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PROPTECH: COLLABORATIVE PARTNERSHIPS

INTRODUCTION

PropTech will see the boundaries between real estate, construction and maintenance continue to blur and erode. The nature of competition will change with machine learning and the Internet of Things (IOT) increasingly accessible to small and medium sized organisations. Collaboration will be key to success as the traditional real estate value chain is disrupted and replaced by a very different ecosystem. In this brief commentary we examine likely areas for these new partnerships.

PREDICTIVE INTELLIGENCE

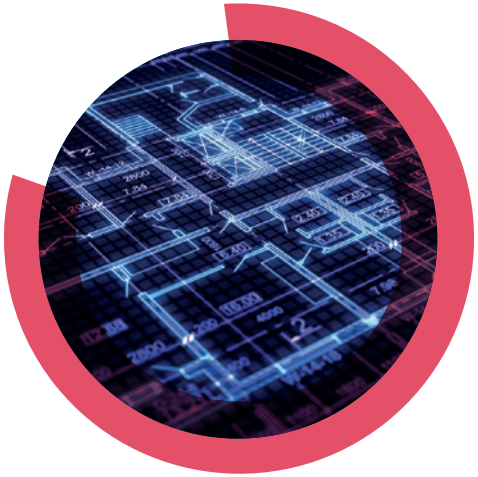
The application of PropTech has clear benefits for intelligent energy management and predictive maintenance. Buildings account for over one-third of final energy consumption globally and throughout their lifecycle, with correspondingly high levels of carbon dioxide emissions[1]. Smart building elements are already proven and are likely to scale up in the next five years or so. Intelligent energy management systems can reduce energy use in offices by 20%. Predictive maintenance, meanwhile, can reduce associated costs by up to 30%, while smart security systems could yield $6bn savings by 2025[2].

Smart buildings are likely to morph into intelligent buildings as individual systems coalesce. Other key features could include:[3]

- In-built flexibility and ability, allow for the rapid conversion and repurposing of space
- Sensors to monitor and adapt energy use
- Automation of functions
- Personalisation:
  - Integration of workplace management options that help increase productivity and workplace performance
  - Buildings designed and configured for the wellness of their occupants.

BIM and beyond

Building Information Modelling (BIM) is the digital representation of processes and physical characteristics that comprise a building. It will likely have a key role to play: as part of the framework that forms future property passports, as a driver of greening buildings and in the creation of new PropTech tools. It could even form the basis of some more radical business models in new collaborative partnerships.



1 Source: Cognizant, 2019 https://www.cognizant.com/whitepapers/embracing-smarter-facilities-management-codex2931.pdf
2 Source: Oracle, 2018 https://blogs.oracle.com/profit/in-the-future-buildings-will-be-autonomous
3 Source: Whats Next, 2018 https://www.whatsnextcw.com/smart-buildings-an-integrated-future-for-facilities-management/

For example, design and engineering firms could establish competitive 'direct to consumer' advantages though embracing '…the idea of interconnected intelligent design and building systems, along with robots doing the work.' Such a company – essentially building the core software, would then '…own the customer interface, A.I-based design and engineering algorithms and 7D BIM models with the data needed to steer construction and O&M activities[4].'

A digital twin – a digitalised copy of a building – allows users or other stakeholders to simulate any plans for improvement or retrofit before physically implementing them[5], so establishing and potentially resolving issues before they happen in the physical world. Successful deployment will require enhanced ecosystem collaboration, since investment in digital twin capabilities during the capital expenditure phase will increase value and benefits during the operating expenditure phase, assuming they are standardised and embedded into design and construction.

REAL TIME DATA

By 2025, around 160 zettabytes of data are forecast to be generated every year. By this date, one-fifth of all data generated worldwide is forecast to be marked as 'critical' to daily life, and nearly a tenth as 'hypercritical[6].' Data collection and analysis are becoming prominent features of building systems, which will likely mean that facilities best positioned to analyse their data and provide actionable output to users will likely gain competitive advantage within the marketplace[7]. Collaboration and ecosystem partnerships will become more prominent in many organisations plans since few have the necessary direct to consumer reach with the 100 billion or so IoT connected devices forecast to be around in 2030. Fundamental shifts in risk management are likely. Security and privacy controls will need to be built at the edge and intrinsically part of every device and network.

If such collaborations are to flourish, building appropriate data architectures is key. This could include data from sensors embedded in existing assets that then help guide the design of new and future assets. Such a shift would require the industry to change its approach, management and culture as well as data protection, security and governance structures[8]. 'Data lakes' can help provide consistent access to data for stakeholders, even if access is 'graded,' to ensure appropriate usage.

4 Source: Jobsite, 2018 https://jobsite.procore.com/tech-skills-and-new-talent-are-shaping-future-of-construction

5 Source: Information Age, 2018 https://www.information-age.com/smart-cities-need-digital-twin-123474177/

6 Sources: Forbes, 2017 https://www.forbes.com/sites/quora/2017/12/20/which-areas-in-investment-banking-are-experiencing-talent-gaps/#2a9b6a0b5450 and IT Pro, 2018 http://www.itpro.co.uk/big-data/30541/smart-cities-to-become-the-norm-by-2025

7 Source: Cognizant, 2019 https://www.cognizant.com/whitepapers/embracing-smarter-facilities-management-codex2931.pdf

8 Source: World Economic Forum, 2018 http://www3.weforum.org/docs/Future_Scenarios_Implications_Industry_report_2018.pdf

As part of linked smart cities

While '…currently most smart city models provide solutions in silos and are not interconnected…the future is moving toward integrated solutions that connect all verticals within a single platform[9].' All buildings will feed into one of a number of shared systems. The impact on real estate players without a strategy or the means of enforcing one, could be that they are shut out from such ecosystems, ceding influence, new revenue streams and chances to shift their business model.

Data lies at the heart of the smart city. Accessing and integrating an expanding range of data sources and typologies could shift our methods for valuing and marketing properties and hence impact how, where, when and what developers decide to build[10]. Such data is likely to span freely available sources: local demographic patterns to more protected sources; detailed information on how occupants use a given building or space for example. The benefits of these platforms are already being factored into decision making. Smart cities could generate up to $2 trillion worth of business by 2025 and become key talent magnets in their own right[11], with some 43% of business leaders looking to move offices to cities with a compelling smart city vision[12].

All real estate players need to be cognisant of how smart city plans impact individual buildings. Indeed, BIM is already mandatory in Singapore for any public works projects and Hong Kong has similar plans[13]. Such moves are likely, in turn, to require closer collaboration and communication between real estate players and smart city interests.

Buildings' emerging role

The links between building operators, owners and other adjacent market players are also set to deepen and merge, most notably with respect to the decentralisation of energy and mini-grids. Ikea, for one, has vowed to become a net exporter of renewable energy by 2020, using its substantial roof acreage for solar and wind power. Examples of self-producing buildings abound; in the U.K. the Active Office, '… combines a range of innovative technologies that will enable it to generate, store and release solar energy in one integrated system[14].' Mini grids could ensue, bolstered by changing utility models later in the 2020's. These developments and the battery boom forecast to attract $620bn in global investment by 2040[15] will shift buildings from energy consumer to producers. Distributed mini grids will further shift the focus of power management away from efforts to reduce demand and towards dynamic source optimisation that will likely incorporate building-to-building communication and smart-grid tie-ins[16].

9 Source: Zawya, 2018 https://www.zawya.com/mena/en/business/story/Smart_cities_to_create_business_worth_2trn_by_2025-SNG_114004823/

10 Source: Urban Land, 2018 https://urbanland.uli.org/development-business/the-developing-power-of-big-data/

11 Source: Zawya, 2018 https://www.zawya.com/mena/en/business/story/Smart_cities_to_create_business_worth_2trn_by_2025-SNG_114004823/

12 Source: Cognizant, 2018 https://www.cognizant.com/futureofwork/article/smart-cities-are-smart-business

13 Source: South China Morning Post, 2018 https://www.scmp.com/business/companies/article/2145546/how-proptech-changing-hong-kongs-property-industry

14 Source: Phys.org, 2018 https://phys.org/news/2018-06-power-stationsthey-energy-consume.html

15 Source: MoneyWeb, 2018 https://www.moneyweb.co.za/news-fast-news/the-battery-boom-to-attract-620bn-in-investment-by-2040/

16 Source: McKinsey, 2018 https://www.mckinsey.com/industries/advanced-electronics/our-insights/laying-the-foundation-for-success-in-the-connected-building-era

TALENT REQUIREMENTS

Organisational issues complicate the adoption of new technologies, with the lack of staff to support the technology, budget, employee and management hesitance commonly cited[17]. AI will redraw talent requirements, to include, artificial expertise, data analysis, experts on modular design and logistics and even resilience experts and circular economy specialists[18]. 55% of corporate real estate leaders surveyed by Knight Frank suggested that technology will greatly increase the talent requirements within their business[19]. Given the wide range of skills needed, and the significant demand and supply imbalances that accompany many of them, talent sourcing strategies will likely become areas of competitive advantage to an even greater degree than at present. Unless employment propositions on a par with big tech companies can be created, many real estate players will continue to rely on outsourcing for some of their key roles. HR teams would be wise to start building talent pipelines for the jobs and tasks that will be required tomorrow, drawing on new collaborative partnerships.

The widening efficiency gap between what's possible and business as usual, and between digitally enabled business and non-digital firms will soon make it impossible to ignore new technologies and the organisational and business model changes they demand.

The imminent era of ambient and intelligent technology will require real estate companies to rethink their business models. Innovation will become as critical to success as it has in other industries further along their digital journeys. Forwarding thinking businesses will be considering their role in the ecosystem , what complementary skills and capabilities they require in partners and how this will enable better services and outcomes for clients.

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17 Source: Construction Junkie, 2019 https://www.constructionjunkie.com/blog/2019/2/10/jbknowledge-releases-2018-construction-technology-report-contech-junkie
18 Source: World Economic Forum, 2018 http://www3.weforum.org/docs/Future_Scenarios_Implications_Industry_report_2018.pdf
19 Source: Knight Frank, 2018 https://www.knightfrank.co.uk/blog/2018/11/12/next-wave-technology-will-force-a-rethink-of-business-models-and-real-estate-strategies

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