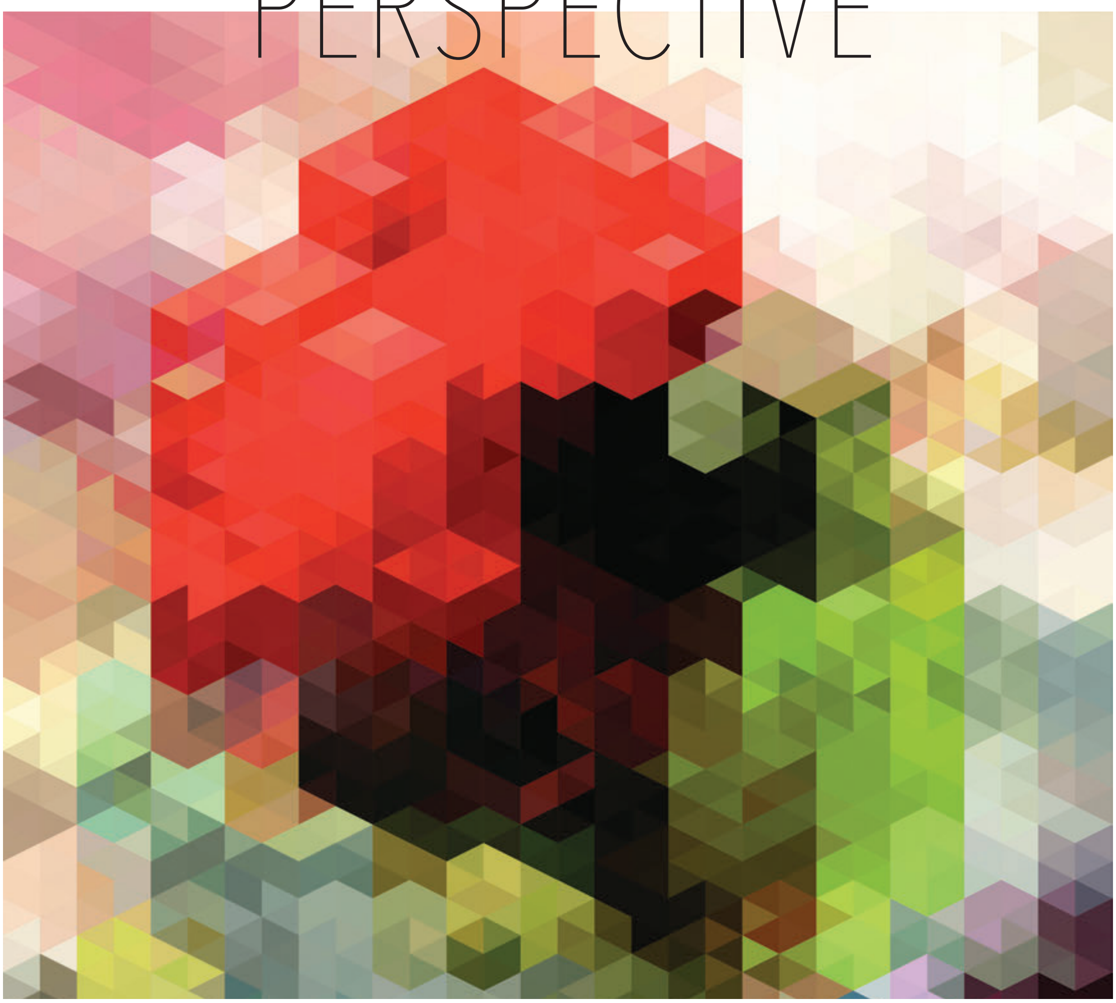
Commercial Real Estate Tech:

A RESEARCH AND VENTURE FUND PERSPECTIVE



The commercial real estate industry is being inundated with new technologies and property technology companies created to improve virtually all aspects of real estate investing and management. Some of the processes being targeted include attracting tenants, reducing transaction costs, and increasing the information at investors' fingertips. All this CRE tech—or "proptech"—has raised expectations, as well as questions, for institutional real estate investors: How do these technologies affect expected revenues and expenses? What new services and technologies should be adopted? Which tasks and operating processes need to be rethought? How will today's real estate roles, from acquisitions to asset management, be different in five years? Will early adopters have a first-mover advantage?

To answer some of these questions, we turned to JLL's Mike Hart, Senior Vice President in the company's research group leading the team's data management and technology platform, and Mihir Shah, Co-CEO of JLL Spark, which has launched a venture fund to invest in CRE tech start-ups. Mike Hart first provided an overview of the real estate technology landscape.

How did real estate tech become part of your day-to-day research work?

Hart: The growth of alternative listing sites, such as 42Floors, after the global financial crisis really got my attention, and I've been tracking this space ever since. One of JLL's brokers was wondering how these sites were getting listings, so my work grew from a place of knowing our competition. But now my efforts have become much more about helping JLL's clients understand all the opportunities and options out there.

My team started tracking around 25 companies, and now we're tracking nearly 1,000 proptech companies. These companies are focused on every inefficiency and opportunity to improve operating and financial performance in real estate that can be imagined and creating an app or technology around them.

Do you think the hype around CRE tech has gotten ahead of reality?

Many of these companies are well funded, backed by smart venture capital companies, so I don't think this surge in activity can be dismissed as hype. Every company is doing something very innovative. It's fair to say that many proptech firms have been at an idea stage so far, but I have seen a real shift over the past 12 months; we are seeing fewer completely new concepts and more focus on execution. The emphasis is now about testing fully formed concepts versus pie-in-the-sky ideas.

Many proptech firms start by focusing on specific real estate niches—we think of them as an inch wide and a mile deep. This focus allows companies to advance their technologies and creates opportunities for larger companies to acquire proptech companies and integrate them with existing platforms. For example, Comfy started as an app to allow workers to request temperature changes in their office spaces, and it was acquired by Siemens earlier this year. Dealpath organizes the specialized process of evaluating property acquisitions.

Why does JLL follow proptech closely?

First, few real estate service providers or investment managers have the luxury of tracking the space in detail, and I know JLL clients are being pinged with cold calls and pitches from many of these proptech firms. An asset manager might be seeing e-mails from dozens of companies each month and doesn't have the time to

William Maher
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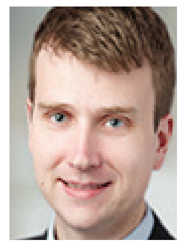

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process them. By spending time using and evaluating the products, I can be a better advisor to JLL's clients.

Second, as longstanding real estate service providers, JLL and competitors like CBRE obviously recognize that the CRE industry has changed and will continue to change because of technology, and we want to stay on the cutting edge—playing offense more than defense. We want to monitor this space for different technologies we can use ourselves, partner with, or be the first mover.

How will CRE tech change the process of making real estate investments?

Building owners must adopt and adapt. They will need to become much more efficient, and these technologies are an opportunity. The term "real estate fracking" describes getting additional value from real estate by breaking it up into discrete components and monetizing those components that weren't priced before—for example, renting out underused conference rooms. This is value that owners can capture.

Proptech is not likely to be a substitute for knowledgeable and experienced portfolio managers or asset managers. But it will make reviewing more deals in a shorter time possible. Various proptech tools should also allow real estate professionals to make better forecasts, relying less on "gut reaction," which should lead to fewer budget and underwriting misses.

High-frequency trading for real estate is not around the corner. Proptech firms that crowdsourced capital for real estate investment have been very well funded, but they don't seem to have gained as much traction as would be expected—potentially because of liquidity and control.

Where is the capital coming from to fund proptech start-ups?

The major real estate service providers, such as JLL and CBRE, are organizing strategic partnerships and giving guidance to tech-focused firms, but dedicated venture capital firms are providing the bulk of the new capital. A few notable ones include Fifth Wall, Navitas, and Moderne Ventures. It's encouraging that capital outside of the real estate sector has recognized the opportunities to make real estate more efficient.

After speaking with Mike Hart to get a lay of the land on CRE technology, we picked up the conversation with Mihir Shah, who brings considerable experience moving tech from idea to product, at his start-up–Mob.ly–and at both Yahoo and Groupon.

How does real estate tech compare with some of the other areas of tech you've worked in at Mob.ly, Groupon, and Yahoo? Is real estate still in the Jurassic era relative to those other areas?

Shah: I started at JLL Spark last year, and my answer today to that question is different than it was then. Eight months ago, I would have said real estate was definitely slow to adopt technology, with the occupier side of real estate ahead of the investor side. But interest in real estate technology has grown dramatically in a short period of time, on both the capital and the user sides. There's quite a lot of interest from property investors trying to evaluate new CRE technology that improves tenant experiences, makes buildings smarter, and values buildings.

We're coming out of a six- to ten-year period when real estate tech start-ups were struggling, developing slowly, and had limited investment dollars. We're now at an interesting inflection point. Investment dollars have grown, investor interest has grown. More of these entrepreneurs have a background in technology and are being drawn into real estate. Going forward, a fairly rapid acceleration of these trends is likely.

How is the growth of mobile data affecting real estate technology?

Two specific sets of mobile data applications are available for real estate. The first focuses on mobile tenant experience applications. These applications enable tenants to control their environment, access different spaces, and book conference rooms. A variety of companies are building mobile apps to do all these things, and they have been getting a lot of interest from property occupiers and now from investors. The second set of applications focuses on making a construction project manager's or leasing agent's phone an extension of a laptop, making routine processes easier.

A related area is big data. If you think about it, each commercial building is already generating a lot of data, from energy usage to HVAC, and many companies are coming up with new devices to wirelessly transmit this data. All this data can be processed much more cheaply than ten years ago, using algorithms to find insight and improve tenant experiences.

Real estate investors are often in the position of trying to predict where rents and property values will be in the future. How can big data help with that?

Let's focus on a very specific example: the value of a building. Should an investor buy or sell? In trying to determine the

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value of a building, an investor should consider many different pieces of data, from leases and rent roll to physical characteristics to nearby uses and activities, as well as macro data on trends in the area and economy. JLL Spark has invested in a company called Skyline that takes a plethora of data like this to simulate the value of the building. It's early days, but it's an example of what's possible with big data.

What do you look for as you evaluate companies and invest the Spark fund?

There are three factors that most investors evaluate, regardless of the industry. Call the first one the founder "X" factor. Is the founder capable of independent thinking? Does he or she have grit, the ability to survive and keep going when things become challenging? And finally, is the founder introspective? The founder should know what he or she doesn't know and have the ability to recruit talent that does. Second, I look at the total addressable market. Third, I think about where the product sits on the spectrum from nice to have to essential for the target customer. Finally, I look at a company's fit in terms of partnership with JLL Spark. I am not looking just for return on investment—I want to invest in companies that my team can help grow and that will be useful for JLL and our clients.

Do you think CRE technology is disruptive to particular real estate property types or locations?

There are certainly disruptions impacting property value, such as the rapid growth of online retail for the retail and industrial sectors, but CRE tech is not driving these macro trends. Real estate technology is changing the way the industry does business within each property type. Skyline, for example, could enable deal teams to evaluate investments faster and unlock opportunities that would have been hard to identify without technology. There is a notion that commercial real estate is "clubby" and hard to access. New platforms that combine financial services and technology, is one way to bring new retail investors into the sector. This could include buying and selling shares in a building via a blockchain-based exchange or putting together an IPO for an individual building

What will be some of the CRE tech developments we're likely to see in the near future?

There are new tenant experience apps coming for occupiers, and these will likely become commonplace. The next generation of data-driven valuation tools is also coming. The Internet of Things technologies continue to mature, and they will translate into more usable data to reduce operating costs. Tools to trade minority shares will create more liquidity and potentially higher values. And companies are working on apps that will provide greater transparency around building and capital project construction costs.

Some consolidation among CRE tech companies is also likely for a simple reason: sales cycles are notoriously long in this industry, and that takes a toll on start-ups. At some point, this leads to consolidation rather than ten companies fighting for attention from a relatively limited group of large industry players such as REITs and investment managers.

As we wrap up, what advice would you give institutional owners of real estate, such as pension funds, and their investment managers on how they should prepare for the future of real estate technology?

Property owners would never adopt most new technologies if they needed to check every box at the early stage of development, and JLL shouldn't expect them to. JLL Spark encourages owners to test and pilot new technologies at small scale, setting up a trial at just one property, for example. These trials should be run quickly to help both the start-up and the property owner to assess fit. This is very much the bridging function we see ourselves playing at Spark. ■

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