



EMERGING TECH RESEARCH

VERTICAL  
SNAPSHOT

# Real Estate Tech

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2021





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# Executive summary

The real estate technology sector is poised for renewed growth after a turbulent 2020. Even as the effects of the COVID-19 pandemic disrupted economic activity for many commercial assets, we also saw an acceleration in the adoption of new technologies. While large swaths of retail and office properties have experienced diminished activity since March 2020, an exodus of people from urban areas has created strong demand for housing in residential real estate and new expectations for the offices of the future. As vaccine distribution reaches its zenith later this year, many workers will return, though not all, and those that do will likely find the office enhanced with more tech-enabled convenience and safety measures. With more technology comes the ability to extract more data, allowing property managers to make informed financial and operational decisions about their assets while simultaneously creating more personalized experiences for tenants.

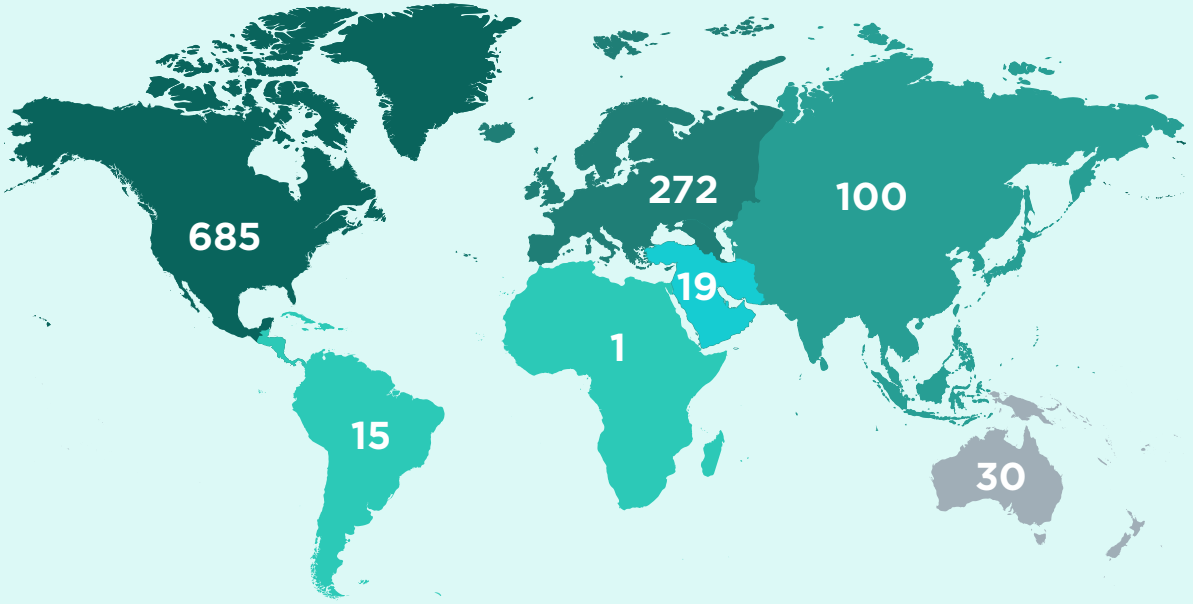
Real estate tech offers a substantial investment opportunity via a \$500 billion market encompassing commercial, residential, and construction startups. As capital invested in 2020 declined more than 50% compared to 2019, the pandemic forced even glacial tech adopters to rethink their digital strategy, creating tailwinds for solutions such as digital mortgage products, building analytics, and autonomous construction robots. For commercial operators in particular, a post-pandemic normal will necessitate a greater embrace of big data and investments into technology. This report explores innovation and disruption across each of the commercial, residential, and construction markets, as well as a visual depiction of the notable companies that are leading in their respective categories.

**Figure 1.**  
Real estate tech market size (\$B) by sector

2020	2021	2022	2023	2024	2025	CAGR
\$487.6	\$521.7	\$561.9	\$609.7	\$667.2	\$737.1	8.6%

Source: PitchBook | Geography: Global

### Company count breakdown by geography



<p><b>1,100+</b> companies</p>	<p><b>\$61.1B</b> of VC invested since 2010</p>
<p><b>3,300+</b> investors</p>	<p><b>2,600+</b> deals</p>

Source: PitchBook | Geography: Global | As of March 1, 2021



# Industry drivers & outlook

**An uptick in remote work has accelerated shifting patterns of migration.** As companies have been forced to embrace remote work during the pandemic, many workers across industries have opted to relocate to more rural and suburban locations. This appears to have accelerated demographic trends that were taking place before the pandemic, where many younger workers began to move out of cities in favor of more affordable locations, attracted by the pull of family and more space.<sup>1</sup> LinkedIn data from the US shows cities with a high cost of living such as New York, San Francisco, Chicago, and Boston were all among those that experienced the greatest exodus, while those cities with a lower cost of living such as Austin, Phoenix, Nashville, Tampa, and Jacksonville had the greatest influx of new residents.<sup>2</sup> The story is similar in Europe, where cities such as London, Dublin, Berlin, Madrid, and Milan all saw double-digit percentage decreases in population, with an astounding 41% of Londoners decamping for greener pastures, at least temporarily.<sup>3</sup>

**Remote work is here to stay, creating new demands from commercial office space.** Major companies such as Dropbox (NASDAQ: DBX), Facebook (NASDAQ: FB), Twitter (NYSE: TWTR), Infosys, Microsoft (NYSE: INFY), Salesforce (NYSE: CRM), and Spotify (NYSE: SPOT) have all announced permanent work-from-home options for some of, if not all, their employees.<sup>4</sup> The embrace of a hybrid workforce comes with an inevitable update to corporate property portfolios. Companies may no longer need a large campus for all their employees, but rather a central headquarters and a dispersed collection of flexible workspaces and co-working offices. This transformation will require the use of a more diverse portfolio of solutions such as owned space, standard leases, flexible leases, flex space,

coworking space, and remote work. According to a McKinsey report, office-space decision makers expect the percentage of time worked in main and satellite offices to decline by 12% and 9%, respectively, while flex office space will hold constant and work-from-home will increase compared to before the pandemic.<sup>5</sup>

**Housing supply set to grow in response to strong demand, economic policy, and a dissipating pandemic.** According to the market intelligence firm Atlos Research, only 468,000 homes were for sale in the US in the first couple months of 2021, roughly half the supply from that time last year.<sup>6</sup> Though demand-side conditions are favorable—namely migration-fueled demand and historically low interest rates—pandemic realities are clearly affecting supply-side conditions, preventing many homes from hitting the market. Notably, baby boomers make up an outsized share of existing homeowners, and government mortgage forbearance is still protecting 2.6 million homeowners from foreclosure, suggesting that a significant chunk of homes that would typically go on the market due to a forced sale have not. As vaccine distribution continues, older homeowners who were put off by the pandemic could begin to reconsider selling. Moreover, housing advocates insist that now is the time to build, citing the economic stimulus that homebuilding provides. According to the National Association of Homebuilders, building 1,000 average single-family homes creates 2,900 full-time jobs and generates \$111 million in taxes and fees for all levels of government.<sup>7</sup> The president of the National Housing Conference, David Dworkin, said major investment in housing construction is vital to jumpstarting the economy.<sup>8</sup>

1: "Flight to Suburbs Boosts US Homebuilding, but COVID-19 Surge Erodes Consumer Sentiment," Reuters, Lucia Mutikani, July 17, 2020.

2: "Covid Is Accelerating the Exodus From New York and California to Cheaper States," Bloomberg, Misyrlena Egkolfopoulou, December 14, 2020.

3: "The Pandemic Emptied Europe's Cities. What Will Bring People Back?" The New York Times, Megan Specia, February 11, 2021.

4: "23 Companies Switching to Long-Term Remote Work," flexjobs, Emily Courtney, February 19, 2021.

5: "Reimagining the Office and Work Life After COVID-19" McKinsey & Company, Brodie Boland, et al., June 8, 2020.

6: "Where Have All the Houses Gone?" The New York Times, Emily Badger and Quoc Trung Bui, February 26, 2021.

7: "Building 1,000 Homes Packs an Economic Punch" NAHB, April 3, 2020.

8: "How Biden's \$1.9T Stimulus Plan Impacts Housing," HousingWire, Tim Glaze, January 15, 2021.



## INDUSTRY DRIVERS & OUTLOOK

**Digitization in mortgage tech is finally expanding to the back office.** Though front-end mortgage solutions have become more commonplace, with companies such as Rocket Mortgage even appearing in Super Bowl ads, back-office mortgage solutions have remained woefully underpenetrated. The average mortgage underwriter can only process two to two-and-a-half loans each day, an amount that could be reasonably quadrupled through support technology such as document procurement, digital notarizations, and data connectivity tools.<sup>9</sup> Moreover, with millennials representing 37% of homebuyers in 2019, their consumer expectations demand a level of tech-enabled convenience and speed.<sup>10</sup> If the pandemic wasn't enough of a jolt, previously discussed pandemic migration and historically low interest rates means that companies stand a significant chance of missing out on transactions if they don't have their technology act together. With lending changing to consumer direct models and loan volumes reaching historic highs, processes are unlikely to go back to the way they were given the added convenience and productivity gained through technology.

**New housing initiatives poised to increase home affordability.** The US government has long relied on homeownership as a way for middle-income households to build wealth. At the same time, discriminatory zoning and lending policies have largely kept Black Americans from enjoying in the same wealth creation as their white counterparts. Proposals have so far included eliminating exclusionary local and state housing regulations, holding financial institutions accountable for discriminatory practices, and strengthening enforcement of the Fair Housing Act and the Community Reinvestment Act.<sup>11</sup> In his first days in office, President Biden extended the eviction and foreclosure moratoriums through the end of March 2021,

with additional extensions likely. One of his most notable proposals has been a first-time home buyer tax credit of up to \$15,000 that is both advanceable and refundable, allowing prospective home buyers to receive the credit at the time of purchase rather than having to wait until tax season. Affordable housing is also a key objective of the new administration, which will push for greater funding commitments to the Housing Trust Fund and the Low-Income Housing Tax Credit, both of which would support the construction and rehabilitation of affordable housing. Such policies should be a boon to the mortgage industry and for modular construction firms

**Alternative home financing startups are providing increasing options for “generation rent” to enter the housing market.** Millennials have often been referred to as “generation rent” given the various obstacles the generation has faced in pursuing homeownership—student loan burdens, delayed marriage, fallout from the global financial crisis (GFC), and increased deposit amounts required from lenders. According to *The Economist*, in 1990, a generation of baby-boomers, with a median age of 35, owned a third of America's real estate by value. In 2019, a similarly sized cohort of millennials, aged 31, owned just 4%.<sup>12</sup> The primary challenge to home ownership has typically been the inability to raise the capital needed for a deposit. One model that has arisen in response is “rent-to-own,” which allows home buyers to coinvest in a property with a startup, typically requiring a far smaller down payment of anywhere from 3% to 8% of the home's value. While some companies such as Flyhomes will provide an all-cash offer, improving the offers' chances of success, others handle the mortgage themselves. Residents are then required to pay “rent” for a term of about three years, which in part goes

9: “The Surprising Future of Mortgage Technology,” HousingWire, Joe Camerieri, October 6, 2020.

10: “2019 Home Buyers and Sellers Generational Trends Report,” National Association of REALTORS Research Group, April 2019.

11: “Biden Administration Brings a New Focus on Housing Policies,” The Washington Post, Michele Lerner, January 28, 2021.

12: “Home Ownership is the West's Biggest Economic-Policy Mistake,” *The Economist*, January 18th, 2020



## INDUSTRY DRIVERS & OUTLOOK

towards establishing equity in the home. At the end of their term, they can choose to buy the property, continue the term, or even walk away if deciding they don't like or want the home.

**Advancements in construction technology are improving speed and lowering costs for property developers.** The construction industry has long experienced stagnant productivity levels, with McKinsey reporting that the industry's annual productivity growth has only increased 1% over the past 20 years.<sup>13</sup> A combination of new technologies and improved processes in areas such as artificial intelligence, building information modeling software, robotics, 3D printing, and modular construction are helping drive the industry forward. The robotics space, in particular, has seen increased attention given widespread labor shortages. A new breed of autonomous construction robots can, in many cases, fully replace the work done by a human laborer, allowing companies to either save costs by using fewer workers or to reallocate their human capital to higher-order jobsite tasks. Modular construction, a process which sees large elements or even entire structures prefabricated on a factory floor before being shipped to the construction site, has also seen renewed life. A McKinsey report from June 2019 suggests that modular construction can speed construction timelines by as much as 50% while simultaneously reducing costs by 20%. Their analysis illustrates that modular construction could claim \$130 billion of the US and European construction markets by 2030, ultimately delivering cost savings of \$22 billion.<sup>14</sup> This broad portfolio of technologies is making a variety of real estate projects more cost-competitive and enabling real estate companies to execute on their building plans more quickly.

**Online shopping, partly spurred by COVID-19, is driving strong tailwinds for industrial space utilization.** E-commerce continues to see an explosion in adoption during the

pandemic, with up to 40% of consumers indicating that they will continue to purchase online even after the vaccines are rolled out.<sup>15</sup> According to Prologis Research, a combination of stronger e-commerce demand and higher inventory carry (to avoid supply chain disruption) may increase logistics demand by 400 million square feet over the next couple of years.<sup>16</sup>

**Greater technology investments are coming for commercial real estate (CRE) operators, but probably not immediately.** 82% of respondents to a recent Deloitte survey said they believed the pandemic exposed shortcomings in their organizations' digital capabilities.<sup>17</sup> Making these investments would improve operations by fostering a stronger connection with tenants, bolstering cybersecurity (including data privacy), and incorporating analytics to help make more confident data-backed operational decisions. Despite this understanding, the inertia of legacy systems and the aversion to the time and cost needed to change systems are still powerful forces. According to that same report, more than half of real estate firms worldwide expect no change or a decrease in their investment into technology this year.<sup>18</sup> An Ernst & Young report details a number of related reasons why property owners are delaying tech investments, citing integration challenges, competing priorities for executive time and investment dollars, a lack of in-house tech talent, and some ROI skepticism.<sup>19</sup>

**Pandemic is driving re-investment in office space.** With COVID-19 in mind, property owners will need to invest in a range of technologies to ensure protection from viruses, including smart building sensors, low-touch and voice-enabled tech, autonomous cleaning solutions, spatial intelligence and people-counting sensors, and touchless entry and elevators. Moreover, tenants and operators can be more discerning in how they design office spaces. Layouts will

13: "Reinventing Construction: A Route to Higher Productivity," McKinsey Global Institute, February 2017.

14: "Modular Construction: From Projects to Products," McKinsey & Company, Nick Bertram, et al., June 18, 2019

15: "Survey: US Consumer Sentiment During the Coronavirus Crisis," McKinsey, December 8, 2020.

16: "COVID-19 Special Report #5: Supply Chain Shifts Poised to Generate Substantial New Demand," Prologis, May 2020.

17: "2021 Commercial Real Estate Outlook," Deloitte, Jim Berry and Kathy Feucht, December 3, 2020.

18: Ibid.

19: "How Commercial Real Estate Firms Use Technology to Secure a Future," EY, Mark Grinis and Henry Stratton, October 2, 2020.



## INDUSTRY DRIVERS & OUTLOOK

likely change to incorporate more natural social distancing, giving workers more physical space (though perhaps with the trade-off of fewer guaranteed desks for hybrid workers). IoT offerings, which enable building automation for areas such as ventilation, lighting, security, and utilities, will see greater adoption, along with office analytics that track occupancy, movement, and temperature data to assist tenants in creating COVID-19-safe seating and making decisions about the use of office space.

**Tenant engagement and analytics represents the next great digital opportunity for CRE.** For CRE operators, the wealth of insights that come through engagement apps and supplementary analytics is proving to be a significant value generator. Metrics aggregated around clientele, service requests, and property usage help to predict lease renewals and inform lease retention strategies. A majority of CRE firms have an executive position dedicated to data strategy and governance, and on top of that, 45% of CRE teams are spending about 15% to 25% of their time managing and organizing data.<sup>20</sup> Executives hope to improve decision making and operating performance, as well as create a unique tenant experience. According to a Deloitte survey, 68% of respondents plan to somewhat or significantly increase data governance investments in people, processes, and technology. Moreover, 92% of respondents plan to maintain or increase their tenant experience-related technology investments.<sup>21</sup> With all this focus on data, companies are mindful of the implications of potential data breaches, making cybersecurity of greater importance as they decide how to navigate increased access with concerns over data safety and privacy.

**More consolidation likely as big players race to become one-stop shop for home buying and selling.** CoStar Group's (NASDAQ: CSGP) recent acquisition of real estate information portal Homesnap was another step in a continuing series of acquisitions from incumbents such as Zillow (NASDAQ: ZG), Redfin (NASDAQ: RDFN), and Compass that want to consolidate home buying and selling transactions in a single experience. In only a decade, these incumbents have already drastically changed the process of finding and selling a home through iBuyer business models that help to solve home equity and moving pain points. Still, large portions of the home buying flow such as mortgage origination, title insurance, and maintenance can still be disjointed and time consuming. Look for acquisitions to continue as larger incumbents seek to streamline the home ownership transaction process, keeping clients engaged for longer and improving margins.

**Real estate crowdfunding benefits both investors and developers by democratizing property investments.** With the passage of the Jumpstart Our Business Startups (JOBS) Act in 2012, the floodgates were opened for the raising of capital for new businesses online. In the years since, there has been a proliferation of crowdfunding platforms, a number of large investment raises, and even some participation from institutional capital. Though the pandemic certainly hampered activity in 2020, and led to some defaults, the long-term prospects of property crowdfunding are strong given that the space is still in its infancy and the fundamental value proposition remains strong. By enabling a greater number of investors to contribute at smaller capital amounts, firms have effectively raised the profile of real estate among investors while simultaneously enabling projects to receive funding more quickly. As the space recovers post-pandemic, look for frequent deal activity and increased fund sizes, more involvement from institutional capital, and maturation through consolidations.

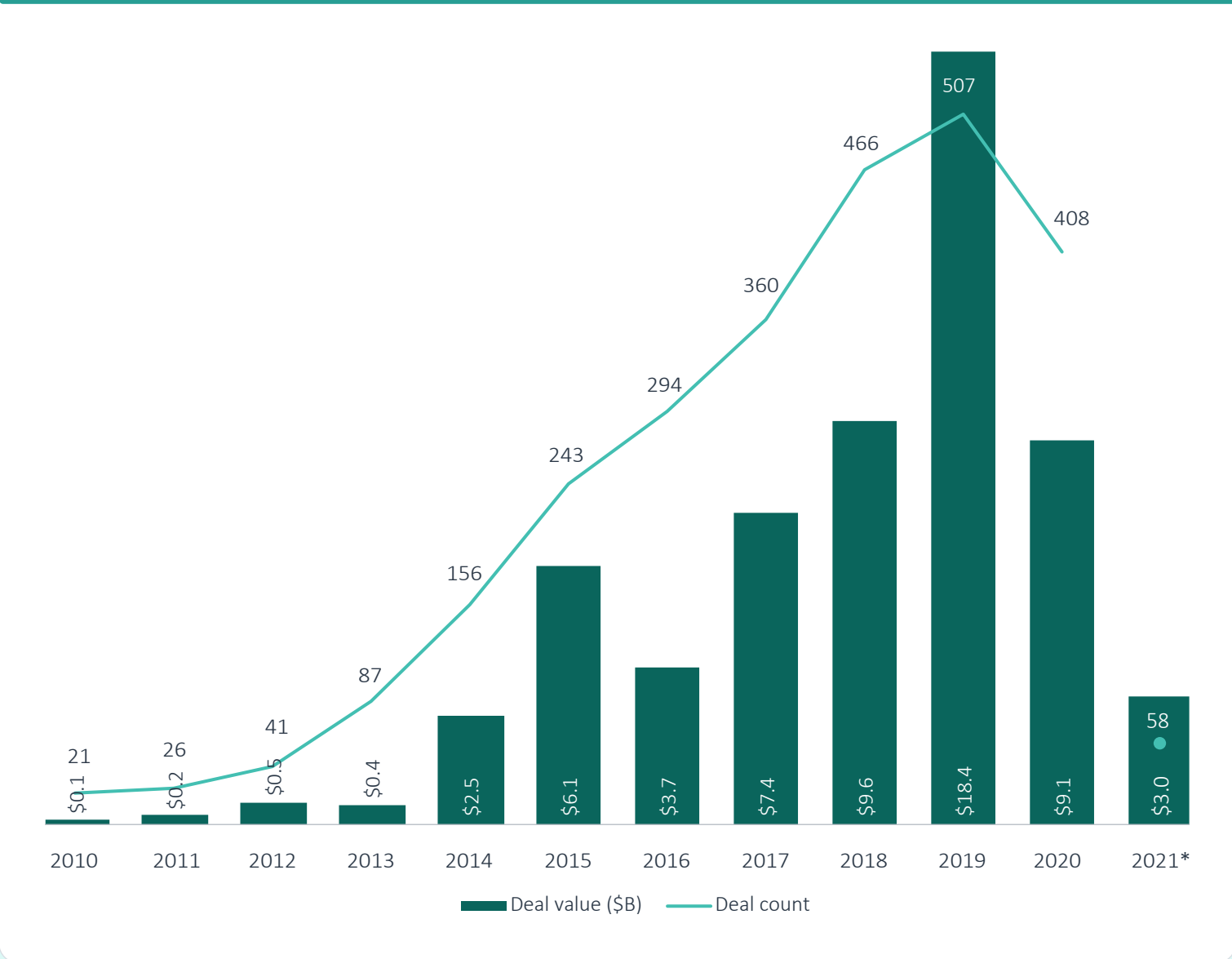
20: "How Will PropTech Shape the Future of the CRE Workforce?" GlobeSt, Lisa Brown, January 27, 2020.

21: "Real Estate Predictions 2020: Blending the Digital with the Physical to Augment Tenant Experience," Deloitte, Surabhi Kejriwal, 2020.



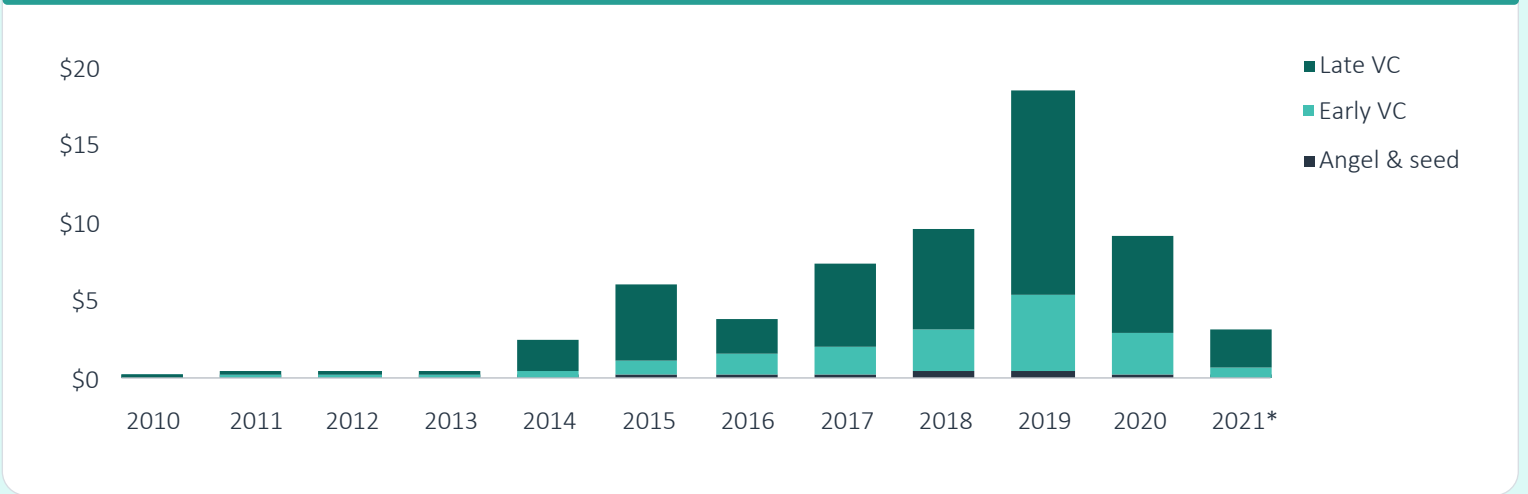
# VC activity

### Figure 3. REAL ESTATE TECH VC DEAL ACTIVITY



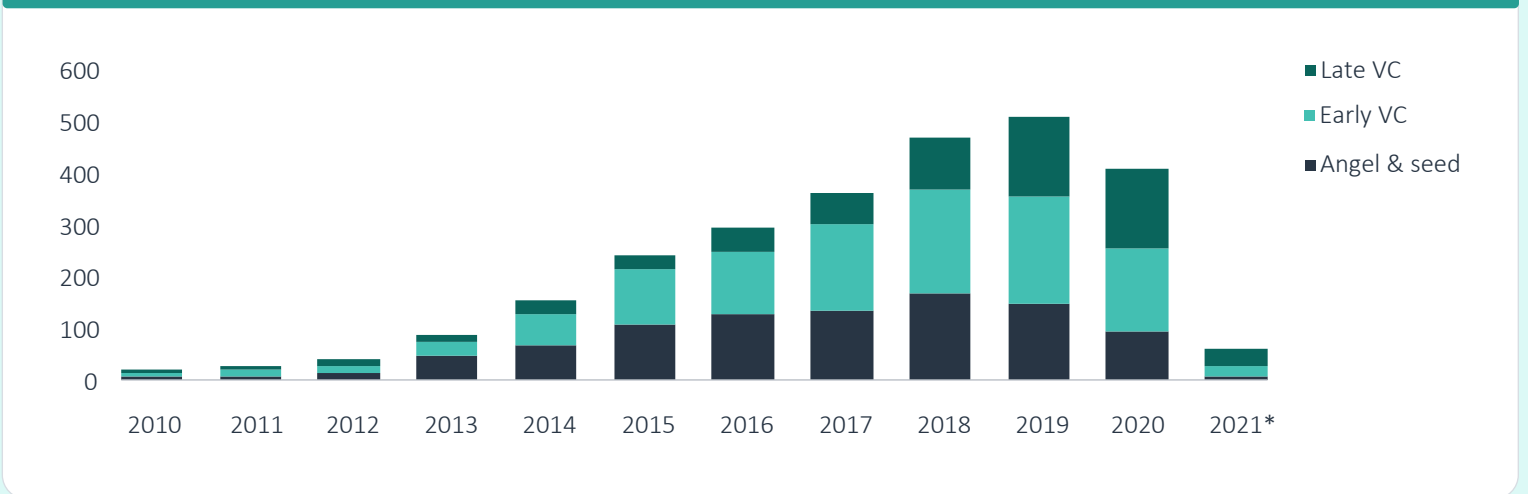
Source: PitchBook | Geography: Global | \*As of March 1, 2021

### Figure 4. REAL ESTATE TECH VC DEALS (\$B) BY STAGE



Source: PitchBook | Geography: Global | \*As of March 1, 2021

### Figure 5. REAL ESTATE TECH VC DEALS (#) BY STAGE



Source: PitchBook | Geography: Global | \*As of March 1, 2021





## VC ACTIVITY

Figure 6.  
Notable real estate tech VC deals

COMPANY	DEAL STAGE	DEAL SIZE (\$M)	CLOSE DATE	REGION	SUBSEGMENT
<b>Divvy Homes</b>	Series C	\$110.0	February 2, 2021	North America	Alternative home financing
<b>SmartRent</b>	Late-stage VC	\$96.1	February 11, 2021	North America	Residential tenant experience
<b>Rhino</b>	Series B	\$95.0	January 26, 2021	North America	Security deposit alternatives
<b>FLEXE</b>	Series C	\$80.0	January 5, 2021	North America	Industrial asset utilization
<b>Industrious</b>	Corporate	\$200.0	February 22, 2021	North America	Flexible workspace
<b>Getaway</b>	Series C	\$41.7	January 4, 2021	North America	Vacation stays
<b>FactoryOS</b>	Series B	\$55.0	November 20, 2020	North America	Modular construction
<b>Stanza Living</b>	Series C3	\$15.2	November 20, 2020	Asia	Residential accommodation
<b>Luko</b>	Series B	\$59.6	December 7, 2020	Europe	Home insurance
<b>Kodit.io</b>	Early-stage VC	\$117.7	October 29, 2020	Europe	Home buying & selling

Source: PitchBook | Geography: Global



# Real estate tech VC ecosystem market map

Click segments to view interactive market map

Market map is a representative overview of venture-backed or growth-stage providers in each segment. Companies listed have received VC or other notable private investments.

● Commercial ● Construction ● Residential

## Asset utilization

- Co-working & flexible workspace
  - kitt, wework, Kr Space, INDUSTRIOUS, COMMON GROUNDS WORKPLACE, breather
- Residential
  - ziroom自如, SONDER, CJIA.COM 链家, QUINTOANDAR, niido
- Co-living & home sharing
  - 共享游, colonies, Common, BUNGALOW, starcity
- Retail
  - CLOUD KITCHENS, appear [here], Uppercase, POP UP SHOPS
- Event space
  - SOHO HOUSE, convene, peerspace, bizly, SPLACER, BIRD OFFICE
- Industrial
  - shipmonk, FLEXE, ShipBob, W6 waresix, STORD

## Property management

- Residential tenant management
  - appfolio, vacasa, SmartRent, TURNKEY, Alfred, MYND
- Building operations, analytics & automation
  - BuildingEngines, LATCH, openpath, aquicore, COBALT, DRONE BASE
- Commercial tenant management
  - REALPAGE, sms assist, VTS, Envoy, proxy, HqO
- Security deposit alternatives
  - Rhino, LeaseLock, Jetty, theguarantors, Obligo

## Real estate transaction solutions

- Data & analytics
  - AltusGroup, reonomy, GEOPHY, apto, COMPSTAK, measurabl
- Agent tech & tools
  - RealConnex, bowery, biproxi, GROUNDBREAKER
- Marketing
  - buildout, IDEAMAKE, 旺川宝, unlatch, findspace
- CRE marketplaces
  - 好租, CREXi, TENANTBASE, 土流网 Tuli.com, YUNSPACE
- Finance & investment
  - Investment platforms: CADRE, Patch of Land, roofstock, PeerStreet, Juniper Square
  - Commercial lending & financing: MONEY 360, PLUM, SPRING GARDEN LENDING, TERAFUNDING, FUNDTHATFLIP



### \$22.58B

Total raised in asset utilization



### \$3.4B

Total raised in property management



### \$786.0M

Total raised in real estate transaction solutions (commercial)



### \$1.69B

Total raised in finance & investment



# Real estate tech VC ecosystem market map

Click segments to view interactive market map

Market map is a representative overview of venture-backed or growth-stage providers in each segment. Companies listed have received VC or other notable private investments.

● Commercial ● Construction ● Residential

## Construction

### Project management

PROCORE monday.com ANDPAD DOXEL FIELDWIRE

### Construction robots

BUILT ROBOTICS CANVAS DUSTY ROBOTICS DIAMOND AGE SafeAI

### Architecture, design & planning

Architizer URBAN FOOTPRINT REPLICA Foyr ENVELOPE

### Modular construction

KATERRA Veeva TopHat BOXBL CONXTECH

### Digital twins

CUPIX Disperse sensat VEERUM SiteAware

### 3D printed buildings

ikon MIGHTY BUILDINGS Branch apis cor

## Real estate transaction solutions

### Home buying & selling

COMPASS ribbon Offerpad knock

### Agent tech & tools

Matterport HouseCanary Qualia ojo PLACESTER

### Marketing

roomy ACTIVEPIPE Habiteo habx ListReports

### Data & analytics

remine CAPEANALYTICS Betterview zest.ai terabit

## Home renovations & improvements

houzz Thumbtack HOVER PRO.com taskeasy

## Finance

### Mortgage tech

FIGURE LANDBAY blend LendingHome credits

### Insurance

Hippo Policygenius Matic kin. luko



# \$3.87B

Total raised in construction



# \$5.07B

Total raised in real estate transaction solutions (residential)



# \$5.62B

Total raised in finance



# \$1.34B

Total raised in home renovations & improvements



# Key players

Figure 7.  
Key VC-backed real estate tech companies

COMPANY	SEGMENT	GROWTH THEME	PRODUCT FOCUS	TOTAL VC RAISED (\$M)*	LAST FINANCING DATE
SmartRent	Commercial	Property management	Building automation	\$201.7	February 11, 2021
Zumper	Commercial	Residential accommodation	Rental marketplace	\$143.7	March 10, 2020
WeWork	Commercial	Hybrid & remote work	Coworking & flex space	\$8369.9	August 14, 2020
FLEXE	Commercial	E-commerce	On-demand warehousing	\$141.7	January 5, 2021
Plum Lending	Commercial	CRE lending	CRE data & insights	\$29.5	April 1, 2020
Roofstock	Commercial	Real estate investing	Small family residences	\$133.3	January 8, 2020
Crowdstreet	Commercial	Real estate investing	Crowdfunding	\$24.9	November 6, 2019
bowery	Commercial	Transaction tools	Appraisal	\$24.9	October 4, 2019
Reonomy	Commercial	Data & analytics	Property intelligence	\$152.9	October 8, 2019
VTS	Commercial	Marketing	Leasing, asset management, marketing	\$177.7	May 3, 2019
Houzz	Residential	Home renovations & improvements	Marketplace	\$613.6	November 1, 2019
better	Residential	Mortgage tech	Mortgage POS software	\$415.0	December 22, 2020

Source: PitchBook | Geography: Global | \*As of March 1, 2021



## KEY PLAYERS

Figure 8.  
Key VC-backed real estate tech companies (cont.)

COMPANY	SEGMENT	GROWTH THEME	PRODUCT FOCUS	TOTAL VC RAISED (\$M)*	LAST FINANCING DATE
<b>Blend</b>	Residential	Mortgage tech	Digital mortgage lender	\$689.1	January 13, 2021
<b>Hippo</b>	Residential	Insurance	Homeowners insurance	\$709.5	November 24, 2020
<b>HouseCanary</b>	Residential	Transaction tools	Home valuation software	\$205.7	February 6, 2020
<b>Betterview</b>	Residential	Data & analytics	Property risk	\$17.4	June 3, 2020
<b>Ribbon</b>	Residential	Home buying & selling	Faster closing with cash offers	\$259.0	June 26, 2019
<b>Homesnap</b>	Residential	Home buying & selling	Property search	\$26.5	November 22, 2020
<b>roomy</b>	Residential	Marketing	AR/VR virtual staging	\$21.5	April 22, 2020
<b>Cupix</b>	Construction	Construction tech	Digital twin	\$17.2	December 22, 2020
<b>Built Robotics</b>	Construction	Construction tech	Autonomous construction robots	\$48.0	September 19, 2021
<b>Urban Footprint</b>	Construction	Construction tech	Architecture & design	\$18.6	February 24, 2020
<b>ICON Technology</b>	Construction	Construction tech	3D printed buildings	\$51.0	January 5, 2021
<b>Veev</b>	Construction	Construction tech	Modular construction	\$147.0	March 22, 2021

Source: PitchBook | Geography: Global | \*As of March 1, 2021



## KEY PLAYERS

Figure 9.  
Key real estate tech incumbents

COMPANY	SEGMENT	SUBSEGMENT	COMMENTARY	MARKET CAP (\$M)*	NOTABLE ACQUISITIONS
<b>Airbnb</b>	Residential	Short-term rental	Airbnb provides a platform to connect hosts and guests for the purpose of short-term stays and experiences.	\$120,391	Eliot And Me; Urbandoor; Gaest; Luckey Homes; Koko
<b>Rocket Companies Inc</b>	Residential	Mortgage tech	Rocket Companies is a holding company consisting of subsidiaries such as Rocket Mortgage, Rocket Homes, and Rocket Loans, among others. Their primary offering is through their mortgage origination business.	\$51,258	Amrock Title Insurance
<b>Compass</b>	Residential	Home buying & selling	Compass is a tech-enabled real estate brokerage providing a platform to support agents with the buying and selling workflow.	In IPO registration	Bold New York; Modus; Detectica; Contactually
<b>Opendoor</b>	Residential	Home buying & selling	Opendoor provides technology for residential real estate transactions, offering an on-demand, digital experience to buy and sell a home.	\$15,193	OS National; Open Listings; Memry Labs
<b>Porch</b>	Residential	Home renovation & improvements; insurance	Porch Group develops software for home service companies such as home inspectors, moving companies, real estate agencies, utility companies, and warranty companies, as well as a moving concierge service to homebuyers.	\$1,560	Iroofing; Palm Tech; V12 Data; Kandela; Serviz
<b>Purple Bricks</b>	Residential	Home buying & selling	Purplebricks Group PLC is a UK-based company engaged in the activities of estate agents and lettings business driven by a combination of professional local property experts, technology and customer facing software.	\$297	DuProprio
<b>Zillow</b>	Residential	Home buying & selling	Zillow offers a suite of services for the lifecycle of homeownership including buying, selling, renting, financing, and remodeling.	\$38,105	ShowingTime; New Home Feed; Naked Apartments; Dotloop
<b>AppFolio</b>	Commercial	Property management	AppFolio develops property management software with solutions for marketing, growth management, maintenance, staffing, accounting, and tenant engagement.	\$4,943	Dynasty.co; WegoWise; RentLinx; Renter's Friend; MyCase
<b>AltusGroup</b>	Commercial	Data & analytics	Altus Group provides software, data solutions, and advisory services to the commercial real estate industry, enabling their clients to analyze their real estate investments.	\$2,521	Argus Taliance; Waypoint
<b>Costar</b>	Commercial	Data & analytics	CoStar Group provides commercial real estate information, analytics, and online marketplaces, enabling their clients to understand commercial property values, market conditions, and current availabilities.	\$32,210	Homesnap; Ten-X; Emporis; Cozy; Realia

Source: PitchBook | Geography: Global | \*As of March 1, 2021



## KEY PLAYERS

**Figure 10.**  
**Key VC investors in real estate tech from 2016 to 2021\***

INVESTOR NAME	DEAL COUNT
Fifth Wall	44
MetaProp NYC	36
Khosla Ventures	35
500 Startups	31
Founders Fund	29
FJ Labs	27
Global Founders Capital	26
Moderne Ventures	26
8VC	25
NFX	25

Source: PitchBook | Geography: Global  
\*As of March 1, 2021

# Emerging technologies

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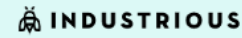




## REAL ESTATE TECH EMERGING TECHNOLOGY LANDSCAPE

**Asset utilization** | Startups leasing physical space for various use cases such as office space, retail shops, warehousing, events, and residential accommodation:

- 1 Co-working & flex space**  
Startups providing shared office space for people who are self-employed or working for different employers, as well as providing office space which can be modularized and adapted to meet a specific company's needs.
- 2 Co-living & home sharing**  
Startups providing shared accommodation for multiple adults in a single-family home or dormitory-style lodging.
- 3 Residential rentals**  
Startups providing services for the leasing of residential units such as apartments, vacation stays, and short-term rentals. Includes rental marketplaces.
- 4 Event space**  
Startups providing for the temporary rental of space for companies to host events.
- 5 Retail**  
Startups providing space for retail activities such as pop-up stores.
- 6 Industrial**  
Startups providing space for industrial activities such as logistics and warehousing.



**Property management** | Startups providing software and various other solutions to help landlords and property owners connect with their tenants and manage their building operations:

- 7 Commercial tenant management**  
Startups developing software to connect commercial property owners with their tenants.
- 8 Building operations, analytics & automation**  
Startups developing technology to assist building owners and operators in understanding the physical health and value of their property assets.
- 9 Residential tenant management**  
Startups developing software to assist residential landlords with engagement and management of their tenants.
- 10 Security deposit alternatives**  
Startups providing alternatives to traditional security deposits, which can hamstring cash-strapped renters with a significant up-front financial obligation.



**Finance & investment** | This subsegment includes companies providing financial services and platforms to help facilitate lending, funding, and investing:

- 11 Lending platforms**  
Startups providing commercial real estate loans and financing. Includes debt financing.

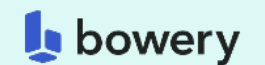


- 12 Investment platforms**  
Startups providing investment platforms through which individuals or organizations can invest into residential and commercial real estate assets. Includes equity crowdfunding.



**Real estate transaction solutions** | Startups developing software to assist real estate professionals with commercial real estate workflows related to transactions:

- 13 Data & analytics**  
Startups providing comprehensive information and analysis on real estate transactions, benchmarking, valuations, deal data, market intelligence, prospecting, and due diligence, among other areas.
- 14 Marketing**  
Startups providing services and technology intended to help real estate professionals advertise commercial property listings.
- 15 Agent tech & tools**  
Startups developing technology to assist real estate professionals such as agents, brokers, and developers with completing real estate transactions. Includes CRM software.



- CRE marketplaces**  
Companies listing commercial real estate available for purchase.





## REAL ESTATE TECH EMERGING TECHNOLOGY LANDSCAPE

- 17 Home renovations & improvements**  
Startups providing renovation and home improvement services and tools to existing home owners.



**Finance** | Startups providing financial technology and services for the home ownership process:

- 18 Mortgage tech**  
Startups leveraging technology to digitize traditionally analog front-end and back-end mortgage processes. Solutions include underwriting, servicing, closing, mortgage data and analytics, and origination.



- 19 Home insurance**  
Startups in this category provide coverage to private residences from losses and damages caused by fire, flood, or some other destructive event. Some companies in this space also provide escrow and title insurance services.



**Real estate transaction solutions** | Startups developing software to assist in the home buying and selling process:

- 20 Data & analytics**  
Startups providing comprehensive information and analysis on residential real estate transactions, valuations, markets, and financials.



- 21 Marketing**  
Startups providing services and technology intended to help real estate professionals advertise homes for sale.



- 22 Agent tech & tools**  
Startups developing platforms to assist real estate professionals with processes surrounding home buying and selling.



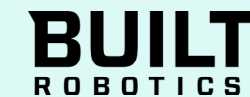
- 23 Home buying & selling**  
Startups developing platforms to assist existing and aspiring home owners with the process of buying or selling a home.



- 24 Modular construction**  
Startups developing residential and commercial buildings by manufacturing partial or whole structures in factories, which are then shipped to the construction site for installation.



- 25 Construction robots**  
Startups developing robots for use on construction jobsites to assist workers with tasks typically done by human laborers.



- 26 Digital twins**  
Startups providing virtual replicas of physical assets, often machines or buildings, which enables the tracking of these assets via a software platform.



- 27 Architecture, design & planning**  
Startups developing technology to assist with the planning and design of new structures.



- 28 Project management**  
Startups developing software to assist with the facilitation of construction projects.



- 29 3D printed buildings**  
Startups developing 3D printing technology for the construction industry, designed to fabricate livable structures.

