



The Future of Work and its impact on Real Estate

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Prologue

Future of Work and New Normal

“Future of Work” and “New Normal”: Two of the major terms that define the way we will be working together in the future. Unfortunately, the definition of these terms and their impact is far from clear. The reason for this uncertainty is mainly because we are still in the midst of a major transformation of the world of work. With the Covid-19 pandemic as well as the discussions on sustainability and ESG, this transformation has picked up immense speed in the last two years.

But some points are already clear: Employees and employers are almost unanimously observing a positive development of remote work and rate working from home at least as productive as it used to be in the office before the pandemic. As a result, the vast majority of employees will spend more time working from home in the future. On the other hand, office spaces need to remain attractive and suitable, if we are to expect employees to continue to use them. After all, it's not just about the flexibility of being able to choose where to work, but also communication and interaction with colleagues, customers and suppliers that are key factors for a successful working model and satisfied employees. How else are innovations going to emerge and how else can creativity be fostered, if not in an (office) community?

Therefore, it is not surprising that most companies will want to follow this movement

and are planning to adapt their working models and office space to the new requirements. However, many companies are still reluctant to take the leap. The future is too uncertain, and experiences are still too new. What is more, the market's reaction has been too varied so far. However, a win-win situation could arise for employers. And this despite the fact that at the outset, a lot of money must be invested into new working methods and processes, renovating spaces and technical infrastructure. Because ultimately, the change stands to be a worthwhile one financially, if space is reduced and real estate-related costs can be cut.

What remains important is that different perspectives are taken into account when developing new working environments. In our opinion, the implementation of new work concepts can only be successful if important strategic issues in all three relevant areas – culture, spaces and technology – are considered. In this whitepaper, together with PropTech1, we provide comprehensive insight into these areas and present some PropTech solutions in various categories.

We hope you find this as inspiring to read as we did to write! Happy reading!



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Prologue

Flexible work is here to stay

If there is one good thing to say about COVID-19 is that it has had a catalytic effect on the acceptance of a new kind of work, having forced a flexible working era upon many sectors and companies. The persistent reservations against WFH – work from home – were simply wiped away by plain necessity. And many employees have gotten used to this new paradigm, as current numbers show: In London, a city that has gone out of lockdown and restrictions relatively early compared to much of Europe, office occupancy levels remain steadily low. Whereas before the pandemic, occupancy rates were at around 60%, they plunged to only half of that, around 30%, in April 2022, according to a study by Remit Consulting. From our perspective – that of venture capital investors who closely monitor the transformative changes in the real estate industry – the pandemic will therefore have a massive effect on the real estate occupancy patterns that we have gotten used to.

And this change is here to stay. One reason for the status quo concerning the new approaches to the way we work to become the “new normal” is that forward thinking companies are consciously enabling flexible work practices to attract and retain talent. Employers must be at the forefront of hybrid work opportunities and the digital tools needed to implement the future of work in their business processes if they want to persist in the intensifying ‘war for talents’. Talent, both young and old, are explicitly looking for this newfound freedom, often prioritizing it even above salary concerns, according to a study done by Skynova. Furthermore, the ability

alone to hire across the entire world increases the talent pool available exponentially. Even if the most conservative corporate CEOs would like to see their workforce back in battery cage-style offices, their Head of HR will point out the folly of this train of thought.

Changes in fundamental aspects of our everyday life brings along equally fundamental market change– developments that should be carefully watched by all companies. If the office space is substantially changing, this will also have a long-lasting impact on utilization of the residential sector for work, thereby altering the way real estate investors will act upon and value their portfolios.

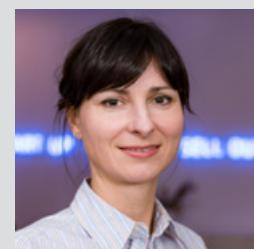
Many of the world’s brightest entrepreneurs have risen to the task of facilitating this change. We at PropTech1 have tracked the impact of the future of the work and the war for talent trends closely, which has resulted in investments in Desana and Kollabo from our side. We are bullish that many more cohorts of founders and startups will find ways to profit from this transformation. Companies and (real estate) investors are well-advised to engage constructively with this process in order to realise these economic advantages.

We are delighted to partner up with PwC to take a deep dive into the many different aspects of the changes and present a selection of various solutions that are out there that companies from all industry sectors can benefit from.

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Executive Summary

The Covid-19 pandemic has forced a flexible working era upon many sectors and companies – and it is here to stay.

While the ability to work from home has become a necessity, the advantages of the office or flexible workspaces across the globe for an increasingly mobile workforce have not lost their value. More than anything else, the pandemic has shown the importance face-to face interactions have on collaboration.

Employers must be at the forefront of hybrid work opportunities and the digital tools needed to implement the future of work in their business processes if they want to persist in the intensifying ‘war for talents’. The ability alone to hire across the entire world increases the talent pool to chose from exponentially.

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1 The Future of Work

1.1 The pandemic and the changes it brought

The way we work has been undergoing significant transformation for years. Research institutions and private-for-profit companies have spent time and resources developing theories on how people will work in a technologically enabled future. In the decade before the pandemic, we saw several gradual changes in the way we work. Firstly, there was a shift from physical to digital assets, which allowed work to be more flexible and virtual. Furthermore, we are noticing a change in the nature of the workforce (e.g. free agents, freelancers, etc.) as a result of flexibility becoming such an important factor in choosing a suitable employer.

Finally, the type of work we are doing has changed immensely, leading to a growth in the number of white-collar workers around the world, which reached 1 billion in 2019.

These changes came about gradually; however, they have still impacted people, families, regions, and entire countries, as a change in the way we work can have an immense impact on ourselves and our communities. Most of the academic discussions surrounding this topic have taken place on a hypothetical level, focusing on the long-term future that remains difficult to grasp today.

In March 2020, work in the Western world changed abruptly – or stopped altogether. Most people reading this whitepaper will think of the white-collar worker; however, the changes have become more extensive. The way we buy groceries, see the doctor or play sport, as but a few examples, moved to the digital world instantaneously for many people. While some industries will revert to what might have been considered as being

closer to the status quo ante once the pandemic has finally subsided, many of the changes brought about are here to stay – some more, some less.

It should be emphasized that this whitepaper has adopted a stance whereby the physical presence of the workforce is not essential.

The future of work, as described in this whitepaper, is not accessible to many, especially those that have taken on key roles during the pandemic, such as healthcare professionals or grocery store workers.



1.2 How have the pandemic & working from home affected productivity?

While the technological advancement had already permitted a greater remote/flexible approach before the pandemic, most employees and employers couldn't have imagined a primarily remote work set-up. This changed when they were forced to – and the realization settled in that remote work does work.

A recent PwC analysis found that 38% of employees reported being more productive when working remotely, while only 16% said they were less productive than in the office. An analysis by wfhresearch.com, conducted by three leading researchers in the field of remote work, came to the exact same conclusions and showed that as many as 6 out of 10 workers reported being more productive than expected. A research project conducted on the sales force also backs up these findings, showing that employee efficiency remained steady during the ad-hoc shift towards remote work.

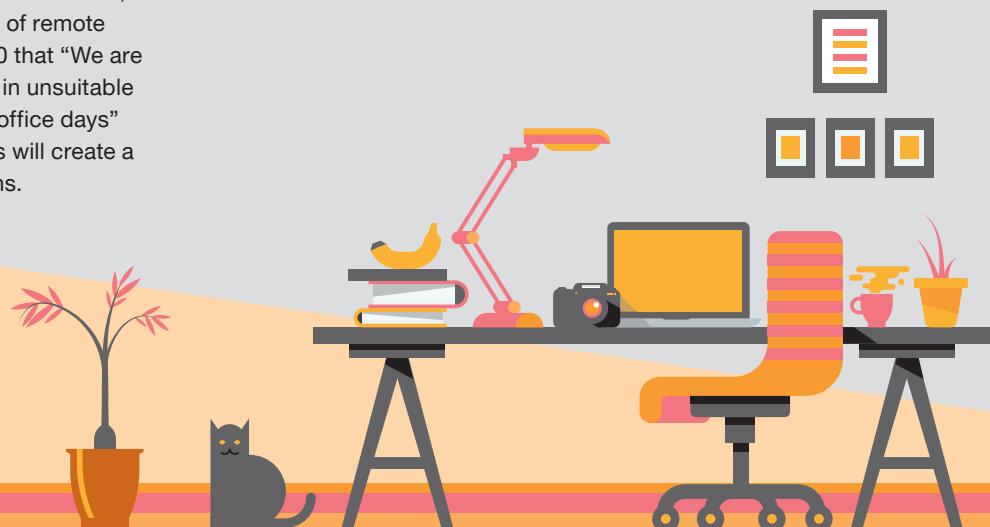
There are many reasons for this. Some are as simple as the time-saving elimination of the commute, the reduction in opportunities to get distracted, more efficient meetings due to a smaller amount of time to travel/schedule, etc. However, other and potentially more substantial benefits of flexible work are related to personal well-being, for example, employees sleep an average of 30 minutes longer when working from home. Increasing sleeping hours can have prolonged effects on productivity and well-being.

However, even researchers who were bullish about the prospects of remote work pre-pandemic have clearly stated the drawbacks we are currently dealing with. Nicholas Bloom, who wrote a paper on the benefits of remote work in 2015, stated in March 2020 that "We are home working alongside our kids, in unsuitable spaces, with no choice and no in-office days" and followed up by saying that this will create a serious loss in productivity for firms.

What is more, offices bring many additional benefits that are lost when working remotely. The art of spontaneously interacting and exchanging ideas with colleagues gets lost. This could mean that potentially great ideas are lost in solitude. Other research suggests that people work longer hours at home for the same amount of output, creating a 20% net decrease in productivity, as suggested by Gibbs, Mengel, and Siemroth in 2021.

While researchers will continue to argue around the potential gains or losses in productivity during and after the pandemic, the reality is that many people have learned to love a certain amount of flexibility in their work environment. It is more than likely that this will be impossible to reverse, which is why companies will have to find ways to adapt to the changing preferences. The "war for talent" is raging all over the world, and the effects of the pandemic can be felt on two levels; one is the added employee benefit of offering flexibility, the other is being able to hire outside the geography one is operating in, increasing the talent pool to choose from exponentially.

This, however, does not mean that modern, dynamic, and increasingly digital office spaces will fall out of demand, as people want to get out the house, see faces, and interact with others. The pandemic has shown the importance face-to-face human interactions have on collaboration. Urban centers will continue to sprawl with life as proximity between people creates ideas, growth, and therefore human advancement.



1.3 How have companies reacted?

The big question we face is how these changes will evolve over time. Will we see a move back to the “old ways”, or will the future of work build on the changes brought about by the pandemic? To start, most companies have not decided on what exactly their future set-up will be. The situation is still too uncertain, with no one knowing when a particular level of confidence will be reached. However, many companies have set the tone on their future working environment, and employees are responding; here are some exciting examples:

Apple

The world's most valuable public tech company's motivation to bring people back to the office seems to be influenced by capital expenditures in real estate. While most companies lease or rent office space, allowing for more flexibility, Apple reportedly invested over \$5 billion in their new headquarters, the Apple Campus in Cupertino, California, which opened in 2017. The campus was designed by leading architect Norman Foster and was founded on the idea of the late visionary Steve Jobs.

Surprisingly enough for a leading tech company, Apple discouraged working from home prepandemic. Having spent that kind of money on state-of-the-art, purpose-built real estate provides one possible explanation on why the company will keep that stance post-pandemic. CEO Tim Cook sent out an internal memo in June 2021, announcing his plan to bring people back to the office on three days per week (Monday, Tuesday, and Thursday), starting in early September (which has since been pushed back due to the Delta variant). However, just two days after the company-wide announcement of the policy, Cook faced a wide push-back from employees, who stated they are being forced

“to choose between either a combination of our families, our well-being, and being empowered to do our best work, or being a part of Apple.” This strong reaction surprised many; yet it shows that even the industry-defining, well-paying tech companies are not excluded from the shift in employee preferences. On the other hand, there are many other tech companies taking a different approach, e.g.:

Meta (Facebook)

Meta Platforms has adopted a more flexible approach towards the work environment. This comes straight from the top: Mark Zuckerberg, founder and CEO, said in an internal memo that he plans to work from home at least 6 months per year and explained the decision by stating that remote work has “given me more space for long-term thinking [...] spend more time with family [...] made me happier and more productive”. He expects 50% of Meta’s entire workforce to be fully remote within the next decade.

Within more traditional business, similar differences in approaches can be found. Some companies have used the pandemic to adapt their policies, while others are stringent on getting people back to the office. Here, companies can be observed that are in the middle of a true cultural clash, with in some cases established players having had business processes in place for generations that are now switching to a hybrid working model, causing a transgenerational shift in company culture.



Financial companies

One business area that has adamantly hustled to get people back to the office are bulge bracket financial institutions, many leaders of whose have publicly stated their intent and gone even further, saying work from home has long-term negative implications. JPMorgan's CEO Jamie Dimon outspokenly criticized exclusive remote work; "It doesn't work for those who want to hustle. It doesn't work for spontaneous idea generation. It doesn't work for culture." Ken Griffin, founder of Citadel, one of the world's leading hedge funds, has used his public standing to directly speak to young professionals, urging them to head back to the office, calling working from home a "grave mistake", as it is "incredibly difficult to have managerial experiences and interpersonal experiences that you need to take your career forward in a remote working environment."

On the other hand, the accounting and consulting firm PwC has recently announced that it will allow its 40,000 US employees to work remotely and live anywhere they want. They are one of the largest employers to really embrace remote work to its fullest. Through the implementation of policy, PwC aims to further attract top talent and to continue expanding diversity.

The conducted PwC research studies "Home remains Office" from Germany found that 93% of the companies surveyed have already adapted or will be adapting their work spaces in the near future to enable flexible working in the long term.

Luke Appleby, co-founder of Kontor, a PropTech startup that helps over 600 scaleups and unicorns globally to find their perfect office space, comments on his view of the future of work:

"What's interesting is that the vast majority of the world's best known scaleups and unicorns we advise are employing an 'office first' strategy, but to attract both new and existing talent back to the office requires a focus on quality. Both in terms of design and specification, ensuring the space is fit for purpose, enjoyable and productive, as well as in prime, easily accessible locations.

Furthermore, the move away from siloed HQs on long leases is only accelerating; flexibility is very much the name of the game. Complimenting a more flexible, fully-managed office space with workspace-on-demand as well as a work from home setup for employees is the new norm. Giving employees the freedom to do their best work, wherever that may be."

Luke Appleby, co-founder of



2 The Future of the Office

2.1 The pandemic and the changes it has brought about

The commercial property sector is facing challenges around how to manage the adoption to new developments in an ever-changing environment. One of these challenges is centered around how to build, design, and modernize office buildings to be able to fulfill not only the wishes and desires of tenants and users, but also to meet regulatory standards. Significant changes will be seen in the way buildings are built, renovated, and operated and real estate asset owners will increasingly ask themselves how they can create buildings that will meet the changing customer needs to stay competitive in the long run. In 2020, the European commercial RE market saw a substantial drop in leasing activities. Take-up rate in the second quarter of 2021 halved in comparison to the average of the past four years, which is just a further push for real estate asset owners to adapt to the changing needs of their tenants.

The office market is currently at a crossroads; previous trends have slowly drifted towards more flexible use of space. Due to the consequences and dynamic developments of

the pandemic, the term office was suddenly extended from only offering day-to-day workstations to also including a flexible working and collaborative environment. Covid-19 played an important role in accelerating the transition towards a new wave often referred to as “Future of Work”.

The lessons learnt from the pandemic have pushed companies to proactively think about the future of their working environment and their real estate, reconsidering the status quo. This however not only includes the changes we have made in our daily work procedures, but also in the design and location of the spaces we are working in.

David Rouven Moecker, Partner at PwC Germany, is certain: “Remote work is here to stay.” Rita Marie Roland, Director of PwC Germany, also emphasizes the economic potential of hybrid work: “Companies that let their employees work from home more often generally need less office space and can thus save costs. Cost savings of 10% are possible, as our recent studies have shown.” And David Rouven Moecker adds: “This may be a top reason why most of our clients are already thinking about suitable future working models or are even already implementing them.”

David Rouven Möcker, Partner at PwC Germany

Let's dive into some of these ideas that will help us to transform our workplace from flexible into hybrid spaces to enable us to ultimately attain a better-quality working environment.



2.2 The results – PropTech and beyond

The changing behavior of employers and employees from around the world has called upon the world's best and brightest entrepreneurs to facilitate this change. A wide range of ventures are being created, catering to the future of work trends, many of which fall into the PropTech category.

PwC as well as PropTech1 have followed the future of work closely, tracking various different approaches to how employers acquire, manage, and interact with real estate in a work environment that is increasingly flexible and remote.

The following PropTechs are only a short (and non-exhaustive) extract of many companies who are aiming to improve "The Office of the Future". They can be segmented according to four different topics (I–IV), although there may also be overlaps.

I) Proptechs – enabling the new way of working

A central aspect of offering a company's workforce the benefits of a more flexible way of working is creating a technological base that makes this manageable and productive. Managers put a lot of effort in turning offices into thriving and collaborative work environments; therefore, these efforts should also apply to work from home settings, enabling connectivity and communication across the employees' screens. Moreover, the advantages of being able to come to the headquarters one day, work from home the next day and choose a co-working space on the third day should not be diminished by an excessive level of administrative burden on both employees and managers.



Creating an on-demand workspace

Desana shares the vision that while work will become more remote and flexible, a large part of the population still values the atmosphere, the amenities, and all other benefits an office space provides. Based on this theory, they built a platform that facilitates the transition to a future-proof work environment for enterprises. It offers a central management platform that allows enterprises to offer their employees maximum flexibility with regards to their work environment by being able to flexibly choose between working at any co-working space or at the company's headquarters.

Desana has built a platform that enables employees to book co-working spaces from 15 minutes up to an entire day, all over the world. They also integrate the HQ into their platform, allowing companies to label bookable spaces within the HQ or any other fixed office space for their employees.

Desana has created a solution that:

1. enables companies to offer a flexible work environment with little hassle;
2. enables employers to get an overview of who is working where at what time.

The chosen strategy, which includes fixed-term leases as well as co-working spaces and a potential working from home component, meets all conceivable needs. The balancing act faced by companies between the benefits of having a fixed office space and the flexibility offered by remote work has resulted in a hybrid model in which both employers and employees are satisfied.

Enabling efficient use of real estate is one part of a functioning hybrid work environment. There are many more key areas where ventures will help businesses cope with "the new normal". Here is a small excerpt of venture-backed companies that are doing their part in enabling the future of work:



Firstbase

Enabling work from home

Firstbase enables all companies, from startups to large enterprises, to setup, manage, maintain, and retrieve all the physical equipment workers need in their remote setup to do the best work they can.

Remote work will change; employees will expect to have similar tools at home as in the office. Managing the purchase, maintenance, and distribution of equipment is extremely time-consuming. Offering this as a complete service will provide huge value to businesses.

Firstbase has raised funding from renowned investors including A16Z, Alpaca VC, and Remote First Capital.

remote

Creating a global team, effectively

Remote.com enables companies large and small to build remote teams globally, facilitating a hiring process internationally, whilst remaining legally compliant across borders. Following initial hiring, Remote.com will help businesses run payroll, benefits, taxes, and compliance internationally.

A remote set-up increases the talent pool exponentially; however, building an international workforce while remaining compliant under different nation's regulations is difficult. Remote.com enables businesses to hire globally without hassle, which we believe will become ever more important. Remote.com raised an exceptional Series B from Index, Accel, and Sequoia Capital.

While the geographic lottery of birth will continue to remain something we all have to work to change, tools such as Remote.com will provide a huge chance, as much more people can now work for leading companies globally.

II) Proptechs – work environment for employees

AIRTHINGS

Indoor Air Quality

Reverting back to one and a half years ago, when buildings across the world shut down due to the outbreak of the global pandemic, indoor air quality was a highly overlooked topic and seen as a rather esoteric field. Little care was put into this subject matter, as its significance was simply left unnoticed. Fast forward 2 years, the topic of indoor air quality has become mainstream and a widespread concern. When considering the in-use operational CO₂ emissions, indoor air quality and energy efficiency plays a significant role when it comes to reaching climate goals. Choosing better materials and improving ventilation, filtration and air

processing will enable the industry to make buildings healthier and circumvent negative health effects. We will experience a fundamental shift in the way we think about indoor spaces, and there will be a great need to design healthier buildings and indoor spaces.

Breathe better

Airthings is an Oslo-based company with the vision to empower the world to breathe better. By installing devices inside buildings, the company enables the improvement of air quality in homes, offices, schools, and various other buildings. Airthings helps asset owners take control of the indoor air quality by installing sensors and technologies into buildings and thereby enabling users to monitor and understand indoor air quality. Solutions like Airthings will turn offices into safe and productive workplaces by optimizing ventilation and building maintenance for energy savings.



Tracking air quality

Airly is building a network of sensors around the globe to increase understanding for and awareness of air pollution and specializes in providing hyper-local data on air quality. Airly is targeting the problem of unclear information and lack of knowledge on air quality and is herewith contributing towards successfully tackling air quality problems.

User-centric design and features

We will eventually reach the point where a building's digital interface – a once much-hyped trend – is not a differentiator anymore, but rather a hygiene factor; yet there is an increasing number of other features and solutions that will define how offices will be designed in the future, and that will enable the best user experience for tenants and users, lowering the costs for asset owners. Offices will turn from being workplaces to areas that enable employees to interact with the environment beyond merely work-related purposes and enable the transformation of workplaces into spaces where human connections flourish. Newly designed offices may also include everyday amenities like mail centers, outdoor spaces, a fitness center, health facilities, and more. The redesign of offices however does not only include a new standard of workplace interior but also integrated features that increase the usability of offices like seamless access control, integrated services and other digital tools facilitating the day-to-day life at the office.



Say goodbye to your keychain

Norway-based Unloc has developed a technology that makes physical keys obsolete and provides users of buildings with the ability to get and grant access to buildings via the smartphone. This can not only be used by tenants themselves, but also for giving service providers access remotely. Unloc is thereby solving the universal problems that come along with physical keys. Through partnerships and the development of cutting-edge technology, they are building an open and global infrastructure for the digital key.



Access control through facial authentication

Youmay is an end-to-end developer of facial authentication entry systems. Facial authentication enables effortless identification processes, makes workplaces smarter, and saves costs due to an automatic registration process. This solution not only increases the user experience of workers, but also increases the level of safety of a building. With an integrated software solution, HR and security processes can be improved, data privacy can be increased, and the system can be integrated into existing access control systems.



The “brain” behind smart buildings

Thing-it, is the “brain and soul” of a smart building. The company follows the vision to seamlessly transform a portfolio of offices and buildings into intelligent digital spaces by making use of one single and open cloud platform. Rolling out Thing-it in a real estate portfolio will lead the way to a successful enterprise digitalization strategy and benefits the tenant as well as the end user of buildings. Use cases like desk booking, access to parking, locker management, access control, and many more are contributing to optimising the utilisation of office space and increase the comfort of employees.

Green elements in the workspace

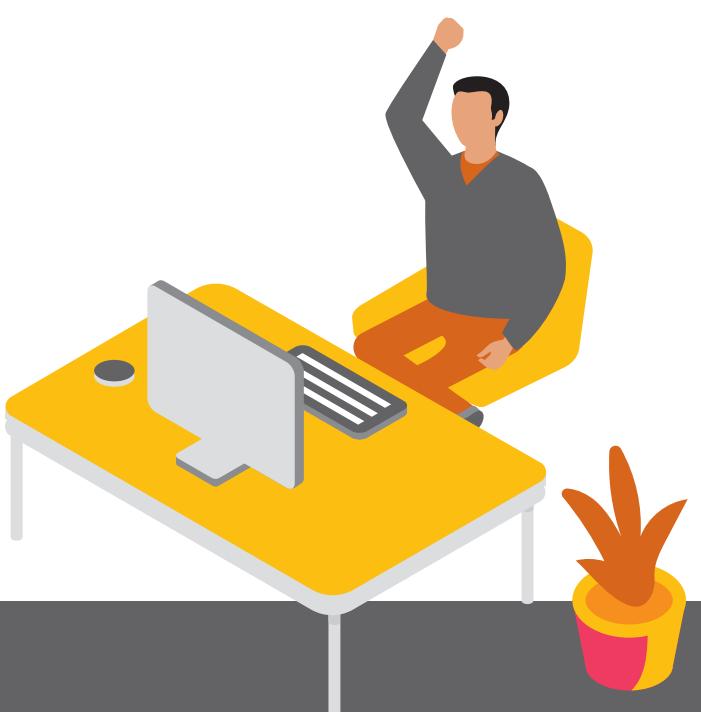
Green deserves a space in our workspace. We have seen some tractions so far; however, market adoption remains premature.



Experience the power of nature indoors

Naava is a Finnish indoor green wall designer that takes advantage of low-maintenance plants and curated filter systems to moderate the humidity and improve the air quality of workspaces. Epiclay is a similar startup with a value proposition to bring nature back to the city with more use cases.

Adoption cost, maintenance uncertainty, and relocation risks are the main obstacles for the mass adoption of green walls. Would ventures and potential adopters think of a win-win strategy to benefit the working environment? The ESG reporting and carbon emission regulations would play a crucial role in pushing the topic. More efforts shall be taken by talented entrepreneurs to make their products swift to onboard, flexible to remodel, and cost-effective compared to humidifiers and air-purifiers and thus truly beneficial for workers.



III) Proptechs – interior and exterior design

Office managers must work hard to differentiate their product, and the promise of a custom-branded space delivered quickly is an increasingly valuable proposition for both startups and traditional companies looking to retain talent and create a more distinct company brand. As companies are getting more of their workforce back to the office, it will be key to have a space that combines the benefits of a physical office, is enhanced by various smart and digital features, and builds on new and exciting amenities. Returning to a plain, pre-pandemic office will not be enough to convince the best and brightest talents.



Custom office spaces

Kitt is an office platform that matches and customizes office space for companies searching for their next HQ. Companies are increasingly looking for spaces that they can completely make their own, with a diverse range of work zones and things like rooftop terraces – all managed by the Kitt team, allowing them to focus on their business. On the landlord/supply side, Kitt is an alternative to traditional commercial real estate brokers, helping office landlords find short-term tenants, provide additional interior design servicing and partitioning in line with the tenant's requirements, and finally manage the space's facilities and amenities. Kitt targets SME landlords and aims to create price efficiencies through their own scaled partnerships with office equipment suppliers.



The interior design marketplace

Eporta markets itself as 'the easiest way to deliver interior design projects for free'. The company's user journey is centered around interior designers creating projects with a clear budget and room requirements on its website. Once the canvas is set, designers can source furniture, filtering by color, dimensions, lead time and budget. Alongside the marketplace, Eporta also launched a software tool called TradeHub that allows brands to power their e-commerce operations from their own sites. In October 2021, eporta was acquired by Shopify for an undisclosed price.

nuwo.

Home office as a service

Work from home has redefined what an office could be, but the core essentials of what is generally required in an office, namely desks, chairs, and lighting, remain the same. We now see new business models emerging for office furniture as employees adapt to working from home as the new norm. Nuwo styles itself as a "home office as a service" by creating a single marketplace platform for workers to lease work-related furniture such as desks, storage cabinets, and chairs from furniture suppliers. Leasing creates greater flexibility and cost control for both office managers and employees for the furniture that is ordered. On top of physical furniture, Nuwo links to a network of added-value services including assembly, maintenance, and insurance for the employee. On the employer's side, Nuwo offers inventory management and financing solutions in a single software solution.

Seatti

Greater flexibility

Flexible work locations allow office space to be used more effectively. This requires more coordination and planning. Seatti allows employees to reserve a desk in the office, plan remote working days and specify any other work locations. Office working plans can be intuitively shared with peers so that the workforce can see who is working, when, from where, and see each other more often. Office managers can analyze workplace usage data with the Seatti Dashboard, view and evaluate utilization data to develop an optimal work strategy.

What are we seeing from the real estate market?

We spoke to a number of innovation leads and traditional managers of real estate companies with large office portfolios. From our conversations, the CRE industry agreed that Covid has accelerated existing occupier trends, with tenants' expectations for choice, flexibility, and service provisions all increasing. Instead of competing on price, managers were keen to stress that office spaces were to be differentiated by being connected to hyperfast fibre optic internet, amenity rich, and demonstrating sustainability credentials, often in the form of BREEAM and WELL certificates. Due to the uncertainty of office working practices during the pandemic, average lease terms were rapidly diminishing to the point where new 1–3 year leases are now commonplace. Many larger office landlords and managers have published net carbon zero statements, promising to decarbonise their assets through a combination of investing in carbon offset funds as well as measuring and reducing the embodied carbon of refurbishment projects.

IV) Proptechs – extension & repurposing of areas

The future of work and office is yet to come, whereas we have witnessed many attempts, triumphs, and errors, in the alternative use of workspace. Their presence provides a signal that workspace is not only the space for work, but also a space that connects workers with amenities, convenience, and efficiency.

Some startups break into the workspace as their main battlefield (e.g. Silofit), others see workspace as one of the many use cases (e.g. Neighbor). Though some models (e.g. rest pods) have gained less traction and capital market feedback than others (e.g. fitness), we are listing and elaborating on them because the future of workspace is not only about exponential capital growth, but also the health and happiness of people working there, which creates less palpable – yet no less crucial – effects on the success of a company.

Microgyms

A mismatch in functionality and the inconvenience of commuting have driven much customer attention from the predominant big gyms to microgyms. Microgyms such as studio gyms, home gyms, and CrossFit boxes build upon different use cases and have shown their proof of concept.

The next obvious question is then whether microgyms could also be located right at the workspace?



On-demand private fitness spaces

Silofit, a Montréal-based startup founded in 2017, repurposes underutilized commercial spaces and offers a network of on-demand private fitness spaces. Such microgyms can be booked at an hourly rate and solely belong to the users during their stay, thereby ensuring privacy, safety, and availability. With 12,000 users and 3,000 active trainers by the end of 2020, Silofit plans to roll out 50 more microgyms across US metropolitan cities. Its \$10.25M Series-A round in Q2 2021, raised from Courtside Ventures, Whitecap Venture Partners, and Alate, goes to show that investors believe in the model.

The main investment thesis of these investors is based on the pandemic-accelerated digitalization and personalization of fitness experience. Many factors will obviously still decide over this young burgeoning company's success: the risk posed to health through working in confined spaces, customers' willingness to pay for upselling, or the size of this niche 'workinterval fitness' market.

P2P storage

Underutilized office space creates an ideal use case for storage, confirmed by the exponential growth in commercial square footage on the P2P storage platform Neighbor. Large property managers and small business owners are the main suppliers of these vacant spaces. They simply benefit from such passive income with storage risks mitigated by the insurance stack.



The Airbnb of storage

Renowned Silicon Valley VC a16z views Neighbor as the Airbnb of storage and led its Series-A and Series-B rounds at a total amount of \$63M. Economic empowerment is one of Neighbor's key characteristics according to a16z's investment thesis. eBay, Airbnb, and Neighbor – though thrived in different times – shared this philosophy and create palpable value for the users. In turn, the network effect of users from both the buy and sell sides helps nurture the platform itself.

With this curated two-sided market design, Neighbor may deliver a promising performance in their unit economics. Two factors, however, may constrain its prevalence at the workspace. First, office storage is overall more expensive than residential storage. Users exchange the premium price for the proximity, but the addressable number is still limited. Second, commercial real estate currently shows relatively high vacant rates, but there is no guarantee that this will last forever. Once offices go back to higher capacity utilization again, the supply of workspace for storage will decrease. In the long run, Neighbor would likely switch its focus back to the residential side and maintain a reasonably obtainable share that makes economic sense.



Rest and recovery in full privacy

Meetings rooms, working desks, and leisure spots are the three main areas in the office. However, a more peaceful and intimate area might be needed. Research has shown that breaks and recovery bring "flow" – the state of enjoyable immersion in a task – and boost productivity and work satisfaction. Some start-ups try to offer such space for workers to take a break and settle their mentality after challenging tasks.

Gosleep is a Finnish designer and manufacturer with two offerings: power nap pods and private workspace. It takes care of the physical and mental rest for white-collar workers at the workspace, for healthcare staff at hospitals, for commuters at airports, and even for athletes at sport courts. With a €1.1M grant from the EU Executive Agency for SMEs in 2018, it has been installed at and credited by multiple international corporations, airports, health systems, and sport leagues.



Spaces to recharge

Pop & Rest, founded in 2017, is a UK start-up in the same field, but with a value proposition to turn underutilized space into rest pods. It acts as a two-sided market to refurbish space from landlords and let it out to rest seekers at an hourly rate. To date, two locations and seven pods are in operation in the City of London. Little funding has been raised, mainly due to capital efficiency, business model, and monetization factors.

Rest pods are technically a variation of capsule hotels, specialized for shorter stays accessible by workers in need. It is less of a venture case, as it is asset-heavy and maintenance-high. However, it is ideally an indispensable component of a modern workspace.



Tech-enabled coffee chains

Luckin Coffee, the company with the shortest ever time period from inception to IPO, brought the concept of tech-enabled coffee chains to the market. Flash Coffee, inspired by Luckin Coffee, was incepted by Rocket Internet and is now attacking the Southeast Asian market.

Both coffee chains reside in commercial buildings. The high passenger traffic multiplied by a proper average revenue per customer yield a decent turnover. However, both businesses are paying a huge amount of money for marketing expenses and subsidizing customers for lock-in effects. An extended business opportunity for them could be to further infiltrate the workspace and lower the operation costs by fully digitizing the coffee-making process, energizing workers and powering work productivity.

3 Outlook

The COVID-19 pandemic disrupted labor markets globally during 2020. Millions of people were furloughed or lost jobs, and others adjusted to working from home as offices closed.

As European countries have successfully rolled out vaccinations, millions of workers are returning, at least part-time, to work in the office. People who have the choice to work from home will continue to access rapidly-evolving technology tools. Office buildings will increasingly allow users to track and recognize visitors from data supplied by phones and sensors, to enable seamless access and contactless journeys into the workplace. Visitor management systems will adopt contactless facial, voice, and iris recognition technology for tracking and, increasingly, thermal imaging cameras to gauge body temperature.

Driven by the economy and new technologies, our lives are defined by new ways of working, socializing, living, and we are changing the way we are utilizing space. Organizations have realised that expanding teams across regions is possible by using collaboration tools and technology that enables them to work efficiently across time zones and in different places. As the built environment, and especially the commercial real estate industry, is under pressure to increase flexibility and create spaces that allow for the co-existence of multiple users and functions, new solutions are emerging to turn these desires into a reality. Looking at the hybridisation of workspace, we quickly realise there will be

profound implications on the management and return profile of the entire urban real estate asset class.

So now that the most innovation-friendly real estate asset holders have added gyms, storage, and rest pods to their workspace, what will be the next new hot thing? Optimally, a solution should generate net economic value with ESG impact, create a killer use case that works for both customers and financially, and facilitate synergies with the existing workspace, workers, and workflow.

Space as a Service (SPaaS)

SPaaS refers to the commercialization of short-term pop-up spaces such as retail and events. Though not a novel business model, startups such as xNomad are centralizing them on a single marketplace, offering space bookers a one-stop shop and a user experience with a consistent level of service. To date, they only have retail space listings. One could expect workspaces to enter their funnel someday in the near future, given that the target customers of certain events and retail products or services are usually clustered in such (co-)working spaces, fueling the inspiration of work productivity and connections of similarly aligned minds.



Services and facilities accompanying work

Lean manufacturing has transformed the production landscape of the 20th century. What would then be a comparable magic sauce to boost the productivity of white-collar workers in the current era? Some co-working space operators have already provided their answers: Westhive, a Swiss co-working space with a USP of an innovation ecosystem provides the workers with various facilities, including gyms, showers, podcast studios, office support services, food, and beverages. For the workspace operators, a higher profit margin is achieved through the combination of space and facilities.

Yet there remains a lot more that can still be developed and further diversified in the workspace. Entrepreneurs and investors have not gone all-in in terms of their commitment and capital, because the future is uncertain. In such an immature alternative workspace ecosystem, consumers are also tentative to pay their bills. Reluctance from both sides has left the market without a winner-takes-all champion, who provides all use cases around utilizing the vacant space.

However, we believe that this ecosystem is on the rise. In the future of the workspace, the commercial property manager will not only manage the space itself, but also its surrounding infrastructure such as all the aforementioned products and features. The IoT and BIM systems will connect all the dots to serve worker satisfaction, environmental impact, and social responsibility.



4 About PwC and PropTech1

About PwC

Our clients face diverse challenges, strive to put new ideas into practice and seek expert advice. They turn to us for comprehensive support and practical solutions that deliver maximum value. Whether for a global player, a family business or a public institution, we leverage all of our assets: experience, industry knowledge, high standards of quality, commitment to innovation and the resources of our expert network in 156 countries. Building a trusting and cooperative relationship with our clients is particularly important to us – the better we know and understand our clients' needs, the more effectively we can support them.

PwC Germany. More than 12,000 dedicated people at 21 locations. €2.4 billion in turnover. The leading auditing and consulting firm in Germany.

About PropTech1

PropTech1 (PT1) is a leading European platform for transformative real estate technologies. Based in Berlin and London, the venture capital investor currently invests out of its oversubscribed first fund of €50 million. PT1 has so far invested in 14 potential sub-category leaders in the PropTech/ConTech/UrbanTech. PT1 has potentially built up the richest data base on real estate innovation in Europe, based on a deal flow of 100-200 investment opportunities that are currently analyzed each month. Limited Partners of Fund 1 include leading real estate corporates, banks, institutional investors and SMEs from the built world, e.g. Baloise Insurance, Aareal Bank, Covivio, JLL, PwC, but also many long-standing executives from the industry that invested privately. Around 10 of these RE „veterans“ also actively support PT1's operation as so called Venture Partners, transferring industry experience and networks. Fund 1 Venture Partners include Klaus Freiberg (former COO Vonovia, largest residential owner in Europe), Timo Tschauder (former CEO JLL Germany) or Jan Henric Buettner (founder of the global VC Headline / e.ventures). Fund 2 will be launched soon.

Roles and Clarification independence –

PwC & PropTech1:

In order to clarify the genesis of this whitepaper, PropTech1 and PwC are equal contributors. In this regard, we would like to create explicit transparency that PwC is related to PropTech1 Fund I GmbH & Co. KG and therefore not independent in this regard.

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