

TRENDBOOK N°05

# PROPTech: what's next?



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# THE PROPULSIVE FORCE OF PROPTech

BY **Thierry Laroue-Pont**  
Chairman and Chief Executive Officer of BNP Paribas Real Estate

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© Thomas Gogny

The real estate sector is no doubt going through its biggest revolution. Above all, it's a revolution in terms of behaviour with the pre-eminence of services. Buildings have become, more than places to live or work, spaces for experimentation and consumption. The challenge for professionals in the field is to offer an experience that is capable of re-enchanting all profiles from tenants, collaborators, property owners and landlords alike. This new landscape, made possible by

PropTech, is crucial for property professionals and their livelihood.

Beyond interior space, the idea is also to completely reinvent buildings on the scale of their neighbourhoods and not merely within their immediate environment. In a period of ecological revolution, a building's environmental footprint represents essential criteria for resilience and sustainability. We have gone beyond the stage of awareness, it is now time to implement solutions and measures capable of transforming society and preparing it as best as possible for the changes to come.

In line with these transformative forces, the technological revolution, embodied by PropTech, represents a powerful catalyst for change, not only for the streamlining of energy costs and the anticipation of servicing or maintenance, but also for developing behaviours.

The market however is still in its early stages. Europe is still awaiting its first PropTech unicorn in order to catch up with the United States and China, but a number of initiatives, such as the structuring of national consortiums are providing Europe with greater influence on an international scene.

Breaking away from traditional forms of organisation and embracing open innovation or intrapreneurship seems to be the best way to preserve a good position in the decisions taken for the future of our industry, as well as providing instant, effective and sustainable solutions for all those who live, breathe and work in the property sector. We must ask ourselves the question: What if PropTech is able to become one very powerful ally?

# UNPICKING PROPTech

PropTech, a contraction of the terms property and technology, brings together start-ups and companies that use modern technology to improve or reinvent the real estate business. Changes that mark the beginning of a new era in real estate consumption.

PropTech transforms the entire value chain of real estate, from finding properties (rental, acquisition), to providing new services within existing housing or office buildings. In its wake, PropTech generates multiple types of expertise:

## Key data

**2,936**

start-ups in real estate, construction and smart cities in Europe

(Unissu - July 2019)

Number of PropTech investments per investor:

**2.7** in 2017

**5** in 2018

**4.8** in 2019 (first half)

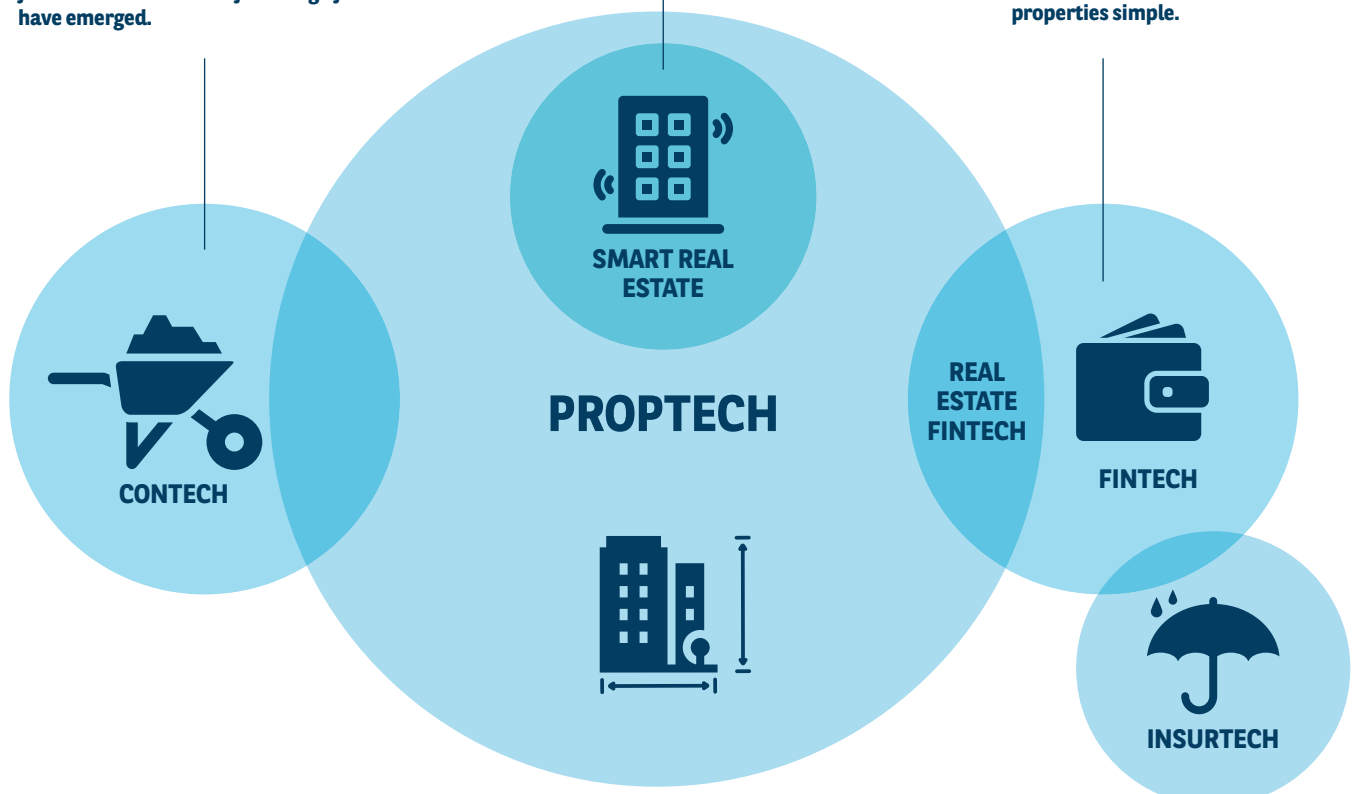
Source: REBNY/Royal Institution of Chartered Surveyors 2019

## BUILDINGS

Smart Real Estate contributes to smart buildings via a range of on-line services and operations. As a result, the whole city becomes smart.

**FINANCE (FinTech).** A number of real estate transactions such as property funding, investments or transaction management, are now calculated and completed by algorithms (Real Estate FinTech). PropTech also covers insurance with InsurTech that makes insuring properties simple.

**CONSTRUCTION (ConTech,** contraction of construction and technology), where new work methods such as BIM (Building Information Modelling), optimisation solutions for worksites and manufacturing of materials have emerged.



# THE INNOVATIONS THAT MAKE UP PROPTech

The expansion of PropTech is a result of the development of new communication technologies. Whatever the application (ConTech, FinTech, InsurTech, Smart Real Estate), they all stem from technological innovation.

## FUNDING

### *Simplified property transactions*

It's easy to imagine that **blockchain, technology for storing and transmitting transparent and secure information**, will completely revolutionise property acquisition.

It will be possible to become the owner of a home, commercial premises or an office in just one, ultra-secure click, specifically through the acquisition of SCPI and OCPI. The main advantage of this system is its capacity to protect against fraud and money laundering, as the transparency of transactions guarantees a limited number of intermediaries. Another aspect is **crowdfunding, which promotes investment in shared-ownership real estate**.

## PROPERTY MANAGEMENT

### *A range of services for the landlord*

**Artificial intelligence** makes it possible to provide simple and efficient real estate services. For example, it's possible to identify the ideal tenant by using an algorithm or to anticipate maintenance work with predictive analysis. How is this done? On the basis of data. **Big Data** is a precious resource used to draw up models by comparing millions and millions of pieces of information. Technology also supports estate agents, consultants and potential buyers during visits.

## CONSTRUCTION

### *Digital conception*

**BIM** (Building Information Modeling) has completely revolutionised the way in which a building is drawn and erected. This tool, a digital version of a building, makes it possible to analyse plans, control the progress of different construction phases and simulate behaviours and situations, such as energy consumption, maintenance and dismantling. Each contributor (craftsman, project manager, architect...) can access the project simultaneously. With **3D printing**, materials can be produced on-site, thus reducing transportation costs.

## OCCUPATION

### *Connectivity, the near future of real estate*

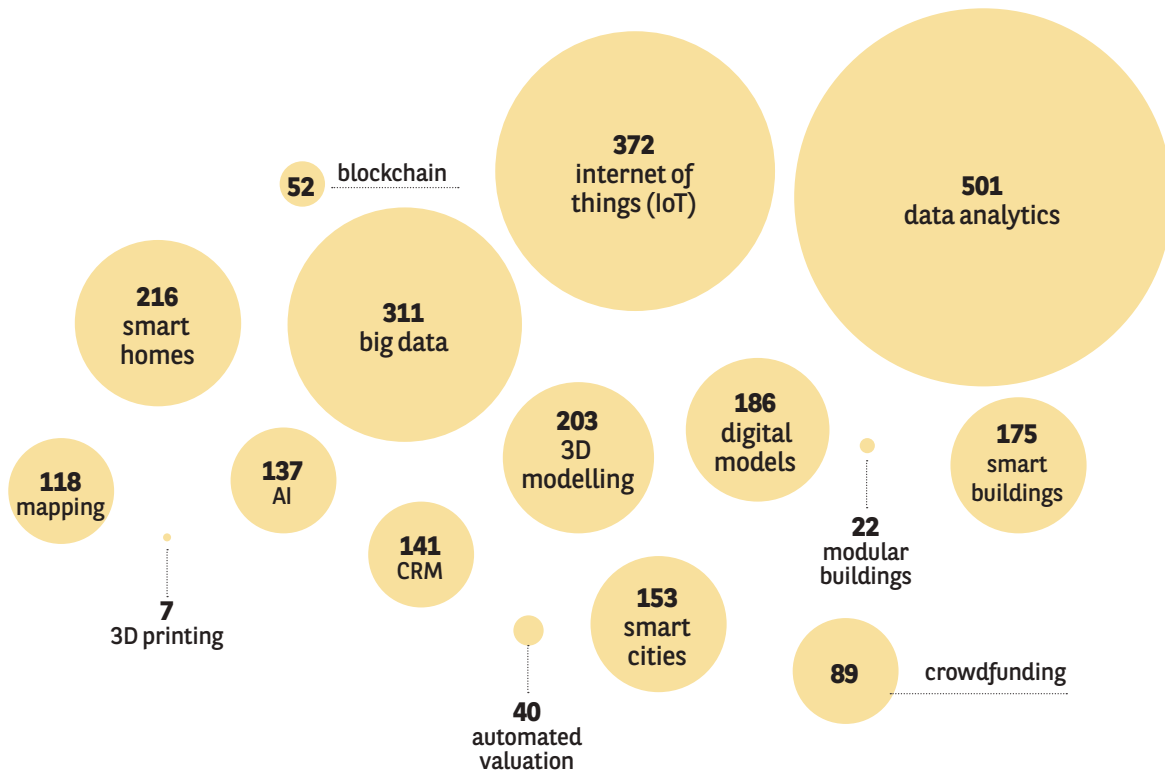
With the arrival of **5G** the use of **IoT** (Internet of Things) and connected objects will soar. As far as PropTech is concerned, this will lead to the expansion of **building automation, which will provide advanced services through interconnected technology**. Tomorrow, each home or office will likely be equipped with applications making it possible to control temperature, indoor lighting, computers and domestic appliances remotely. PropTech will democratise smart housing.



# EUROPE PROPTech DATA

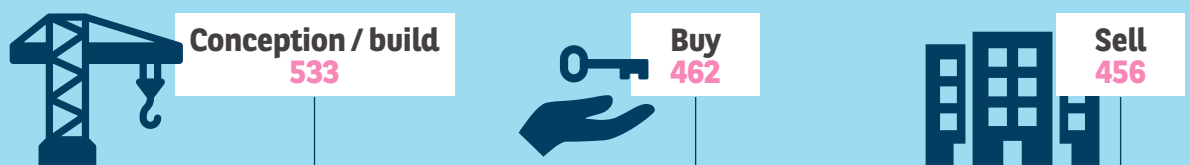
Source: Unissu, July 2019

## Distribution by technology type\*



Year	Total number of fundraisers	Total amount of investments	Average per investment
2016	1 169	\$ 8,754,067,995	\$7,488,510
2017	1 082	\$ 11,550,145,801	\$10,674,811
2018	898	\$ 14,848,652,793	\$16,535,248
2019	164	\$ 6,146,000,000	\$37,475,610

## At what point do they intervene in the life of a building? (number of start-ups)\*





## 2,936 PropTech start-ups in Europe



**797**  
United Kingdom



**546**  
France



**341**  
Germany

## Unissu, a database platform focused on the latest market innovations

Unissu's objective is to help players in the real estate sector understand the main technologies in their field and also build bridges between PropTech companies and their customers. The platform is the result of ten years' work conducted by two PropTech experts, James Dearsley and Eddie Holmes. With its extensive data base, Unissu can draw comparisons between the market, its products, services and players.

## 36 PropTech unicorns in the world\*\*

**21**  
unicorns  
United States

**12**  
unicorns  
China

**1**  
unicorn  
India

**1**  
unicorn  
Hong Kong

**1**  
unicorn  
Philippines

\*\* PropTech House data 2019

**Rent/Lease**  
**395**



**Move**  
**28**



**Manage**  
**1,111**



\* Certain start-ups are counted in several sectors

**JAMES DEARSLEY**  
Co-Founder @ Unissu



## “PROPTECH IS REAL ESTATE’S TICKET TO GREATER EFFICIENCY”

**James Dearsley is co-founder of Unissu, a global website and database aggregating PropTech trends, news and companies. Renowned as a PropTech expert, he advocates digital change in the real estate sector.**

### **What is the history of PropTech?**

PropTech follows FinTech, the precursor being digital transformation which provoked the change that we are seeing in the property industry now and will continue to see for another 5-10 years. With services now faster and more efficient, it was inevitable that the industry needed to find alternative ways of doing business. Change is a growth driver so investors have realised the potential of this disruption.

### **Much is said about PropTech but many companies aren't yet digital. Is there a gap between statement and reality?**

Compared to other sectors the construction industry has smaller margins so investment is more limited and fuelling innovation becomes less of a focus. As such, the industry is learning as its employees understand what PropTech means and demand certain solutions. Businesses know their market position today but may not understand what it will be in 5-15

years in relation to digital transformation.

This means wrestling with the PropTech solutions that they should incorporate to help position themselves in that future.

### **Why is change worrisome in the real estate sector?**

The fear is about failing at innovation when going from where the sector is now to its future. Real estate is so conditioned to succeed in terms of shareholder, customer and staff responsibility that there isn't room for error in the decision-making hierarchy. Companies must learn to test concepts and succeed or fail quickly.

### **You said, 'Technology must permeate every aspect of the sector to allow for a smooth integration of different services.' How is this goal achieved?**

Speak to the customer! In real estate we are not used to asking customers for help. The industry must be willing to instigate change

and open infrastructure by working with other companies and solutions on a physical and digital level. Start-ups need to merge with other complementary businesses, to provide a complete solution.

### **Can a company that does not use PropTech survive?**

Perhaps it's more a question of succeeding than survival. Companies that evolve will gradually gain market share as their offer becomes more complete. Those that continue along a stubborn non-transformational line will find that customers and employees will look for alternatives more suited to their needs. The successful companies of today may not be those of tomorrow.

### **How do you see the real estate of tomorrow?**

There is no doubt real estate will become a more efficient market, in every aspect, with the customer placed far more prominently at its centre. ■

“ The industry must be willing to instigate change and open infrastructure by working with other companies and solutions on a physical and digital level. ”





# THE MULTIFACETED NATURE OF PROPTech

# ***“Sustainability is only a promise until you fulfil its needs”***



© CCPMRE GmbH

According to Unissu, real estate accounts for 40% of overall energy use globally and 30% of global CO<sub>2</sub> emissions. For Prof. Dr. Marion Peyinghaus, PropTech is a major contributor to achieving environmentally responsible real estate.

Managing Director of the Competence Center Process Management Real Estate in Germany, a real estate IT systems Professor for Real Estate Management and a jury member of the international PropTech Innovation Summit 2019, Marion endorses the doors being opened by PropTech.



## **MARION PEYINGHAUS**

Managing Director @ Competence Center Process Management Real Estate in Germany

### **SUSTAINABILITY NEEDS DATA**

“I see the whole PropTech movement as a clear continuation of the sustainability concept and an opportunity to change human actions,” Marion asserts. “Sustainability is really a question of behaviour, and data is what we use to assess that behaviour. Sustainability’s major hurdle right now is a lack of data, for two reasons. One is that there is no method to capture data in old buildings. The second is that lighting and energy use can be traced to people in a building, which in Europe is an infringement of their privacy. In the USA or Asia these restrictions are smaller. And yet, without this information, it is more complicated to educate building investors, owners, occupiers and tenants of their impact, to devise ways to improve it.”

### **SUSTAINABILITY NEEDS TO BE A TOP PRIORITY**

“Sustainability may be a priority,” Marion continues, “but it has to be a top priority for companies to focus seriously on it.” Investors are actively surveying ideas developed by technology experts and looking for projects to finance. Among traditional companies and property buyers, however, interest in sustainability is still limited. “Take CO<sub>2</sub>. It is neither sufficiently nor transparently priced into goods and services. If it were included in our airfare, more people would take the train,” Marion points out. “By making data and CO<sub>2</sub> transparency a part of real estate, we’ll move closer to a ‘polluter pays’ principle,” pushing real estate to greener solutions.



## PROPTECHS ARE ADDRESSING SUSTAINABILITY DIRECTLY AND INDIRECTLY

"PropTechs are now using data in order to identify how buildings and also cities can be made more sustainable. I believe that without data, we are not able to see the full picture, it's like having a fully working car without fuel. In order to truly be sustainable you need to use data to understand your energy consumption and how to reduce it. Some PropTechs like DABEL for example have created artificial intelligence systems to better read CO<sub>2</sub> and humidity levels, which means building settings can be adjusted accordingly. Other initiatives take on larger scale operations, like how Google aims to make a neighbourhood in Toronto more liveable and sustainable through people orientated urban development."

## SUSTAINABILITY NEEDS TO MATURE INTO ORDINARY

"Right now, sustainability is more at a prototype phase. Green technology solutions are new, individual, small scale and therefore expensive. In a few years — no more than five, I hope — sustainable solutions will be part of day-to-day life and will have achieved economies of scale. It would be good, too, if governments and legislation sped things up. We are currently in a period of great technological innovation and social movement, and the real estate sector is realising it has to change. Many new developments can happen. PropTechs have a great opportunity to help us shift to a truly sustainable real estate industry."

## ZOOM IN ON a green start-up



© PHYSEE

# TALKING FAÇADES

Based in the Netherlands, PHYSEE captures data and electricity from inside windows on a building's façade to improve conditions inside. **Maarten de Haas, PHYSEE's Head of Business**, explains..

### What is PHYSEE?

Ferdinand Grapperhaus and Willem Kesterloo launched PHYSEE in 2015 based on their physics graduate thesis about generating electricity from glass. "The timing was also favourable thanks to EU regulations requiring more sustainable buildings, and a general trend to make our real estate more human-centered," adds Maarten.

### How does it work?

The aluminium separator found in double and triple glazing is replaced by PHYSEE's proprietary solar power and sensor technology. All windows are connected together, creating a grid across entire façades that generates data and 24-volt direct current (DC) electricity. The sensors measure indoor and outdoor air quality, light intensity and temperature. The SmartSkin interface then shares this data with third party applications managing sun blinds, lighting and ventilation. These are adjusted autonomously and in a decentralised way using the solar power. For example, on the eastern side of a building, vents are automatically opened to reduce CO<sub>2</sub> in a meeting room. On the south side, sun blinds are activated to protect against heat and glare from the sun.

### Better CapEx, cost and comfort

Maarten summarises the benefits: "By optimising the environment, we improve comfort and reduce energy costs by 20%. Several projects have proven that investing in this system with the associated sunblind and ventilation solutions requires less capital expenditure than other alternatives that reach the same LEED score."



**CSONGOR CSUKÁS**

Head of International Property Management  
@ BNP Paribas Real Estate

## ***PropTech, en route to an experience economy***

**The breakthrough of technology in the real estate business represents a challenge for the sector's entire value chain. Transactions and funding are concerned as well as the management, operating and enhancement of buildings. The concept of service is a crucial factor in the evaluation of property — these days, immaterial value is just as important as material value.**

In the wake of co-working, **new ways of "consuming" space** have started to emerge. The economic context, that promotes intrapreneurship and entrepreneurship alike, encourages the creation of projects that in turn require office space to prosper. More often than not, traditional triannual commercial leases represent a setback, and what is needed are **flexible, more transparent tenancy agreements, giving clients the power to choose their premises and to be better informed**. This requirement has been clearly identified by co-working players, who have provided a new innovative solution to the real estate market.

### **THE PINNACLE OF SERVICE**

These new trends provide more flexibility and also generate high expectations in terms of technology and services. Building tenants have become accustomed to getting more

than just four walls when they rent space. They're not interested in simply using the premises but approach the situation as consumers and are looking for pleasure and satisfaction. **Ultimately, the experience of the building becomes more important than the building itself:** space becomes a service. We, as Property Managers, must be careful to take this trend into account. This is what the notion of "hospitality" is all about: **putting proximity and human values back into the heart of a building is key and can also be labelled as "Human Estate"**. In addition to the management of the building per se, managing human connection (that is an integral part of Hospitality Managers' and Building Managers' jobs) must be taken into account. Whilst the amount of data at our fingertips is becoming more and more significant we must use it to actually serve the human and not just for the sole purpose of generating information. This

understanding of data and using it to create a human experience means guaranteeing tenants' satisfaction and well-being and developing client loyalty.

### **ANTICIPATING RESIDENTS' NEEDS IN ORDER TO SATISFY THEM**

In the face of this revolution, Property Owners and Managers will have to review their work methods. **With the experience economy, service and resident satisfaction are at the very heart of real estate issues; it is therefore necessary to anticipate customer needs and satisfy them even before they are expressed.** PropTech, combined with data processing, becomes crucial. In the near future, **Property Managers' jobs will evolve: they must become experts in the different ways of "consuming" space whilst holding on to the importance of managing a building.** This becomes a key factor in securing the occupation of premises under their responsibility, because a satisfied tenant that performs well is a stable and loyal tenant. By bridging the gap between owner and occupant, they will eventually re-align their interests with the support of technology. A consumer-centric approach will bring about profound transformation and a reinvention of the real estate business.

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**"THE EXPERIENCE OF THE BUILDING BECOMES MORE IMPORTANT THAN THE BUILDING ITSELF."**

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# Zoom in on two start-ups that are **REINVENTING SERVICES** in the real estate business

## **Hubstairs** *Revealing the potential of property thanks to 3D*

The start-up, founded in 2016, provides a 3D visual content creation solution, specialised in interior design. It is aimed at professionals (estate agents and promoters), as well as home and living retailers and private individuals, with an on-line custom fitting offer. Hubstairs is backed by a community of 400 interior designers and capable of providing swift responses, complying with a controlled budget, to space planning requests for office buildings, shops and private

homes. "We are persuaded that 3D will replace photography," explains Chloë Jammet, Head of Marketing and Communications. "It offers far greater interactive and immersive possibilities."

The strength of Hubstairs is to be present at every stage of a project. With promoters for example, the start-up steps in as soon as there is a call for projects and creates 3D perspectives of homes and shared spaces. Then, during the

pre-market phase, Hubstairs gives future buyers an inside view of the property. Once the property is on the market, 360 degree visits are made available and as soon as the sale is concluded, Hubstairs assists customers by providing customised 3D views, tailored to the property and their specific needs. Then all the client has to do is buy what's on the shopping list drawn up by Hubstairs's interior designer. "We are capable of recreating all sorts of living environments, with realistic photographic quality" adds Chloë Jammet. "By the end of 2019, we want to offer promoters a completely integrated interior design solution to assist customers right up to the delivery of the property and give them an immersive experience."



### **HUBSTAIRS AT A GLANCE**

Location:  
Bordeaux (head office) and Paris  
**60** employees  
**400** architects and interior  
designers

**Over 3,500** real  
estate projects  
completed  
**Over 20,000** pieces  
of furniture modelled

**€1.4M** turnover  
in 2018  
**€3.2M** raised  
in 3 years

**40** promoters'  
clients  
**Over 1,000**  
real estate  
agencies' clients

## Zoom in on two start-ups that are **REINVENTING SERVICES** in the real estate business

### **WeMaintain** *Raising the image of lift maintenance*

"Until recently, lift maintenance was considered an ageing industry, unconcerned with customer satisfaction, with a poor level of service," explains Benoît Dupont, CEO of WeMaintain. These conclusions lead the entrepreneur to launch a start-up specialised in lift maintenance with his partners Tristan Foureur (CTO) and Jade Francine (COO) at the end of 2017. Their ambition was to boost the business. This was a major challenge considering that lifts represent the most commonly used means of

transport in the world: in France alone, 100 million rides per day, i.e. 2 billion kilometres, the equivalent of 7,000 journeys between the Earth and the Moon\*.

The start-up distinguishes itself by putting the technician at the centre of its activity. "Contrary to other jobs, it's not possible to automate the maintenance technician's work: the quality of the entire service relies on the technician's know-how and motivation," points out Jade Francine. Algorithms can only

contribute to the management of this highly regulated activity. What is at stake is the guarantee of more transparency for clients — (Building Managers, condominiums, Property Managers) — they can access an on-line platform that is completed in real time in a completely transparent manner by the technician during the intervention. Digital technology also makes it possible to disseminate information which in turn generates a reactive service. "We have a very pragmatic approach to the job: we are here in response to a need. Our aim is to achieve this by empowering the technician, who is the cornerstone in terms of quality of service," concludes Benoît Dupont.

\* France TV info - 25/08/2019



© Arthur Enard

#### **WEMAINTAIN AT A GLANCE**

Location:  
Île-de-France  
**32** employees

€9M raised  
in 14 months

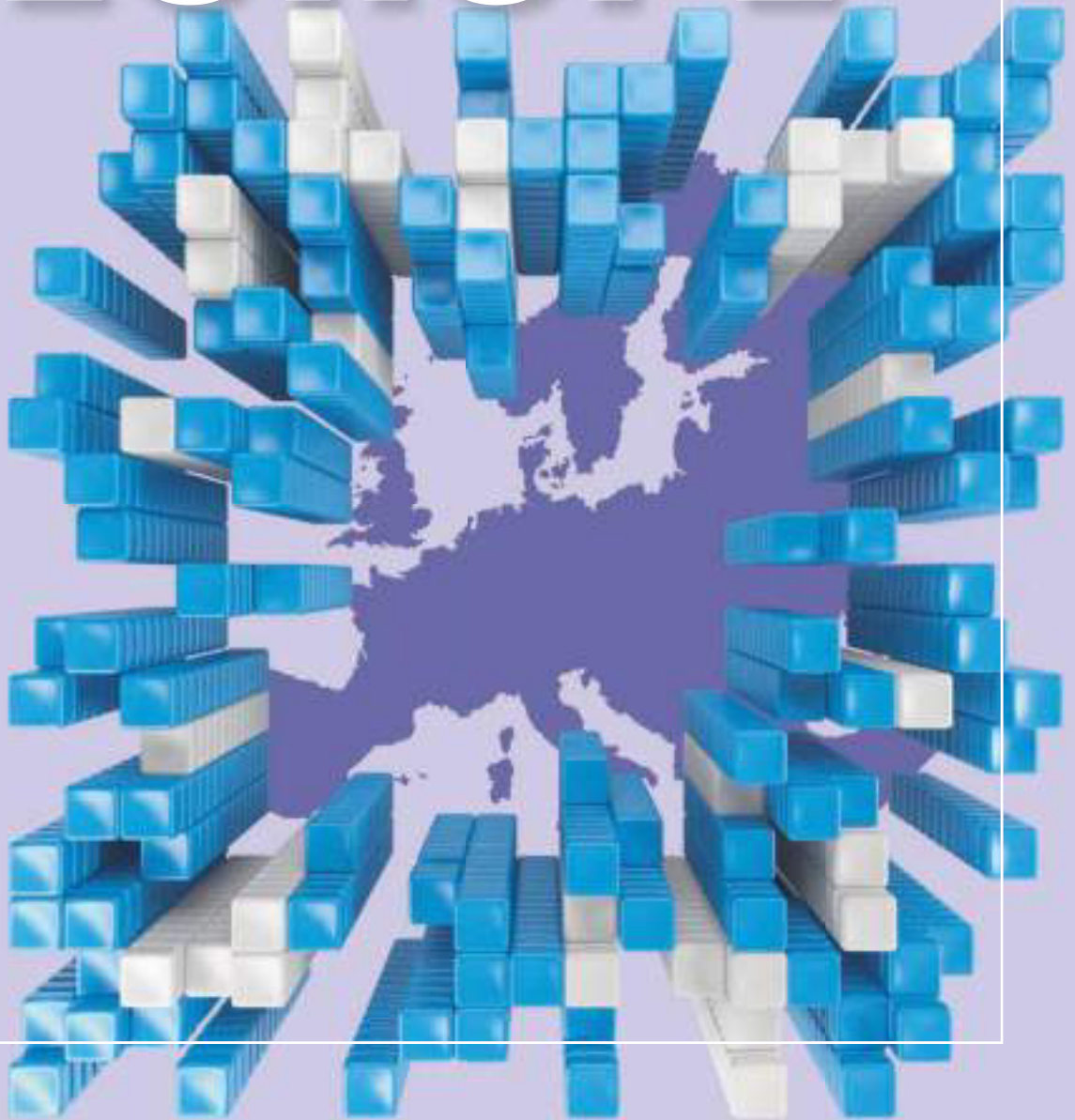
**Over 100** clients  
(70% tertiary,  
30% residential)

**No lost** contracts  
since launch  
at the end of 2017



TERRITORIES

# PROPTech IN EUROPE



**Idriss Goossens, founder of PropTech Lab, a network of Belgian PropTech start-ups and of PropTech House, an alliance of European PropTech organisations, is committed to structuring the market on a European level. Europe, still in the early stages of PropTech, especially in comparison to the United States or China, has everything to gain by supporting start-ups in the sector and by building up the regulatory framework necessary for structuring the market.**



© Idriss Goossens



**IDRISS GOOSSENS**

Founder @ PropTech Lab  
and PropTech House

## Coordinating national initiatives to promote European PropTech

### What position is Europe in, in comparison to the rest of the world? Is it ahead or behind?

In terms of innovation, there are already European programmes aimed at supporting entrepreneurship, such as Horizon 2020 for example, that has already subsidised numerous start-ups. On the other hand, in the field of PropTech, Europe is lagging behind. The figures speak for themselves: out of 36 unicorns in the global PropTech sector, 21 are in the

United States, 12 in China, 1 in the Philippines, 1 in India and 1 in Hong Kong. Therefore, 0 in Europe. The European ecosystem is however rich and promising, with 2,936 start-ups to date.

### What are the main barriers to the development of PropTech start-ups in Europe?

Above all, the problem lies in the fragmentation of the market. Each member

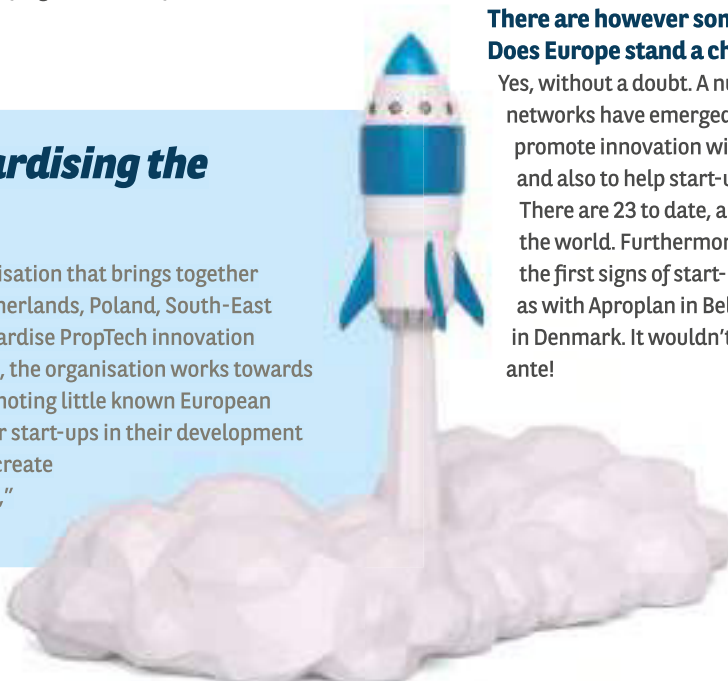
country has its own culture, language, legal system and industrial standards that make European structuration difficult. Access to funding is also a barrier: a mature start-up, worth over €5M, for example, will have trouble finding venture capital companies capable of providing support. At that level, funding comes essentially from the Silicon Valley — San Francisco is in 5th place as provider of investments in Europe.

### There are however some positive signs. Does Europe stand a chance?

Yes, without a doubt. A number of national networks have emerged spontaneously to promote innovation within major groups and also to help start-ups get organised. There are 23 to date, and that's unique in the world. Furthermore, we can observe the first signs of start-ups coming together, as with Aproplan in Belgium and GenieBelt in Denmark. It wouldn't take much to up the ante!

### PropTech House: standardising the European market

PropTech House is a neutral, non-profit organisation that brings together five national founding networks from the Netherlands, Poland, South-East Europe, Spain and Belgium. Its aim is to standardise PropTech innovation initiatives on a European level. To achieve this, the organisation works towards reinforcing international collaborations, promoting little known European subsidies or identifying the factors that hinder start-ups in their development and putting forward solutions. "Our aim is to create the conditions for the first European unicorns," concludes Idriss Goossens.





## ***The search for the big idea***



© Farideh Fotografie

As Managing Director and Head of Investment Consulting, **Andreas Völker** has headed up BNP Paribas Real Estate Germany Consulting since 1999. Here he explains how he thinks Germany is an attractive spot for entrepreneurs and funding right now. PropTech is however still searching for the big idea that will disrupt the sector or at least parts of it.

Since 2013, PropTechs in Germany have mushroomed, seen as beacons of opportunity to deal with the new challenges of digital transformation in the real estate industry. But only about 5% of all PropTechs stand out. "We can organise them into four groups," outlines Andreas. "They focus on technical solutions for smart buildings, property management, and the planning and architecture stage with Building Information Modeling (BIM). The final group is everyone else, mostly document management."

### **Market support**

Germany actively supports its entrepreneurs. 'At the Frankfurt Economic Development Authority, for example, is a person who connects start-ups, investors and capital.' Berlin also hosts public and private marketing campaigns and conferences for entrepreneurs and venture capital. "Major landlords and property owners are also positioning themselves," Andreas notes. "By investing in PropTechs, they incorporate innovation and rejuvenate their workforce. It will be interesting to see how the small, creative start-ups fare in a larger, professional environment."

### **The future**

Andreas' vision is that a real estate cloud be developed. Like a music-streaming service, complete and up-to-date information accessible to everyone would go beyond innovation to proper revolution. "It's a collaborative issue. It would be a giant step forward for the entire industry."



## *Embracing the power of analytics*

### **Making the most of information to make better decisions**



© Joe McGortly



© Joe McGortly

"In the UK," states **Stephanie McMahon, Head of Research at BNP Paribas Real Estate UK**, "PropTech is predominantly focused on

information, transactions and management. It captures and organises a wealth of information to best serve the needs of all stakeholders in the property sector." Its aim is to improve productivity and therefore the profitability of any given real estate space. **Jason Beedell, Research Director at Strutt and Parker**, working specifically with the company's farm management team gives one example: "Farmers can use technology to decide what to plant, where and how to manage crops, helping to make profit from their land".

### **Uptake and support of PropTech**

"The residential segment is most active in the UK," Stephanie continues, with 58%\* of all PropTech. Portals and online agents like Zoopla and Purple Bricks which point consumers to their ideal property. In the commercial segment, providers such as Yardi and Argus manage data and flow between occupants, agents and owners. And yet, farming is a good example of how not everyone is benefitting from PropTech. "The top 25%" of farmers use different kinds of innovation for soil and crop assessment, creating financial gains for them," explains Jason. "But the bottom 25%" are much less engaged and the difference in productivity and income is over 100%". Happily, the UK government has stated in the last year its desire to invest in Agritech R&D to increase farm productivity at a lower environmental impact. Their support is crucial."

### **Smarter cities, farms and people**

Stephanie and Jason are both optimistic about the future. "How people use space, unstructured data and predictive analytics are huge growth areas that will benefit real estate investors, developers and occupiers and help make transactions more transparent," says Stephanie. "So many technological options are becoming available that a wide range of businesses can use, to improve their offer, their service and their environmental impact," Jason summarises. "And a lot of new skill sets will be needed to maximise the benefit from them."

\* Unissu - 2019

\*\* Farm business survey, various years, 2018



# THE FUTURE OF REAL ESTATE



# New skills mean better connections

To gain a better understanding of what is at stake with PropTech and its innovative strategies, we sought the opinions of H        , BNP Paribas Start-up Acceleration Director, Antoine Robin, BNP Paribas Real Estate Open Innovation Manager, Thomas Bardawil, Head of the Smart City division of Plug & Play (USA), and Fredrik Mattsson and Markus Andreasson from the Chalmers University of Technology (Sweden), authors of the thesis *Value Creation Through Digitalization in Real Estates*

**"WE BELIEVE THAT PROPTech PLAYERS WILL BRING ABOUT DEEP TRANSFORMATION IN THE FIELD AND WE WANT TO INTENSIFY OUR COLLABORATION WITH THEM."**



**Antoine Robin**

BNP Paribas Real Estate  
Open Innovation Manager

**Major players in the real estate sector are paying close attention to PropTech. Are we heading towards an incubation model? What is the situation for BNP Paribas Real Estate?**

**Antoine Robin:** If we take a look at the number of start-ups that are being created and the total amount of capital raised (  375M in France over the first semester in 2019)\*, PropTech today looks just like FinTech did five years ago. The property sector, historically considered unimaginative, has a number of major challenges to face. New players using new technologies are defying

the status quo by positioning themselves alongside or in competition with long-standing players. We believe that PropTech players will bring about deep transformation in the field and we want to intensify our collaboration with them. In order to support this transformation, a number of major groups now have their own incubators — this has become an underlying trend. BNP Paribas Real Estate is lucky to be part of the BNP Paribas group and in this capacity contributes to BivwAk!, the Group's cultural and digital accelerator. BivwAk! has already given us the opportunity to launch

\* PropTech: Big Bang or passing fad by PwC and Real Estate, September 2019





## Hélène Mouly

Start-up Acceleration Director  
@ BNP Paribas

and support innovative platforms such as Property Data Insight, ColivMe or the online subscription site for SCPI Accimmo Pierre.

**Hélène Mouly:** Over the past year or so, we have observed, in the European start-up ecosystem, the emergence of acceleration programmes focused on Smart Cities, that bring together various PropTech players. Three years ago, BNP Paribas created a start-up accelerator programme with Plug & Play, initially focused on FinTech and InsurTech to support the Group's digital transformation. Since the beginning of the year the programme has expanded to encompass Smart Cities, with Real Estate and Arval as active partners. The aim is to carry out POCs (Proof of Concepts) or pilots with Group business lines or functions over a three-month period and if the results are conclusive, go on to the production stage (i.e. contractualisation with the start-up). To date, 47 pilots have been conducted and 36 start-ups accelerated with a conversion rate of 35% (i.e. 35% of pilots passed to production stage with a BNP Paribas business line or function) – which represents a genuine success. Since the first phase, BNP Paribas Real Estate has embarked on three pilots with three start-ups.

### As innovation becomes the rule of thumb PropTech start-ups won't all be able to survive. How will the market develop?

**Antoine Robin:** Certain start-ups are in the process of developing their structure and will naturally become scale-ups. Soon we will witness the concentration of some PropTech specialities while others unfortunately will fail. Precise figures concerning the rate of failure for start-ups are difficult to come by; however 90% is a figure that is often put forward. Other estimations place this rate between 60 and 75%\*\*. It is therefore necessary to have a series of tools and resources to monitor the market and if needs be, to provide financial or business development support, so as not to let key opportunities pass by unnoticed. I'm convinced that we must connect with those start-ups that are in line with the issues and challenges of our business lines. This is why BNP Paribas

## Start-ups that BNP Paribas Real Estate works with

**Havr** This French start-up designs the access control systems of tomorrow. One notable example is "Bright Lock", a connected lock that opens (and closes) with a smartphone's camera flash.

**Giraffe 360** This PropTech start-up has recently launched its HD camera, Model 3, that automates a number of tasks involved in the preparation of a property sale, such as measuring, floor plans, inside views and virtual visits.

**Envio** The intelligent solutions put forward by Envio solve problems of comfort and energy in commercial buildings. Its universal IoT controller monitors and controls temperature, humidity, electric current, daylight and building occupation. Its interactive platform optimises the management of these parameters as well as those of HVAC (heating, ventilation, air conditioning), lighting and equipment.

Real Estate is part of the BNP Paribas Group Venture Capital fund, Opera Tech Ventures, through which we can study capital investments.

**Fredrik Mattsson:** The PropTech start-ups that will survive are those who build close ties with property owners and who team up with other fields of expertise via joint ventures and collaborations that will help them become real market players. In this way, teams work according to a workshop model and create added value together.

**Markus Andreasson:** Open innovation will enable us to create common value across the whole market. It's all about collaboration rather than competition and this is how the market will develop — as in Sweden. Companies that used to focus on profitability and the management of their own businesses are now working together to learn more from each other.

"THE START-UPS THAT WILL SURVIVE ARE THOSE (...) WHO TEAM UP WITH OTHER FIELDS OF EXPERTISE VIA JOINT VENTURES AND COLLABORATIONS."



## Fredrik Mattsson

Chalmers University of Technology

\*\* Source:  
<https://www.letemps.ch/economie/silicon-valley-lechec-etape-vers-reussite>

## "CUTTING-EDGE KNOWLEDGE AND ELITE KNOWLEDGE GROUPS WILL EMERGE, SEEKING OPTIMAL TIME AND COST MANAGEMENT."



© Mikael Göthage

**Markus Andreasson**  
Chalmers University of Technology

### Is the open innovation model viable in the PropTech sector? If so, what might it look like? Who could take part?

**Thomas Bardawil:** We really believe it's a viable model. Open innovation has real significance in the PropTech sector, between a building contractor and a Property Developer. At the start of a partnership there can of course be some reluctance, but in fact, there is no secret to what technology is out there. It's simply a question of how to tap into and bring about innovation, because after all, you can know all about the different trends, know what's going to happen, but if at the end of the day, your company isn't equipped with the necessary tools to bring about the transformation, you won't get anywhere. There will always be certain subjects that some will prefer to keep confidential. That's all part of the system. Open innovation doesn't necessarily lead to sharing everything, but working together creates value because different people have different strengths and different weaknesses. In the end, we must keep in mind that a rising tide lifts all boats.

**Fredrik Mattsson:** What we're talking about here is value generation and everyone is concerned. It goes both ways. On one hand, tenants know things, can ask for others and can also have lots of ideas. On the other hand, owners can offer them things they hadn't thought about. This goes to show that open communication is necessary to find the best solutions, from inside out and vice versa.

### In the long term, will there be synergies to bring about skill clusters?

**Markus Andreasson:** Today, technological evolution is so quick that all players in the sector must work hand in hand. One company alone cannot keep up with the pace. We are moving towards more and more synergy and efficiency. Cutting-edge knowledge and elite knowledge groups will emerge, seeking optimal time and cost management. The pooling of resources will only speed up this trend.

## *A programme focused on Smart Cities within Plug & Play*

The Smart Cities programme, launched at the start of 2019, is based in Paris and Madrid. It brings together players in real estate, construction, energy, sustainable development and IoT, aimed at speeding up innovation in cities. Today 11 start-ups, chosen from 100 identified at the start, take part in the programme. They come from the United States, Australia, Israel, China... a real international melting pot of culture and brain work to conceive the cities of tomorrow. The second edition has just been launched meaning about 15 start-ups will be selected to take part in the programme.

**Thomas Bardawil:** Yes, no doubt. For the time being, each player is doing the work to commit to innovation. They will surround themselves with specialist dedicated teams and design the processes that will enable them to embark on the route to technological transformation in a concrete way. Once confidence is there, they will expand, open up and reach out to other players to form bridges and eventually clusters.

**Hélène Mouly:** Yes, of course, it's already the case in the automobile industry: to be able to face up to the GAFA (Google, Apple, Facebook, Amazon) and autonomous vehicle technologies, some German manufacturers have chosen to form alliances to be stronger, quicker and commit to significant budgets. After an initial stage of internal acceleration, some skill clusters could easily and naturally emerge in the real estate sector.

## "ONCE CONFIDENCE IS THERE, THEY WILL EXPAND, OPEN UP AND REACH OUT TO OTHER PLAYERS TO FORM BRIDGES AND EVENTUALLY CLUSTERS."



© Thomas Bardawil

**Thomas Bardawil**  
Head of Plug & Play Smart City business line

# “One step ahead in the residential property sector”

**Olivier Bokobza, Managing Director, Residential France for BNP Paribas Real Estate, analyses the technological innovations underway in property development.**



## **What impact does PropTech have on residential property development?**

Considering that real estate projects unfold over long periods of time and that behaviours are constantly changing, our role as Property Developers is to be one step ahead in terms of our solutions. One of the items on the road map of our residential property teams is to make operations compatible with the technology of the future. To date, fibre has been deployed in 100% of our programmes and we are providing sufficient space in flooring to accommodate new ducts according to technological evolutions. Not only are we one step ahead of changing ways of interacting with buildings but also, as responsible Property Developers, we have an objective to make these innovations compatible with buildings in the long term.

## **What is PropTech's position in the residential property sector?**

We delivered our first connected building with “Issy Préférence” (see boxed text), in Issy-les-Moulineaux. We design buildings that can be updated, just like software, but in the end, it's the residents who have control over the situation. This is why we stay by their side

for the first three months to help them learn how to master the technology. Beyond these pioneering projects, connected buildings are becoming more democratised; but the process does take time: about five years between the developer's decision and arriving in the hands of end users.

## **How do these innovations act as accelerators for smart cities?**

Inhabitants reap the benefits of these innovations, but so do the neighbourhood and the city. Today, buildings interact with their urban ecosystem in terms of energy costs as well as data sharing, because with smart grids, energy consumption is no longer

individual but collective. By producing energy and controlling their own consumption, smart buildings lead to shared intelligence among buildings. This creates a virtuous circle: renewable energy produced by new buildings serves the needs of other buildings. However, for this sort of project to succeed, local authorities must take necessary steps to upgrade networks – an opportunity to create new synergies between public and private stakeholders!

## **Do you work in collaboration with start-ups to put forward evermore innovative solutions?**

BNP Paribas Real Estate works with a variety of start-ups. OWWI (see Moodbook chapter) is one we have invested in that has designed a patented system of customised and adaptive partitions, that makes it possible to change rooms around easily, by adding on a bedroom for example. With OWWI, BNP Paribas Real Estate is creating the habitat of the future with customised, modular apartments. In the same vein, continually anticipating the usages of the future, we have also launched ColiveMe (see Moodbook chapter), the first co-living marketplace in Europe.

## **ISSY PRÉFÉRENCE, Hyper connected homes**

This world premiere programme, delivered in 2017, offers communicating and connected homes entirely controllable via Siri (Apple), Alexa (Amazon) applications and Google Assistant. Using their smartphone, residents can remotely control access to their home, heating, lighting, shutters or even electrical appliances. The programme was designed in collaboration with Legrand, worldwide building specialist in electrical and digital infrastructures and Netatmo, the French leader in connected objects.

Dan Hughes, from Alpha Property Insight and LIQUID REI, led the PropTech transformation strategy at the Royal Institution of Chartered Surveyors and is a widely recognised data expert. To him, buildings are on their way to becoming purveyors of experience in the Smart City landscape. Data and technology are paving the way for this transformation.



© Vereniging INREY / INREY Young Professionals Conference 2018



**DAN HUGHES**

Founder @ Alpha Property Insight

## ***Buildings are becoming a service in a city's ecosystem***

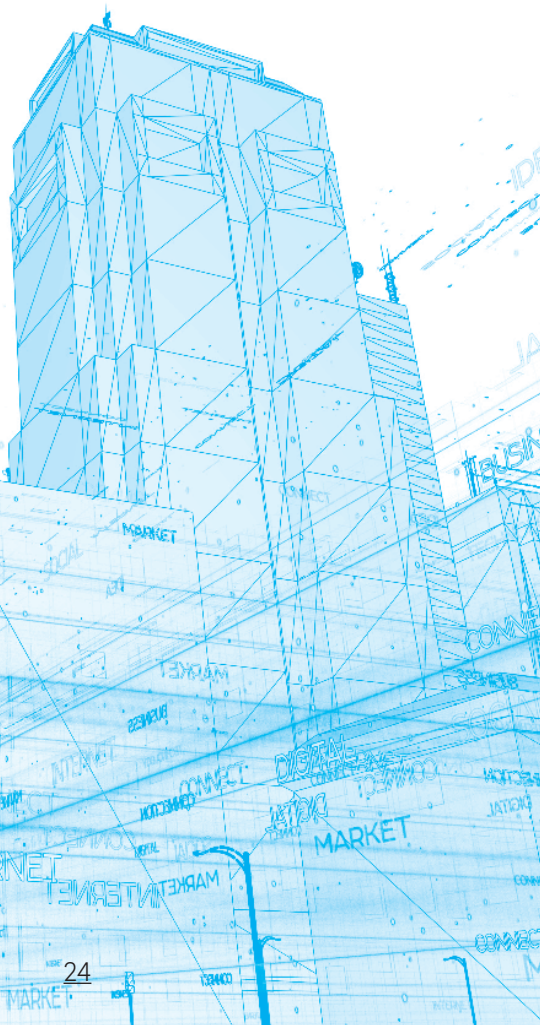
### **DATA TELLS ALL**

A building's surroundings are increasingly significant. Traditionally infrastructure was built and residential or office buildings functioned separately. Increasingly they are being linked up and becoming more dependent on one other. There is also how a person uses the building itself. Air quality, natural light, temperature and energy efficiency are factors too. For Dan, it's clear: "If you look at designing a building, you can't design it without being aware of the surroundings. People want to have a nicer experience at work and home." Data underpins how people use a building and its surroundings. "The important thing is to get the appropriate level of data to help you understand what the people who are using your building want."

### **TECHNOLOGY PIECES IT ALL TOGETHER**

Which is where technology comes in. "In terms of construction, new technology means

we can become much more efficient in the construction of buildings. As the technology that goes into the building is recognised as being more valuable, people will increasingly invest in that upfront." Building Information Modeling (BIM) is one example. By foreseeing how a building will be used by the different owners and occupants, BIM can make construction more efficient, sustainable and safer. Overall, buildings are becoming much more suitable and attractive. "If we take an office building, it is no longer a box that we go to work in but an environment and experience that really helps us do our job. This could be through better understanding when designing the building, the app that you use at work or the sensors in the building which make sure it's a better experience. I think technology and data are going to be significant drivers to the built environment, to the people who matter the most, the people in the building."





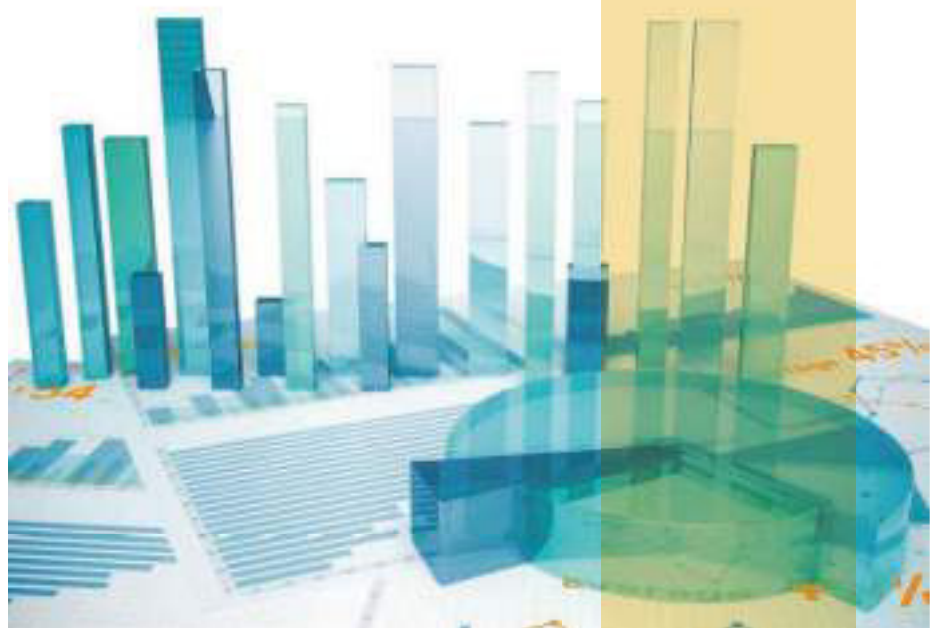
# PROPTech: CAPITAL POURING IN

**Not so very long ago, when PropTech was still in its early stages, FinTech was the main focus for many investors. However, over recent years, the number of start-ups in the field has exploded, whetting the appetite of many investors. The real estate revolution is in full swing, backed by more and more capital.**

**T**he United States, pioneers in PropTech, were the first to identify opportunities in the sector and begin investing in it. European investors followed suit a few years after and started by looking into residential property. Two innovative start-ups, Nested (an on-line real estate agency based in London) raised £120M<sup>1</sup> in 2018 (the biggest fund raising campaign in Europe over the past 5 years), and Meero, a French start-up specialising in real estate photography (€45M collected in 2018<sup>2</sup>), rapidly stood out from the crowd. The tertiary sector hasn't been left wanting and is catching up in terms of investments. A sure sign that goes to show that the market is reaching maturity is the emergence of specialised funding at a European level, such as PiLabs (UK) or Stonup Capital (France). This demonstrates that the PropTech movement is strong enough to generate a range of investment strategies.

## EMERGENCE OF A GENUINE ECOSYSTEM

Speciality funds, alongside business incubators, corporate investors and business angels have emerged and are working hand in hand to support start-ups and help them grow. Together they have worked towards including R&D for the first time within the real estate business. The opportunities are there for all stakeholders — for companies it's a good way of including technological innovation in their activity, especially at a time where digital transformation is crucial. PropTech will give them the opportunity to take the culture of change on board and as a consequence, bring about deep changes in the real estate business. Professionals can also have greater insight into upcoming market trends, giving them the chance to be



## INVESTORS SEEM TO BE MORE INCLINED TO MAKE A BIG INVESTMENT IN A SINGLE PROJECT RATHER THAN TO SUPPORT SEVERAL.

more reactive. For business angels, this is an opportunity to make smart investments that capitalise on the transformations in the sector. As for business incubators, they encourage entrepreneurship by granting access to a professional network.

## INCREASINGLY FOCUSED INVESTMENTS

Investments in PropTech are beginning to take shape. Investors seem to be more inclined

to make a big investment in a single project rather than to support several. The figures speak for themselves: in 2017, there were 1,082 fund raisings initiatives for \$11.5B, with an average of \$10M, and in 2019, this went down to 164 fund raisers for \$6B with an average of \$37M<sup>3</sup>. So, what are the implications? Probably that PropTech start-ups are becoming more mature, as investors choose to invest in Series-A funding rather than provide seed capital.

## AN OPTIMISTIC FUTURE

Most investors agree that investments in PropTech aren't about to slow down, considering environmental issues that require the answers and solutions PropTech can provide. Working with start-ups encourages traditional players in the real estate business to adopt a fail fast, learn quickly position that leads to innovation. It's all systems go!

<sup>1</sup> <https://techcrunch.com> - 11/11/2018

<sup>2</sup> [www.frenchweb.fr](http://www.frenchweb.fr) - 12/07/2018

<sup>3</sup> Source: Unissu

**Opera Tech Ventures was launched at the beginning of 2018; it is the BNP Paribas Corporate Venture Capital fund, within BNP Paribas Capital Partners. With four start-ups being financed from 1,500 opportunities, Opera Tech Ventures makes carefully chosen investment choices in order to support the transformation of the financial industry. We met Thibaut Schlaepfi, Managing Director of Opera Tech Venture.**



© Yves Durand (BNP Paribas Cardif)



**THIBAUT SCHLAEPPI**

Managing Director @ Opera Tech Ventures

#### **What does your fund set out to do?**

Our vocation is to provide financial support for start-ups that put forward disruptive services. Ultimately we have a dual objective: to achieve financial performance in the medium term and anticipate the transformation of BNP Paribas business lines by encouraging open innovation contacts.

#### **Why is it interesting to invest in PropTech today?**

We constantly observe the transformations across the entire financial industry carefully; as there is an element of financial speciality in real estate, it comes within the scope of Opera Tech Ventures, in the same way as FinTech, InsurTech, WealthTech and RegTech. Investments in Venture Capital have multiplied fourfold in five years with over \$200B invested in 2018. PropTech started a bit later but the sector is going through a phase of growth, and apart from some notable exceptions, is now more accessible than FinTech, which makes it easier for investors to take up a position on the sector with the idea of making a bigger profit. This can manifest itself in BuildTech as well as in real estate funding, the platformisation of the market (supply/demand) or in co-living/co-working, building management etc.

#### **Have you noticed an increase in PropTech start-ups?**

There are more and more requests concerning projects that want to transform real estate, such as solutions based on artificial intelligence and blockchain, in view of reinventing the real estate value chain for example. The number of start-ups that break through can serve as an indicator of a market where innovation is a source of transformation. PropTech already has dozens of unicorns across the world, and this goes to show that real opportunities actually exist. Start-ups such as Airbnb, Compass or OpenDoor are encouraging examples for entrepreneurs and help stimulate the market.

#### **How do you monitor the start-ups you support? What tools do you intend setting up to help them grow?**

Our fund can invest between €1 and €10M for each round. In 2018 we examined 1,000 applications. Our aim is to help entrepreneurs develop their projects by giving them adequate financial support as well as sharing our understanding of the industry. In addition, with other BNP Paribas business units we help entrepreneurs develop their professional contacts which can in some cases represent meaningful opportunities.

**"THE SECTOR IS GOING THROUGH A PHASE OF GROWTH AND IS NOW MORE ACCESSIBLE THAN FINTECH, WHICH MAKES IT EASIER FOR INVESTORS TO TAKE UP A POSITION ON THE SECTOR WITH THE IDEA OF MAKING A BIGGER PROFIT."**





# PROPTech GEMS

## OWWI

**Modular apartments**

The aim of this innovation is to give buyers of new properties control over the configuration of their home. With this new patented method, electricity is distributed in a cable fixed to the peripheral supporting walls of the home.

Movable partitions are set against supporting walls and in this way are connected to the cable via specific connectors.

Partitions are made movable at a very low cost and can be changed freely according to the different stages in occupants' lives.

Thanks to the possibility of choosing where to place partitions, the home becomes made to measure.

## DEEPI

**Measuring to improve**

In Italy, BNP Paribas Real Estate Property Management has asked Deepki to conceive a digital asset book. Deepki puts forward possible enhancements, in particular in terms of cost reduction or energy consumption, by collecting data from buildings managed by BNP Paribas Real Estate Property Management. To date, 130 buildings are under analysis — eventually, over 600 buildings will be concerned. BNP Paribas Real Estate Property Management will then hand over these analyses over to its clients and support them in finding the best budgetary and environmental options.

## IMMOPRICE

**Estimating the value of property in a few clicks**

The Belgian start-up ImmoPrice, founded in 2014, is based on the principle of an Automated Valuation Model. The algorithm takes a number of criteria into account (such as the situation of the property, its type, results of public auctions and the state of the market, etc.) to establish its value. Designed for professionals and private individuals alike, ImmoPrice has to date completed 127,000 estimates. At the request of BNP Paribas Fortis, the start-up has, thanks to its algorithm, analysed all the evaluations of residential properties on the [www.propertyvalue.be](http://www.propertyvalue.be) website, to ensure their accuracy.

## ON-LINE SUBSCRIPTION WITH SCPI ACCIMMO PIERRE

### Making investment easy

The aim of SCPI ACCIMMO Pierre, a project put forward by BNP Paribas REIM France, is to democratise real estate investment funds for the general public via an on-line subscription platform. Investments start at €203 and can go up to €15,000 per subscription. Formalities have been simplified, providing a genuine advantage for users: learning modules, electronic signature for documents and access to a personal space. All transactions can be done on-line, and clients can invest money at any time according to their means – a small revolution in indirect real estate investments!



## EVENLY

### Software built for long-term sustainability

Evenly is a software consultancy based in Berlin with a focus on mobile, TV, voice software and wearables. As platform specialists their core skills lie in the conception, design and development of native digital products for a mobile future and consultation during all stages of the development process. For BNP Paribas Real Estate Germany, they developed the QuickForm iOS app, a digital assistant for the compilation of buildings and locations. In this application, different criteria such as asset distribution, a location description and rating as well as property details are assessed. Its goal is the professionalisation and standardisation of site inspections; it improves efficiency and helps avoid errors.

QuickForm can currently be used in German, English and French.



## ARCHITRAVE

### Solutions for the entire real estate life cycle

Architrave provides solutions for document chaos as well as for the management of large amounts of data and the development of truly digital workflows. Documents, data and processes are managed on a central platform. This leads to significant increases in efficiency in all phases of the real estate cycle. BNP Paribas Real Estate Germany uses Architrave as a transaction data room for the purchase and sale of its clients' assets. Architrave ensures that large amounts of data are quickly migrated and available and that the transaction is handled securely. The Berlin-based company was named "PropTech of the Year" by Immobilien Manager Magazin in 2018.





## RECAP

### Bettering agricultural processes for farmers

RECAP is a digital platform which allows farmers and government bodies to access and share data. The application allows farmers to monitor crops on their land, to ensure they are up-to-date on the latest regulations and to receive personalised advice on managing the land. The aim is to make processes more efficient for public organisations and increase farmers' compliance with regulations. Five countries (Greece, Spain, Lithuania, Serbia and the UK) were involved in the project, which ran for 30 months and was funded by the European Commission. The project received funding from the European Commission's Horizon 2020 Research and Innovation Programme under Grant Agreement no. 693171.







## COLIVME

### 1st co-living platform in Europe

#### Modern co-living solutions

Based on the observation that for the young people of today, finding a new home is a difficult challenge, both in terms of the quality and affordability of homes, ColivMe offers modern co-living solutions for young generations in line with their expectations (sports facilities, cinemas, co-working spaces etc.). Future co-livers are just a few clicks away from finding both housing solutions and a community which corresponds to them. Within this emerging market, ColivMe also helps to support operators as they develop their offering across Europe.

## FLUICITY

#### Day to day citizenship

Fluicity, a start-up implanted in France and Belgium, is a participative platform whereby citizens can contribute usefully to decisions that concern them, via technology and data analysis. Citizens can put forward their ideas and take part in projects and surveys organised by local authorities.

Rewarded by the MIT (a prize awarded to the 10 best French innovations in 2015) for its cutting edge solution to a contemporary problem, Fluicity targets local authorities and private stakeholders alike such as developers for example.



#### Legal Information

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