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The Growing Influence of Technology in the Field of Real Estate

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India's real estate market has grown unprecedentedly in the past few years, and technology adoption in the industry has played a significant role in its growth. In the past, looking for a property in India's enormous real estate market required a lot of effort and time. However, technology has brought about several revolutionary advancements. Thanks to technological improvements, the real estate sector has entered a digital era of efficiency, convenience, and customer satisfaction. Technological developments have improved the overall client experience in addition to streamlining procedures. Technology has changed how people look for properties and the construction process. Building information modelling (BIM) technology enables project planning and visualisation to be done precisely, saving money and minimising errors. Builders may now effectively manage building projects and spot possible problems using drones for surveys and real-time project monitoring. This research paper examines how technology has significantly impacted the real estate market, increasing efficiency, improving the overall customer experience, and helping buyers and sellers. It also analyses the most recent technological developments that impact the real estate market.

Keywords: *real estate, technology, virtual reality, artificial intelligence, digitalisation, streamlining.*

INTRODUCTION

Technology is transforming almost every industry in the modern digital age, and the real estate market is no exception. The introduction of emerging technologies such as blockchain, big data, virtual reality, artificial intelligence, and the Internet of Things (IoT) is changing how we engage with, buy, and sell real estate.¹ We stand on the brink of a technological revolution that will fundamentally alter how we live, work, and relate to one another. The transformation will be unlike anything humankind has experienced in its scale, scope, and complexity. With the help of these technologies, the real estate market is now more accessible, transparent, and lucrative than ever. In the modern era, Gen-Z and Millennials analyse the same online before rushing to buy a home or flat. The National Association of Realtors provides the following fascinating statistics about real estate: 44% of recent homeowners research homes for sale online before they buy. In 2022, 73% of consumers shopped with a smartphone or tablet.²

Technological developments have significantly changed the real estate market, especially when digital transformation is a top priority for companies' plans. The digital real estate market has radically changed how stakeholders interact with each other and with the real estate market. However, negotiating with different parties and transferring properties can be challenging due to insufficient knowledge, complicated procedures, and abundant documentation.

Since their inception, emerging technologies such as artificial intelligence, blockchain, and virtual reality have revolutionised and influenced the real estate sector³. Thanks to technological advances in virtual and augmented reality, it is now possible to create immersive virtual property viewings that give buyers an accurate impression of the properties. The real estate industry is taking advantage of the latest technological developments.

¹ Nasimuddin Sarkar et al., 'Study of Indian Real Estate Market from Developer's Perspective' (2020) 8(6) International Journal of Creative Research Thoughts <<https://ijcrt.org/papers/IJCRT2006375.pdf>> accessed 15 March 2025

² Dr. Bhartendu Kr. Chaturvedi and Ayush Sharma, 'Anticipating and Gearing up Real Estate Sector in India' (2015) 4(5) International Journal of Business and Management Invention <[https://ijbmi.org/papers/Vol\(4\)5/B045011016.pdf](https://ijbmi.org/papers/Vol(4)5/B045011016.pdf)> accessed 15 March 2025

³ Nida Naeem et al., 'Digital Real Estate: A Review Of The Technologies And Tools Transforming The Industry And Society' (2023) 1 Smart Construction and Sustainable Cities <<https://link.springer.com/article/10.1007/s44268-023-00016-0>> accessed 15 March 2025

The digital revolution of the real estate sector has made digital technologies and decision-making tools indispensable, encouraging creative approaches to purchasing, maintaining, and managing real estate. The increasing availability of digital real estate resources has benefited consumers, builders, planners, analysts, and establishments. Real estate data must be accessible to all parties making educated decisions, including brokers, buyers, sellers, and financial institutions.

RESEARCH OBJECTIVES

1. To produce a comprehensive presentation of every important technology, now or shortly, by industry leaders in the international real estate market.
2. To decide the primary benefits of using technology in the digital estate area.
3. To analyse the various legal aspects and implications of different elements of digital real estate that are emerging in the industry.
4. To determine the elements that encourage and hinder the adoption of technology.

ASSUMPTIONS

It is presumed that the reader is a reasonably knowledgeable person who occasionally uses a desktop computer, tablet, or mobile device for work but who doesn't have to be an IT expert. It is also believed that public corporations lead the real estate sector in terms of innovation and technology. Both public and private businesses in the US are in an excellent position to use technology to get the most value for their money. Additionally, this study assumes that those who stand to gain the most from real estate innovation, such as employees, tenants, or customers, are aware of and conversant with technology to some degree.

Eventually, organisations are rational in the sense that they aim to maximise the effectiveness and productivity of the capital that is utilised. Therefore, if the advantages of technical innovation outweigh the costs within the chosen time horizon, a sensible organisation would want to implement it. Costs and benefits, in this case, shouldn't be interpreted strictly in terms of money. Instead, they are regarded holistically, giving equal weight to non-financial,

intangible factors like staff well-being and customer experience that may indirectly affect profitability.

RESEARCH METHODOLOGY

The theoretical foundations of FM are based on academic literature, primarily composed of textbooks and online academic resources. The most recent research has been consulted whenever feasible. Crucially, though, regardless of the publication date, this research has provided a clear preference for the writings of authors most commonly referenced and recognised as authorities in their domain.⁴ This, of course, is predicated on the idea that such previous work is still applicable today as it was before.

The maximum up-to-date and pertinent content can be observed online, even when discussing technology. Previously, most net research could have focused on utilising search engines like Google and experimenting with diverse keywords. Although finding pertinent content material is useful, social media sites like LinkedIn and Twitter are even more powerful at handing over relevant content. By doing this, a researcher can find beneficial content material on the net that might not have been optimised for research purposes.

Secondary studies using quantitative methods were not included for two main reasons:

First, context and depth were needed, given the nature of the research topics. They believed that the depth and quality of the data were more valuable than the number of participants.

Second, objectively assessing the criteria by which participants' responses were measured is challenging because some form of value judgment is always required. Rather, a descriptive description is preferred, with mechanics covered just to the degree necessary to help the reader comprehend the relevant technology.

LITERATURE REVIEW

Adopting a literature review as the research method is mandated by the first research question. Professionals in real estate have always been mobile, and they always will be. This implies that individuals may require constant access to essential information, regardless of

⁴ Olli Kytömäk, *Digitalization and innovation in the real estate and facility management sectors - an ecosystem perspective* (KTH Royal Institute of Technology 2023)

location, perhaps more than others. Additionally, when millennials enter the market as professionals and consumers, their innate need to access information quickly necessitates using mobile devices. For several reasons, an organised literature review is chosen in this instance.

Initially, the review should encompass a significant amount of the body of information because the purpose is to distinguish digitalisation as an occurrence from the body of existing knowledge. This is performed by merging material from multiple databases across time and using various search keywords. A comprehensive search was chosen to discover the relevant literature under these criteria (Grant and Booth 2009; Cooper 1988)⁵.

Furthermore, given the volume of articles on the subject, a systematic literature review based on early database searches was a viable strategy. Additionally, no review could have covered the study issue in the existing literature, either generally or in the current literature review publications. Fourth, since the number of research articles grows yearly, there is a greater demand for structural synthesis.

Lastly, and perhaps most importantly, Yoo (2010) highlights a significant chance that study findings will go unrecognised by academics in other domains, particularly given the conceptual disarray of digitalisation research.⁶ This is especially important in the built environment industry, where there is a great deal of diversity across several management specialities. Consequently, according to Torracco (2005), the literature review was comprehensive by nature, synthesising multiple streams of literature on innovation and digitalisation across multiple management disciplines.⁷

RESEARCH QUESTIONS

The three primary questions that revolve around this study are as follows:

⁵ Dale Warburton, 'The role of technology in the real estate industry' (Masters Theses, University of Cape Town 2016)

⁶ Youngjin Yoo, 'The New Organizing Logic of Digital Innovation: An Agenda for Information Systems Research' (2010) 21(4) Information Research System <<https://doi.org/10.1287/isre.1100.0322>> accessed 15 March 2025

⁷ Yemin Miao, 'Literature Review Of The Research On Real Estate Financial Risk' (2019) 7(2) Open Journal of Business and Management <<https://doi.org/10.4236/ojbm.2019.72060>> accessed 15 March 2025

1. What are the essential technology factors adopted in the marketplace for real estate, and what are the impacts of such factors?
2. What impact do augment and virtual reality have on the real estate market?
3. Does technology act as leverage in the real estate market, helping it achieve its best values?
4. What are the various legal aspects that arise from the adoption of technology in the industry of real estate industry and its impact on the market?

ANALYSIS

Impact of Technology -

Technology has brought about a new era of convenience, efficiency, and improved client experience in the real estate industry. These advancements, made possible by cutting-edge technologies, have fundamentally changed how real estate is valued, purchased, sold, and managed.⁸ The Internet is rapidly displacing standard lead sources in the real estate industry. This is why the frantic rush created a real estate website that streamlines the work processes of agencies and agents.

The real estate business has undergone a major change due to technological advancements, making it more convenient, efficient, and user-friendly. Zillow Group is the best example of this transformation as it offers AI-enabled 3D Home tours, making it easy for potential customers to view homes virtually, which translates into more listing views and activity.⁹ In 2023, Zillow accounted for 226 million average monthly unique users via its mobile apps and websites, showing the increasing dependence on online platforms to search for homes.

Another prominent example is CoStar Group's acquisition of Matterport in April 2024 for \$1.6 billion to merge Matterport's 3D virtual tour technology into CoStar's platforms to provide immersive property experiences.¹⁰ Research has established that houses with online virtual tours can obtain closing prices at least 2% above houses without virtual tours.

⁸ *Ibid*

⁹ *Ibid*

¹⁰ 'CoStar Group to Acquire Matterport, the Global Leader in Immersive 3D Digital Twins and Artificial Intelligence for the Real Estate Industry That Makes Properties Intuitive and Interactive Online' (Costar Group, 22 April 2024) <<https://investors.costargroup.com/news-releases/news-release-details/costar-group-acquire-matterport-global-leader-immersive-3d>> accessed 15 March 2025

Furthermore, about 40% of millennials are okay with buying homes online with no physical tours, which also shows a direction towards online real estate transactions. Also, the sector is utilising video game technology to produce photo-realistic 3D property renderings such that clients can explore homes virtually before actual construction. Overall, these advances improve client experiences and facilitate simplified property transactions.

According to Forbes, internet websites are consumers' initial call source when looking for information or doing house searches. Users also make use of well-known social media sites like Instagram and Facebook. In addition to web information offerings, the National Association of Realtors is experimenting with mobile devices for many purposes, including customer communication. The real estate industry is among the first to see the effects of augmented and virtual reality. Prospective buyers and investors can now tour a home virtually and interactively without ever leaving the office, thanks to advancements in immersive technology. Users can digitally explore, examine, and visualise homes and buildings using virtual reality (VR) and augmented reality (AR) headgear and smartphone apps. This option can save buyers and sellers significant time and money compared to typical property viewings.

Artificial Intelligence: Artificial intelligence is a major technical innovation revolutionising the real estate sector. Artificial intelligence assists with decision-making, automates several operations, and gives information on real-time market trends. With the help of AI algorithms, real estate professionals can make well-informed investment decisions by analysing enormous volumes of data to find trends and forecast property values. AI has completely transformed the real estate market, altering how buyers are directed to properties and how they are discovered.¹¹

AI-driven algorithms filter through piles of data on consumer preferences, geographical context, and property attributes to give personalised real estate recommendations. Consumers can ask questions and receive assistance with their property searches by interacting with chatbots and virtual agents powered by artificial intelligence. Intelligent automation makes life easier for customers and helps them choose properties more wisely.

¹¹ Mohd Lizam, 'Digital Technology And The Real Estate Industry' (2019) 9(2) Sinergi Jurnal Ilmiah Ilmu Manajemen <<http://dx.doi.org/10.25139/sng.v9i2.1811>> accessed 15 March 2025

Blockchain Technology and IOT: Real estate transactions are incorporated with blockchain technology, which is praised for its transparency and security. Smart contracts built on blockchain platforms streamline contract execution by removing the need for middlemen and boosting productivity. Property transactions are enabled efficiently and streamlined, and an immutable and decentralised ledger is kept.¹² Equivalent parties can meet on the premises, engage in peer-to-peer transactions using a smart contract, and exchange currencies utilising a blockchain. Blockchain makes it possible to reduce the possibility of fraud and increase consumer confidence.

Internet of Things (IoT): The idea of smart homes has been strengthened by the Internet of Things (IoT), which has made it possible to create networked ecosystems in which different appliances and gadgets are connected to the Internet. With this technology, homes become networked hubs that can be controlled by voice commands or a smartphone to control the lighting, temperature, and security. Not only does it improve convenience, but it also considerably increases a home's market value.

Additionally, smart homes support sustainability in the environment. Smart home technology allows homeowners to optimise energy efficiency, increase security, and improve comfort, all from a distance.¹³ IoT-enable thermostats, smart lighting controls, and doorbell cameras are some devices that can lower expenses and increase a home's appeal. Smart home technology is a critical selling point for modern homebuyers. As time passes, smart home automation is anticipated to be a significant development in real estate technology, combining eco-friendliness, security and comfort for today's buyers.

BENEFITS OF TECHNOLOGY

Businesses are gathering and evaluating enormous databases to gain insight into consumer preferences, industry trends, and investment opportunities. By examining historical market activity, investors and developers can more accurately predict future trends with predictive analytics. These data-driven techniques help businesses make better investment, pricing, and marketing decisions.¹⁴ Technology is a key player in today's real estate industry, with the

¹² Ioannis Karamitsos et al., 'Design Of The Blockchain Smart Contract: A Use Case For Real Estate' (2018) 9(3) Journal of Information Security <<http://dx.doi.org/10.4236/jis.2018.93013>> accessed 15 March 2025

¹³ *Ibid*

¹⁴ Tingting Wu, 'Analysis of Financing Plan for Real Estate Development Project' (2019) 7(3) Open Journal of Business and Management <<https://doi.org/10.4236/ojbm.2019.73092>> accessed 15 March 2025

ability to maximise market results and property values. Real estate agents now have access to enormous databases that include client preferences, market trends, property values, and demographic changes due to the widespread use of sophisticated data analytics technologies.

By utilising a data-driven approach, decision-makers may maximise the intrinsic value of assets by gaining deeper insights and making more accurate and informed strategic choices. In addition, the emergence of digital marketing platforms has completely changed how real estate is marketed and sold. This is because it allows for more focused outreach to a broader audience and the delivery of customised messages that appeal to potential tenants or buyers. Virtual reality (VR) and augmented reality (AR) are examples of immersive technologies that allow prospective purchasers to virtually and thoroughly inspect homes without the need to visit them physically.¹⁵ This increases the perceived value of homes while saving time and money by offering an engaging and dynamic viewing experience.

Additionally, the property management sector has undergone a substantial metamorphosis due to integrating modern facilities and software solutions that streamline operations, automate tedious tasks, and increase efficiency. By minimising risks and optimising asset performance, these solutions safeguard and raise the value of real estate for landlords and property managers. They cover everything from managing maintenance and collecting rent to communicating with tenants and using predictive analytics. Blockchain technology has made real estate transactions more reliable and efficient. It has also created new avenues for secure and transparent transactions utilising smart contracts.

Furthermore, applying artificial intelligence (AI) algorithms and predictive analytics has made it possible for investors to anticipate future market moves with a level of accuracy never before. This enables them to identify profitable investment possibilities and adjust their strategies ahead of time to optimise profits. By using these technological innovations and adapting to shifting market dynamics, real estate industry players can create new opportunities to get the best potential property values, grasp new opportunities, and deftly overcome challenges.

¹⁵ Naeem (n 3)

Technology integration has several benefits that are becoming clearer for consumers and real estate brokers. One of the main advantages of technology developments in the real estate sector is increased transaction efficiency. Electronic platforms and internet technologies have increased the ease of purchasing, leasing, and selling a house. Online platforms make uploading and retrieving listings for available properties easy and quick, eliminating the need for paperwork and complex manual processes.¹⁶ Electronic signatures and digital paperwork expedite the online real estate transaction closing procedure. Artificially intelligent (AI) chatbots and virtual assistants aid clients in locating new homes and provide prompt replies to their inquiries. In addition, suggestions for available properties based on their preferences and behaviour may provide guests with a more personalised and pleasurable stay.¹⁷

Technology has significantly improved transparency and security in real estate transactions. Blockchain technology, for instance, reduces the likelihood of fraud by guaranteeing the traceability and immutability of property data. Blockchain technology enables legally binding digital agreements called smart contracts, which trigger automatic financial transfers based on predetermined conditions.

VIRTUAL REALITY AND AUGMENTED REALITY

How property is viewed and experienced in the real estate sector has completely transformed due to virtual reality. It makes the experience of virtual reality more interesting and interactive through property tours, which are available to potential buyers. Virtual reality provides a more realistic experience through the tours, and the buyers evaluate the property layers and determine the space at their convenience by sitting in their own homes.

Furthermore, it saves the buyers time and money on their travel, simplifies the process, removes the pointless steps, and creates more customer satisfaction. In the real estate sector, augmented reality has provided developers and buyers with an enhanced ability to display properties with enhanced visuals and customisation. With the use of AR and VR technology,

¹⁶ Fahim Ullah, 'A Systematic Review of Smart Real Estate Technology: Drivers of, and Barriers to, the Use of Digital Disruptive Technologies and Online Platforms' (2018) 10(9) Sustainability <<https://doi.org/10.3390/su10093142>> accessed 15 March 2025

¹⁷ Pavel Obod, 'Riding the Wave of Real Estate and PropTech in 2025: Top Technology Trends to Watch' (Sloboda-Studio, 02 October 2024) <<https://sloboda-studio.com/blog/real-estate-trends/>> accessed 15 March 2025

real estate developers can present their houses in a creative way that lures potential buyers and provides them with the ability to alter furniture placement, room dimensions, interior, and layouts. This freedom of customisation gives buyers a more detailed understanding of a property's potential and increases their likelihood of purchasing. Multi-user and remote collaboration has been facilitated by integrating VR and AR into real estate. Geographically dispersed buyers, traders, and manufacturers can now participate in real-time virtual meetings and property walks. With their ability to attract a global audience of buyers and investors, real estate developers now have access to a broader market and, therefore, can advertise properties to a wider audience, creating an opportunity to sell, which is great. The real estate sales cycle is being revolutionized by VR and AR because they accelerate the selection-making process.

These technologies expedite effective tests and contrast by supplying capacity customers with comprehensive digital domestic excursions. As a result, clients can shorten the typical sales cycle by making more knowledgeable decisions. Both builders and customers profit from decreased holding prices and quicker market time for new properties. Furthermore, the combination of blockchain generation and AR-powered smart contracts can significantly expedite the shopping procedure by eliminating middlemen and enhancing transaction protection.¹⁸ By providing access to advanced data insights and analytics, AR-AR reality technology empowers real estate agents. Agents can gain insights into consumer preferences, interactions, and patterns by analysing VR/AR system user behaviour¹⁹.

Higher conversion rates and more efficient lead generation result from this data-driven system, enabling personalised, targeted marketing campaigns and AI-powered algorithms used to forecast demand patterns and monitor buyer dynamics, specifically for real estate brokers. Potential buyers can also help deliver properties. Therefore, the real estate market has entered a new era of participatory meetings and a shift in traditional strategies due to increased virtual and augmented reality. These innovations include personalised visualisation and virtual property navigation, simplifying real estate buying and selling. Consumers have been empowered and are more knowledgeable about their potential

¹⁸ Ewan MacLeod, 'The mobile revolution is changing how we work' (*Mobile Industry Review*, 27 March 2015) <<https://www.mobileindustryreview.com/mobile-revolution-changing-work/>> accessed 15 March 2025

¹⁹ Dimitri Akhrin, 'Real Estate Prospecting Tips In The Digital Age' (*Small Business*, 24 February 2024) <<https://www.forbes.com/sites/forbesbusinesscouncil/2021/02/24/Real-Estate-Prospecting-Tips-In-The-Digital-Age/?Sh=79b56c7f5360>> accessed 15 March 2025

investments, benefiting real estate agents and developers by increasing their marketability and productivity.

LEGAL IMPLICATIONS OF TECHNOLOGY IN THE INDUSTRY

In India, the real estate sector is going through a profound transformation, undermined by emerging technologies, and it has transformed the traditional methods with its advancements. Some examples of technological factors are smart contracts, virtual reality house tours, and blockchain, which are creating history by stepping forward in the digital era. However, these are also subject to various legal implications concerning data security and privacy.

1. Blockchain: It provides transparent and secure transactions that render a title verification and property maintenance record. In India, the Digital India Land Records Modernisation Programme attempts to implement the concept of blockchain into the land management system. This, in return, reduces the possibility of unlawful transactions and makes it more secure.

2. E-Stamping: This is an intricate aspect of technology and real estate concerning the process of registration. E-stamping has transformed India's real estate market by bringing payment of non-judicial stamp duty into the digital era, increasing efficiency, and cutting fraud. The technology fits the purposes of the Indian Registration Act 1908,²⁰ which regulates the registration of documents to validate their genuineness and deter fraudulent transactions.

With electronic certificates replacing physical paper stamps, e-stamping makes property transactions simpler, safer, and more transparent. There has been a lot of debate in recent years regarding its effectiveness and validity. Still, due to its convincing nature of efficiency, it has been considered time-saving and convenient. However, any instrument made digitally has limitations as it is not completely secure due to the unlawful or counterfeiting factor of obtaining an e-stamp.

3. Smart Contract: A digital contract is just like any other contract, which automatically creates the terms and conditions of the contract. Smart contracts are self-executing digital

²⁰ Sakshi Priya, 'THE EVOLUTION OF CONTRACTS: EMBRACING E-CONTRACTS IN THE DIGITAL ERA' (Manupatra, 29 October 2024) <<https://articles.manupatra.com/article-details/THE-EVOLUTION-OF-CONTRACTS-EMBRACING-E-CONTRACTS-IN-THE-DIGITAL-ERA>> accessed 15 March 2025

contracts based on pre-established terms programmed through blockchain technology. As per Section 10 of the Indian Contract Act 1872,²¹ a contract is enforceable when made by free consent of competent parties for a lawful consideration and a lawful object. Smart contracts, by fulfilling these aspects, can be termed legally valid.

The Information Technology Act 2000 also supports this stance. Section 10A²² specifically states that contracts will not be held unenforceable merely because communication and acceptance took place electronically. Furthermore, digital signatures and electronic records are accepted as legally admissible under Sections 3 and 4,²³ read with the Indian Evidence Act 1872.

Judicial rulings have also recognised electronic contracts as being valid. The Supreme Court in *Trimex International FZE Ltd. v Vedanta Aluminium Ltd. (2010)*²⁴ ruled that an email-based contract is binding legally if key elements of a contract are met. Similarly, in *Tamil Nadu Organic Pvt. Ltd. & Ors. v State Bank of India (2014)*²⁵, the Madras High Court validated that electronic documents and digital signatures are valid under Indian law.

4. Data Privacy: Blockchain improves security, but it also makes personal data protection more problematic. The Digital Personal Data Protection Bill 2023²⁶ in India is anticipated to solve these issues will be solved by enforcing strict data protection regulations and individual rights.

5. Cloud Computing: It allows real estate brokers to operate remotely. This is emerging in the real estate industry due to its easy access to the domain functioning since it does not require a person to acquire a particular software or configuration. It involves sharing information digitally with an unauthorised third party whose identity is restricted online.²⁷ At the same time, there is currently no law to empower such crime, which makes it more difficult to trust the source of real estate agents.

²¹ Indian Contract Act 1872, s 10

²² Information Technology Act 2000, s 10(A)

²³ Information Technology Act 2000, s 4

²⁴ *Trimex International FZE Ltd. v Vedanta Aluminum Ltd* (2010) 3 SCC 1

²⁵ *Tamil Nadu Organic Private Ltd. v State Bank of India* (2017) IBCLaw 75 HC

²⁶ Digital Personal Data Protection Act 2023

²⁷ Rashmi Rani Anand, 'ISSUES AND CHALLENGES OF REAL ESTATE SECTOR WITH SPECIAL REFERENCE TO HOUSING: A CASE STUDY OF URBAN INDIA' (2022) 8(2) *Journal of Global Resources* <[10.46587/JGR.2022.v08i02.008](https://doi.org/10.46587/JGR.2022.v08i02.008)> accessed 15 March 2025

6. Meta-verse: The Primary legal implication is the legality of real estate, which is present in the meta-verse as the rights related to property. Unlike the physical world, ownership can be appropriately established through documents, title deeds, contracts, etc. Still, in the meta-verse, the ownership is entirely through digital assets or properties, which Non-Fungible Tokens represent, and these can be acquired through tokens. Still, the authenticity of digital assets cannot be traced in fraudulent transactions. There are no guiding principles or laws that govern this, and due to the difficulty in enforcing such digital contracts, it is hard to execute them.

COMPARATIVE STUDY

The real estate industry is driven by information and is particularly information-intensive. Recently, as housing costs continue to climb, the real estate sector has progressively become more significant to the growth of the American economy. The US and China account for 42% of the world's real estate value. With 21% of the world's real estate worth, China has more real estate market assets than any other nation, just ahead of the United States, Japan, the UK, India, Germany, France, Brazil, Italy, and Russia complete the top 10, representing 28% of all real estate assets worldwide. Based on figures from the China Bureau of Statistics, the GDP of China's real estate sector was 7.18% in 2020.

Concurrently, the abrupt pandemic of 2021 led to a reduction in development investment in the real estate sector worldwide. The China Bureau of Statistics reports that development investment decreased by 6.4% in July 2022 compared to January 2022. Many other nations face circumstances similar to China's, and not just because of the epidemic's effects. Since 1985, the money supply in Japan has decreased, along with a decline in house sales due to the discount rate. Incomplete data indicates that Japan's home sales decreased by 15.2% in 2020; similarly, the real estate market is experiencing a decline in most other countries.

The global economies of all countries depend heavily on the real estate industry. Industry made up 11.13% of the total economic output in the US. 11.4% of the GDP of Australia's capital cities came from the real estate sector²⁸. From 2011 to 2014, Malaysia's real estate sector added 4.2% to the country's GDP. Approximately 7% of India's GDP and many jobs are generated by the real estate industry, which has a big impact. These figures show how vital

²⁸ *Ibid*

the real estate industry is to global wealth and how much it contributes to the GDP of numerous countries.²⁹

CONCLUSION

This paper explores the phenomenon of digitalisation in the context of the real estate industry. The paper aims to increase the understanding of the phenomenon, particularly by distinguishing the phenomenon in the existing research and by generating new knowledge on digitalisation in the field using an explorative approach. For this purpose, the thesis contains a structured literature review and two research papers covering the objectives.

By separating the literature on innovation and digitalisation, the thesis advances studies regarding innovation in the building maintenance phase. Although the subject has been briefly discussed in other literature review articles, this study incorporates research from several building maintenance phase managerial sub-disciplines and from technically and managerially oriented literature streams. As a result, it offers a comprehensive perspective on industry studies on innovation and digitalisation. However, developing a deeper understanding of the phenomenon will remain difficult in the future because of the dispersed nature of the research. The real estate industry's players face both possibilities and risks from digitalisation.

The degree to which these players can protect their current companies from new potential rivals and launch new ventures in response to industry initiatives from the busiest real estate companies and other players is still to be seen. Digitalisation offers improved services for building users and renters, as well as resource efficiency. As a result, this analysis adds to the discussions on innovation and digitisation in property, real estate, and facilities management in several ways. The integration of innovation and digitalisation views in an organised literature review builds upon previous review studies. Additionally, it presents the most often-used terms in the literature and offers descriptive statistics on the historical foundations of the phenomena.

²⁹ Jinyang Cong, 'Comparative Analysis of the Real Estate Market in Different Countries' (2023) 19 Highlights in Business, Economics and Management
<<https://pdfs.semanticscholar.org/c300/2d4d193a54cc5389484576ef3ccc39d16ac8.pdf>> accessed 15 March 2025

Finally, it categorises the prevailing viewpoints on digitalisation in each discussion and highlights the key arguments surrounding innovation and digitalisation. These analyses lead to the discussion of various research gaps.³⁰ Lastly, it makes the case for studying innovation and digitalisation from a sociotechnical standpoint.

³⁰ Amit Kumar Sinha, 'An Overview on the Indian Real Estate Sector' (2020) 7(4) International Research Journal of Engineering and Technology <<https://www.irjet.net/archives/V7/i4/IRJET-V7I4903.pdf>> accessed 15 March 2025