

The AI advantage

Investors and managers must begin understanding the potential of artificial intelligence or risk being left behind the competition

by Paul Chen

The world of real estate tech or “proptech” is quickly evolving. New ideas on big data, the Internet of Things, artificial intelligence (AI), machine learning, facial recognition, blockchain, augmented reality (AR), virtual reality (VR), autonomous vehicles, drones and so on have captured our attention. One of the most exciting developments is the application of AI for commercial real estate investments, which our industry is on the cusp of leveraging to transform the way we identify risk and opportunity, and invest in and manage commercial real estate portfolios. Companies that ignore this actual reality will be heavily disadvantaged.

This article aims to provide an overview of developments in this nascent, but promising, space.



Leading real estate organisations in Asia are actively experimenting with new technologies and collaborating with peers to accelerate solutions that can benefit the market.

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Slave to the spreadsheet, but there’s hope

If you have had to prepare quarterly portfolio reports or investment proposals, you will likely recall long hours poring over volumes of data, validating conflicting information and tweaking complex Excel spreadsheets with blinding yellow and red highlights.

There is a better way. Advancements in AI can be applied to real estate investments by drawing upon both traditional and

nontraditional data sources such as hyperlocation data and web data to generate scenario outcomes, challenge assumptions, reduce personal bias and visualise opportunities and risks from vast volumes of granular data faster than any human can.

Changes are happening now

The scenario described above is a common conversation I have with real estate executives in Asia. The good news is that technology is now a part of the strategic agenda. Technology has risen from the basement to the boardroom. According to a survey from the Altus Group’s *2019 CRE Innovation Report*, “Findings reveal that driving efficiency through automation is a key priority for CRE executives and the use of AI and machine learning is approaching a critical mass.” Additionally, the survey reveals 48 percent of respondents are “using or already trying out AI and machine learning”.

Until recently, advancements in the use of big data and AI for investment decisions have mostly been in the residential space. Zillow and RedFin have incorporated elements of AI along with their massive data sets to enhance the customer experience through better search and task automation. In the multifamily and hospitality segments, software using data and algorithms to optimise rents has been used for years. The commercial real estate sector has been steadily attracting tech talent and VC funding, giving rise to proptech startups to tackle challenges in commercial real estate.

The term “proptech” describes startups that heavily utilise technology to serve or compete in the real estate space. According to Unissu, an

Using traditional and nontraditional data			
Traditional data sources		New data sources	
<ul style="list-style-type: none"> • Macroeconomic data • Regional economic data • Demographic data • Local market supply/demand 	<ul style="list-style-type: none"> • Cap rates, transactions • Listings • Comps • Financial data • Occupancy, rent, absorption, expenses 	<ul style="list-style-type: none"> • Web data (social media, news, clickstream) • Hyperlocal data (mobile, amenities/store locations) 	<ul style="list-style-type: none"> • Correlations from other data sets (similar building attributes, different variables) • AI generated – insights from nonlinear correlations

Sources: GeoPhy, Skyline AI

Applying AI

While not an endorsement, below are some companies applying AI or nontraditional data sets to the commercial real estate investment cycle:

Spacemaker.ai: Uses its AI engine to maximise the potential of a development site by analysing zoning requirements, quality preferences, market preferences and the physical environment.

xKool.ai: Applies AI, machine learning and big data to urban planning and architectural design, with Chinese developers and design firms as core customers.

Bowery: A leading company in the automated valuation model (AVM) space, Bowery aims to redefine the commercial appraisal space through big data, advanced technology and extensive expertise.

Real Capital Analytics: Since 2000, RCA has been providing some of the best capital transaction insights for commercial real estate on a global scale.

GeoPhy: GeoPhy is an AVM platform that uses machine learning that incorporates a wide set of data to identify global patterns and integrate hyperlocal data to refine analysis for a specific property.

Skyline.ai: Skyline incorporates a combination of traditional and nontraditional data into its AI engine. Skyline has partnered with major real estate and financial players to establish investment vehicles augmented by AI.

SenseTime: Using its AI technologies, SenseTime is working with real estate firms in Asia to create innovative methods to support the investment and management of real estate.

online proptech directory and community, there are well over 7,000 proptech companies globally, with funding growing each year.

High-profile proptech companies in the commercial real estate space include VTS, Honest Buildings, CompStak and Cadre. While these companies support different processes within the commercial real estate life cycle, the real value is in the data.

Today, we can no longer solely rely on relationships, gut feeling and traditional cashflow models to support the investment process. Investors and managers need to incorporate traditional and nontraditional data with advanced analytics to stay ahead of the competition.

Artificial intelligence as a technology for commercial real estate is just beginning. But the key challenges to effectively applying AI are data management and organisational capability.

The real estate data challenge

While the real estate industry has made strides in data management, the “data challenge” still exists. This is especially true in Asia, whose countries are ranked behind the anglophone countries in the JLL Global Real Estate Transparency Index 2018.

Even within the top real estate markets in Asia — Japan, China, Hong Kong, Singapore and India — one needs to deal with different languages, currency, areas of measure, lease structures, legal systems and government data repositories, thus making transactions, valuations and returns data difficult to compare.

According to the RICS October 2017 *Perspectives on Global Real Estate Investment* report, “80 percent of Asia-based respondents said data inconsistency was a major problem for risk management today.”

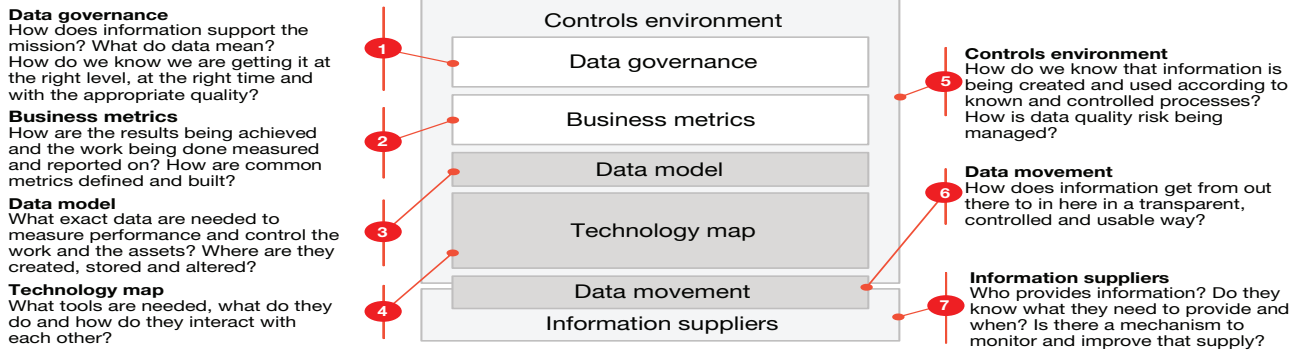
The pursuit of higher returns has resulted in investors moving up the risk curve to secondary markets and alternatives such as data centres, student housing and co-living spaces. The diversity of these added risks places an even higher demand for data, in places where only limited data sets exist.

Most new AI platforms are designed with global scale in mind. But an AI platform from North America cannot be expected to work seamlessly in Asia. In addition to the challenges above, one must be mindful of the social media environment in each country. In China, where Google and Facebook are blocked, social credit scoring

How AI can enhance real estate investment processes		
Acquisitions	Planning and construction	Operations
<ul style="list-style-type: none"> • Enhance deal sourcing and screening by scanning wider sets of properties based upon investment criteria • Better due diligence by testing performance assumptions through traditional and new data sources • Faster physical due diligence through use of drone data to identify structural faults • Present pricing anomalies through linear and nonlinear correlation and patterns with large data sets 	<ul style="list-style-type: none"> • Present alternative design options through generative design • Better capex planning through predictive asset life and customer preference patterns • Control cost overruns through predictive models based upon project size, type, manager competency • Support strategic planning through testing of forecast assumptions and hold/sell analysis 	<ul style="list-style-type: none"> • More accurate financial statements through more automated auditing tools • Augment valuation models through automated valuation models • More accurate data through robotic process automation of property management accounting transactions • Automated ad hoc reporting through natural language processing

Source: RealFoundations

Information model



Source: RealFoundations

and proxies for personal credit are used. In Japan, Yahoo still maintains a strong following.

For AI platforms to be successful, it is imperative that an information model (data management plan) be developed. The information model sets the foundation for what data are needed; what tools are used; and how data should be defined, captured, stored, shared and presented.

Despite the advancements with core property management solutions, the dynamics of Asian markets still result in investors and managers having to manually wrangle property management data. Depending on the countries, sectors and investment styles, investors and managers may utilise one of the following methods to manage property data:

- Single property management solution
- Data portal with central data warehouse
- Hybrid of the above
- Manual (reports + cashflow models)

The other option to consider is data services, where the work of collecting, cleansing, organising and

moving data is outsourced to a services provider. A number of firms offer data services on a global scale. By combining scale, know-how and technologies such as robotic process automation, firms can increase service quality while driving costs efficiently. Although data service offerings are not quite perfect, they are gaining traction in the market.

Mindset for action

Before you embark on your AI journey, here are a few pieces of advice for navigating in Asia:

1. Leadership should become educated in AI, prioritise initiatives and ensure a data security policy is implemented.
2. Involve crossfunctional teams from all relevant parts of the organisation. AI is not just the realm for data scientists. Teams should include stakeholders, whether they are the front line or the back office. Sharing and the crosspollination of ideas will only enhance the end result.
3. Assign “translators” — team members who understand the business and the technology and are able to communicate with the different business units in terms they understand. Often, translators develop the use cases for AI.
4. Do not make the AI initiative into a headquarters project. Use cases, business models and data may be highly localised, and thus it is important to include data scientists and translators in the regional offices.
5. Don’t be afraid to fail. Whatever the outcome, however, the organisation must benefit from the learnings.

Perhaps the greatest outcome at this stage is learning. Leading real estate organisations in Asia are actively experimenting with new technologies and collaborating with peers to accelerate solutions that can benefit the market. AI and proptech are just in the beginning stages. The time is now to explore and learn. ❖

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Lab-tested

Companies in Asia are beginning to collaborate, with the goal of fostering innovations for the real estate industry. Below are two examples:

Sino Inno Lab: Launched by the Sino Group in 2018, the Sino Inno Lab is a physical space showcasing both hardware and software in its intended environment. Within the lab, an actual hotel room was constructed so that crossfunctional teams can experiment with the technology in actual use. The lab includes technology based on AR, VR, robotics, smart home tech and clean tech.

UrbanLab: Announced in July 2019, UrbanLab is a joint effort by JLL, Swire Properties and Ping An Urban Tech. It is billed as mainland China’s first corporate accelerator programme focused on proptech. The initiative aims to foster and further develop promising tech companies in China, with the goal of creating innovative technology solutions for the real estate industry.