU, and Hanoi Architectural University, most do not incorporate technology into their curricula or provide practical labs for product development. Vietnam could learn from the UK's Catapult Labs model by establishing "PropTech Labs" at leading universities connected directly to businesses and urban authorities to pilot tech solutions such as automated permit systems, digital HOA fee

management, or public asset mapping. In summary, UK policy experiences are not merely reference points but can be practically applied in Vietnam, provided they are adapted to local capacities by sector and region. Instead of nationwide implementation, Vietnam should prioritize policy pilots in key urban centers such as Ho Chi Minh City, Hanoi, and Da Nang, while also crafting a national PropTech strategy with a vision toward 2030. A cohesive ecosystem, built on open data, supervised experimentation, innovation funding, and academic collaboration, will serve as the foundation for Vietnam's transition from a traditional real estate model to one that is smarter, more transparent, and more sustainable.

V. CONCLUSION

The development of PropTech in Vietnam is at a critical juncture. While the current ecosystem remains nascent and fragmented, the country possesses a convergence of favorable conditions, including rapid urbanization, strong market growth, a national digital transformation agenda, and increasing interest from global investors that can propel it toward a more mature and impactful stage of real estate technological innovation. However, unlocking this potential requires a deliberate and strategic policy approach. The experience of the United Kingdom demonstrates that the emergence of a vibrant PropTech ecosystem is not solely the result of market forces but also the outcome of proactive, mission-oriented public policy. Key pillars such as open real estate data platforms, regulatory sandboxes, targeted R&D funding, and the institutionalization of triple-helix cooperation between government, academia, and industry have proven to be essential catalysts for innovation. For Vietnam, the adaptation of these policies is not only feasible but timely, especially in light of the upcoming implementation of the 2024 Land Law and the country's broader commitment to digital governance. The success of PropTech will depend on the government's ability to create enabling infrastructure, reduce regulatory uncertainty, and incentivize collaborative experimentation. At the same time, private enterprises and universities must play an active role in translating these policy frameworks into real-world applications and technological capabilities. In conclusion, Vietnam's transition from traditional to smart and sustainable real estate markets requires the establishment of a supportive PropTech ecosystem that is transparent, innovative, and inclusive. By learning from the UK's experience and tailoring policies to local conditions, Vietnam can not only catch up with global PropTech trends but also become a leading example of digital transformation in emerging real estate markets.

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