

# PropTech Thesis

## Digitizing the Real Estate Value Chain

### PropTech Industry Overview

Property technology, or “PropTech”, refers to the application of technology to the development, buying or selling, and management of physical real estate by both people and businesses. By digitizing these processes, PropTech increases efficiency and decreases the costs & time spent on real estate transactions, benefiting value chain stakeholders such as developers, investors, and asset managers.

### Market Size

VC PropTech investment totaled [\\$23.8 billion](#) in 2020 and [\\$32 billion in 2021](#), before falling again to [\\$19.8 billion in 2022](#). The global PropTech market size is anticipated to reach [\\$94.0B](#) by 2030, growing at a CAGR of 15.8% from 2022 to 2030. Growth in the market is expected to be driven by the software segment, which held the largest market share in 2022.

### PropTech Market Trends

- **Valuations and Round Sizes Normalizing:** PropTech VC investments totaled [\\$1.7 billion in Q1 23](#), compared to the [\\$7.4 billion invested in Q1 22](#). Despite a significant decrease in the dollar amount, the number of deals in Q1 2023 was about the same as Q1 2022, indicating that the pace of investment remains steady but round sizes and valuations are declining. As investment scales back, it creates an opportunity for PropTech investors to get into well priced deals for category defining startups that will capture more market share if they survive.
- **Proliferation of Big Data, AI/ML and IoT:** Rapid advancements in technology, such as artificial intelligence (AI), machine learning, Internet of Things (IoT), and blockchain, are enabling innovative solutions in the real estate industry by improving efficiency, automation, data analysis, and creating new business models. Virtual tours, which were rapidly adopted due to COVID, will become even more popular and advanced with the introduction of AR/VR technology.
- **Smart Homes Gaining Popularity:** By 2025, smart homes are expected to account for [21% of the housing market](#). With the [\\$478 billion IoT market](#) growing at a 26.4% CAGR and millennial homeowners accounting for 43% of the housing market, the world is moving towards a status quo where people can control aspects of their house from a mobile device.
- **Real Estate Executives Spending More on Technology:** In 2023, between [40-50%](#) of global commercial real estate executives are planning to increase their tech budgets, with the highest percentage (48%) in North America. Despite the slight differences between regions, this is a clear signal that enterprise spending on PropTech is poised to increase.
- **A Growing PropTech Workforce:** According to a survey, [38%](#) of PropTech CEOs surveyed in the first half of 2022 planning to hire between 6 and 20 full-time employees in the next 12 months.
- **Increasing Urbanization:** Increasing urbanization worldwide has led to a higher demand for housing, office spaces, and infrastructure. PropTech solutions are addressing the challenges associated with urban development, including efficient property management, smart cities, and sustainable buildings.
- **High Demand for ESG Insights:** [27%](#) of annual CO2 emissions come from building operations and [20%](#) come from construction, but only [7%](#) of real estate executives use ESG data in their investment framework. With increased focus on ESG regulations, real estate firms may turn to PropTech to track and improve their ecological footprints.

### Challenges and Headwinds

- **Increasing Interest Rates and Inflation:** Many real estate stakeholders are concerned about how inflation and interest rates will impact their 2023 revenue, with 48% of industry leaders expecting revenue to decrease. Concerns about revenue and profitability create an opportunity for tech-enabled businesses that can prove clear ROI to their customers.
- **Challenging Public Market Performance:** As a result of public market volatility and interest rate hikes, publicly traded PropTech companies experienced an extremely challenging 2022, with the Houlihan Lokey PropTech index down 27% YoY. Well known public companies such as Compass and Lendingtree were down 74% and 83% YoY, respectively.
- **Regulatory Actions:** Evolving regulatory frameworks, including The Inflation Reduction Act, created new incentives to reduce energy costs which will dictate and influence how real estate investors develop and invest. This will require new solutions and technologies that help stakeholders measure ESG impacts and drive decision-making.

## PropTech Jobs to Be Done

Across the real estate value chain, from development to asset management, there are unique and crucial tasks and processes that present an opportunity for tech-enabled businesses and software to improve efficiency and reduce costs. The following diagram covers some of the jobs to be done in the real estate industry, highlighting areas of disruption for PropTech.

### Development & Construction

Real estate development and construction involves a multitude of jobs that are essential for the successful realization of projects. At the forefront, the **real estate developer** plays a crucial role in identifying and acquiring properties for development, conducting feasibility studies, securing financing, and overseeing the entire project. **Project managers** are responsible for coordinating all aspects of construction, from budgeting and scheduling to procurement and subcontractor coordination. **Architects** provide the design and planning expertise, ensuring that the buildings' layouts, structures, and aesthetics align with client specifications and regulatory requirements. **Civil engineers** handle the infrastructure and site development aspects, including roads, drainage systems, utilities, and grading. **Construction managers** supervise on-site activities, managing labor, materials, quality control, and safety protocols. Other roles include surveyors, building inspectors, and consultants, who work with the aforementioned professionals to successfully execute real estate development and construction projects.

### Transactions (Buying, Selling, and Investing)

In the realm of real estate buying and selling, a range of jobs exist to facilitate smooth transactions and provide professional assistance to buyers and sellers. **Realtors** are instrumental in representing clients in property transactions. They assist buyers in finding suitable properties, negotiate offers, and guide them through the purchase process. For sellers, real estate agents market their properties, conduct showings, and negotiate deals on their behalf. **Real estate brokers** manage brokerage firms, oversee agents, and ensure compliance with regulations. **Mortgage loan officers** help buyers navigate the financing process, evaluating their financial situation, guiding them through the loan application, and facilitating loan approvals. **Title companies** conduct title searches, examine property records, and issue title insurance policies to ensure the legitimacy of property ownership. **Real estate attorneys** provide legal counsel and representation, draft contracts, and ensure compliance with laws and regulations. Additionally, **real estate marketing specialists** develop marketing strategies, create promotional materials, manage online listings, and implement advertising campaigns to attract potential buyers. These diverse roles in real estate buying and selling contribute to the efficient and successful completion of property transactions.

### Asset Management

Real estate asset management involves the strategic management and optimization of real estate portfolios to maximize their value and performance. In this field, various jobs contribute to effective asset management. **Asset managers** oversee the overall performance of real estate portfolios, making decisions on acquisitions, dispositions, and portfolio strategies. They conduct financial analysis, monitor market trends, and develop investment strategies to ensure optimal returns on investment. **Property managers** handle the day-to-day operations of properties within the portfolio, including tenant management, rent collection, lease administration, and maintenance coordination. **Financial analysts** provide insights into the financial performance of properties, conduct valuation analysis, and make recommendations for asset optimization. **Lease administrators** manage lease agreements, ensure compliance, and handle lease negotiations and renewals. **Real estate appraisers** evaluate the value of properties within the portfolio to assess their worth and support investment decisions. These roles collectively ensure the optimization of portfolios, maximizing returns, and mitigating risks.

## B2B Market Map

Based on the jobs to be done framework outlined above, the following market maps showcases a non-exhaustive cohort of startups introducing B2B software to streamline processes across the industry. See logos for company websites and appendix for company descriptions.

### PROPERTY DEVELOPMENT

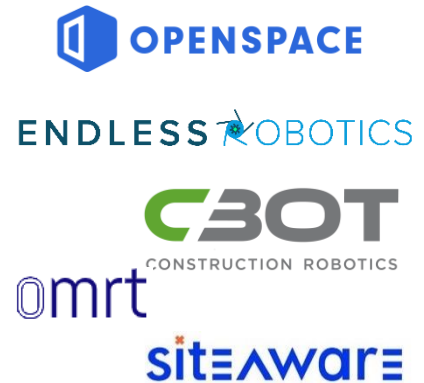
#### Risk Mitigation & Payments



#### Project & Task Management



#### Design & Construction



### TRANSACTIONS

#### Data, Valuation, & Analytics



#### Buying & Selling



#### Lending & Financing



### ASSET MANAGEMENT

#### Listing & Leasing Services



#### Building Intelligence



#### Property Management



## Appendix: Company Overviews from Market Map

### Property Development

#### Risk Mitigation

- **BuildSafe** helps construction companies to increase the quality and security of their projects - while saving both time and money. Build Safe makes security a competitive advantage in the construction industry.
- **eMOD** is a proactive and collaborative construction safety platform. It's cloud-based digital platform allows organizations to manage, track, and comply with environmental, health, and safety regulations.
- **FinalCad** provides a construction management application and software. It helps contractors, architects, and owners to perform in synchronicity, build quality projects and manage risk through solutions providing progress reports, defect management, quality controls, and analytics.
- **Billy** is an electronic invoicing and e-factoring platform through which small and medium-sized entrepreneurs can invoice operation quickly, easily and for free. It allows access to financing through discounted bills.
- **Human Condition Safety** aims to change the construction industry through wearable safety tech, artificial intelligence and BIM.
- **Einsite** builds internet-of-things technology to make the construction and mining industries smarter. It helps to improve productivity, efficiency, and safety at construction, mining, and other industrial sites.

#### Project & Task Management:

- **Construct** is a communication platform for teams on construction projects. Construct is a web and mobile application that helps Brazilian construction companies be more efficient by centralizing job site information and communication.
- **Buildplane** is a project management software for commercial construction projects. The company's software tracks document requests, manages change orders, handles subcontractor billing and payments, and requests for quotes and pricing. It offers both a mobile and desktop version of the product.
- **LetsBuild** provides digital solutions covering the construction phase with on-site planning and progress communication and on-site follow-up communication. The platform helps teams to plan and track projects both on and off-site.
- **OpCenter** helps architects, engineers, construction managers (AECs) and project owners to orchestrate the flow of precise, time sensitive project-critical information.
- **Vertuoza** provides construction software for building contractors. It develops construction management and monitoring software for SMEs in the construction sector. Its platform allows businesses to focus on the essentials of their job and can edit quotes, work planning, site monitoring, invoicing, and more.

#### Design & Construction

- **Openspace** uses patented artificial intelligence to automatically create navigable, 360-degree representations of any physical space. Builders attach a small camera to their hardhats and walk through a site as normal, with OpenSpace passively capturing imagery in the background and it creates a visual representation of the site similar in style to Google Street View.
- **Endless Robotics** offers robotic solutions for applying paints and coatings in construction and industrial applications to ensure superior efficiency, safer work environments, reduced costs and precise consistency.
- **CBOT** develops automation solutions for the construction industry with the goal of increasing the productivity and profitability of customers and to reduce repetitive strain injuries in their staff. CBOT's first product is a machine for automatic tiling of large floors.
- **OMRT** builds a deep tech design platform for real estate development and its design tool optimizes buildings. Its platform offers a collection of architectural design, physics, finance and material modules that generates and analyzes building designs parametrically.
- **SiteAware** is a provider of Digital Construction Verification (DCV) solutions to minimize risk exposure in construction and increase productivity across diverse projects. SiteAware's turnkey DCV solution for the building's structure, shell, and interior works in the background during construction and requires no maintenance, training, or operation by the end user.

## Transactions

### Data Analysis

- **Betterview** offers a property intelligence and risk management platform. The company provides monitoring, property issues detection, automation flags, and other features. It also delivers wildfire, hurricane, and hail risk insights and a catastrophic (CAT) response system.
- **redIQ** provides brokers, acquisitions teams, lenders and appraisers with sophisticated data parsing and processing tools that enable them to extract vast troves of rent roll and operating data in seconds rather than hours
- **IdealSpot** specializes in software for the commercial real estate and retail industries. The platform searches, collates, parses, analyzes, and packages data from multiple sources and makes it actionable for customers to create a personalized map, analyze current locations and competitors' locations in order to make better decisions.
- **Cortex** develops software and analytics to improve the sustainability of commercial buildings.

### Buying & Selling

- **Dealpath** is a cloud-based real estate deal management platform. Investment and development firms can use Dealpath as their command center for smart pipeline tracking, deal analytics, and collaborative workflows to achieve optimal risk-adjusted returns.
- **LendInvest (LON: LINV)** operates as an asset management platform. It provides bridging loans, development finance, and buy-to-let mortgages for intermediaries, landlords, and developers across the United Kingdom.
- **Cadre** operates a data-centric investing platform. It offers predictive models and workflow tools that help users to invest in a diversified portfolio of properties in high-growth markets. It offers commercial real estate investing for individuals, advisors, and institutions.
- **Roofstock** runs an online marketplace where retail and institutional investors can buy and sell rental homes. It identifies local property managers to help new owners manage homes. It was founded in 2015 and is based in Oakland, California.

### Lending

- **CrediFi** provides detailed loan and asset information to the Commercial Real Estate Finance industry. Loan, asset, tenant, and owner details are compiled and presented in a clear interface built for strategic application to investment decisions.
- **CommLoan** is a commercial mortgage lending technology company that has created a marketplace to match commercial mortgage borrowers with the perfect loan product and features personal, concierge-style services.
- **LOANtuitive** operates as a commercial real estate lending platform. It allows mortgage brokers to securely collect, evaluate and place loan requests with lenders. The company was founded in 2020 and is based in Seattle, Washington.
- **Lendhaus** offers a global commercial real estate lending marketplace that speeds up the financing process from loan bid to loan settlement.
- **Plum** is transforming commercial real estate lending. Plum's breakthrough technology, designed by industry leaders, delivers swift, transparent financing.

## Asset Management

### Listing & Leasing Management

- **VTS** develops a commercial real estate asset management platform that unifies owners, operators, brokers, and tenants to capitalize on opportunities.
- **Truss** is a commercial real estate platform that helps small and medium businesses find available office space, providing an end-to-end service that walks tenants through the negotiation and lease signing process. With Truss, landlords can post listings and subleases at no cost, market vacant spaces directly to tens of thousands of tenants, and manage listings and transactions in one place via a cloud-based platform using their own lease documents.
- **Hightower** is a web-based leasing and asset management platform for the commercial property industry. Hightower helps owners and agents save time, increase returns, reduce risk in their portfolio, and manage their end-to-end leasing process.
- **Funnel Leasing** is a customer relationship management (CRM) and automation platform for multifamily owners and managers. It manages all renter-facing interactions, such as inquiries and renewals, in a connected platform.

### Building Intelligence:

- **CIM** offers advanced building analytics software for sustainable building operation. It creates analytics software for the operation of large buildings and its platform integrates building intelligence, machine learning and mechanical engineering with the aim of improving efficiency and sustainability across property portfolios. The company was founded in 2013 and is based in Sydney, New South Wales.
- **Resolute Building Intelligence** provides building-performance analytics and reporting software. The company is based in Pontiac, Michigan.
- **Embue** offers a building intelligence, monitoring, automation, and control solutions for multifamily apartment building portfolios that gives owners and managers visibility and control of every apartment, common space, and piece of equipment in the building. The platform provides end-to-end insight and control of the entire property, monitoring for resident discomfort and harmful conditions such as water leaks and high humidity.
- **SensorSuite** has developed a real-time building intelligence cloud platform for reducing operational risks and improving the performance and efficiency of buildings and real estate. The company has created leading-edge sensors, cloud analytics, building controls and software interfaces that reduce energy costs, increase occupant comfort and allow owners and occupants to extract more value out of their space.

### Property Management

- **Honest Buildings** is a software platform that focuses on bringing together building service providers, occupants, owners, and other stakeholders onto a single portal to exchange information, offerings, and needs. It helps users to find and connect with buildings, companies, and professionals for all commercial real estate needs. It was founded in 2012 and is based in New York, New York.
- **Avail's** online tools, education, and support help landlords find and screen tenants, create leases, collect rent online and more.
- **Ravti** develops software that digitizes HVAC equipment and activity for CRE properties. The company's software manages all HVAC maintenance programs, emergent repairs, scheduled repairs, capital replacement, and capital expenditure management.
- **ClickNotices** is a Software-as-a-Service (SaaS) provider of court filing and delinquency management services to the multifamily industry. The company's cloud-hosted platform and expert court agents offload the administrative burden of managing late rent.
- **HappyCo** is a property management platform that offers an inspection platform that is designed to inspect, monitor, and analyze the performance of real estate assets.