THE FUTURE OF THE WORKPLACE
Working from home, cafes or co-working spaces has never been easier or more popular. But the digital tools that have set us free can also help to create working environments that are flexible, intuitive — even inspiring. So is this the end of the office, or the start of its finest hour?
Every day, millions of people around the world go to one place: the office. Why?

“The workplace is not about the one place you go to every day. It could be anywhere: a park bench, a restaurant table, a client office or the gym. It’s all workplace now” — David Gooderham, WSP

The office began as a factory for processing information. If you were building ships, teaching children or caring for the sick, you had to go where the work happened: to shipyards, schools and hospitals. But if you were a clerk or a civil servant, a lawyer or an accountant, you just needed a place to sit and write, somewhere to store papers, and access to colleagues. So you went to an office. As the machinery of companies swelled, offices became larger and more specialized, swallowing up more space in towns and cities, and more and more of the people who lived there.

Today, computers have made many of those processing jobs obsolete — and it’s only a matter of time for the rest. In the years to come, advances in artificial intelligence will see machines take over even highly sophisticated activities. According to McKinsey Global Institute, around 50% of current work activities are technically automatable by adapting currently demonstrated technologies.[1]

The office is now a factory for “knowledge work”. Knowledge workers are those who “think for a living”. Their work is characterized by creativity, problem-solving and developing new ideas and resources — roles that computers cannot take on so easily. The term “knowledge work” was first coined by management consultant Peter Drucker.[2] He defined knowledge workers as autonomous: they begin by defining a task themselves and are responsible for their own progress. Continuous learning, continuous teaching and continuous innovation are intrinsic to knowledge work, and output is judged on quality, not quantity.

“Knowledge-worker productivity is the biggest of the 21st-century management challenges” — Peter Drucker

“Workers of the future will spend more time on activities that machines are less capable of, such as managing people, applying expertise and communicating with others . . . The skills and capabilities required will also shift, requiring more social and emotional skills, and more advanced cognitive capabilities”[4] McKinsey Global Institute

Across cities, towns and suburban business parks, in super-tall towers, sprawling groundscrapers and everything in between, the global office spans

14,700,000,000ft²[5]

and accommodates almost 1 billion workers[6]
No one has their best ideas at their desk. So why do we still go to the office?

“In 5G networks on the horizon, it’ll soon be faster to connect outside most offices than it is inside” Philip Ross, Unwork.com

In the 20th century, people had to go to the office because that’s where the tools of their trade were: telephones, fax machines, computers. That’s not true any more. With laptops, smartphones, wireless networks and cloud computing, people can work anywhere. When they do go to the office, they’d rather access company networks using their own computers: 53% of workers feel they’re more productive when they use their own devices,[7] while six out of ten companies now have a “Bring Your Own Device” IT policy.[8]

People went to the office because that’s where everyone else was. That’s no longer true either. Companies are often diversified, global networks, with as many contractors and freelancers as permanent staff. Team members don’t work in the same place or even in the same time zone, and they may choose to structure their hours differently.

They went because employers told them to. But in the 21st-century knowledge economy, the power balance has shifted. Employees have a greater say in how they do their jobs. “The number one success factor for many organizations will continue to be talent management,” says Tom Carroll, director of corporate research at JLL in EMEA. “That’s only going to become more pronounced as automation chips away at the more process-driven activities.” As companies compete to attract the best talent, they are having to rethink traditional approaches to work. Younger workers are much more mobile, says Carroll, both within the office itself and in the places where work is done: “That could be client offices, home, co-working spaces, airports.” A JLL survey of more than 7,300 employees in 12 countries found that 54% worked from home at least once a month, and 34% worked from third places such as cafes or co-working spaces. This is driven by millennials: 47% of under-35s worked from third places, compared to just 27% of over-35s.[9]

Gensler’s US Workplace Survey 2016 found that in the most innovative organizations, employees only spend 74% of their time in the office, the equivalent of 3.5 days a week, compared to 86% at the least innovative companies. Those who spend 80% or more of their time in the office are significantly less satisfied with their jobs and workspace and find less meaning in their work.[10]

In 2013, 7% of meetings in US workplaces involved a virtual participant. By 2016, this had almost doubled to 13%.[11]

Social media start-up Buffer decided to close its San Francisco office in 2015. With a fully distributed team spread around the world, spending so much on a base stopped making sense. Now its 70+ staff work from home, co-working spaces and coffee shops, travelling to meet up just a few times each year.

When call centre employees at Ctrip, a Chinese travel agency, were allowed to work from home, it led to a 13% performance increase: 9% from working more minutes per shift and 4% from taking more calls per minute. Home workers also reported improved work satisfaction and their attrition rate halved.[12]

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[11] Latest figures, December 2017
Will there be anyone left to go to the office?

“Companies used to hire full-time employees. It was like a family environment where they would stay for a long, long time – ideally even a lifetime”

William Kerr, Harvard Business School

“We are seeing a change in the way organizations think about a big chunk of their workforce,” says William Kerr, a professor at Harvard Business School and co-director of its Managing the Future of Work initiative. “Rather than lifetime employment, companies are working towards lifetime employability. Now the view is, ‘we want to make sure you value your time here, that you’re productive and constantly learning new skills. But at some point you’re going to go somewhere else, and we want you to look back and say this was a great part of your career’.”

The “dark matter” of the economy is temporary help, as companies have outsourced non-core activities such as maintenance and catering, and support functions such as accounts and customer relations. Historically large companies would directly employ hundreds of thousands of people. “Today we hear more about ‘superstar firms’ that are much smaller in size, but have an enormous impact and generate economic rewards for those who are part of the company.”

The rise of the gig economy will fragment organizational structures even further. Digital platforms and smart devices enable companies to access a vast global pool of talent, and allow footloose workers to pursue new kinds of portfolio careers. “Every single business is having its operations transformed by automation and by access to digital talent platforms — the human cloud,” says Carroll.

The gig economy is a good fit for knowledge work: both prioritize autonomy, measure performance rather than attendance, and judge results, not the process that is used to create them. Upwork, the largest platform for knowledge work, claims to have 12 million registered freelancers, from designers and creatives to marketing experts and accountants.

McKinsey Global Institute estimates that 20-30% of the working age population of the US and Europe engages in independent work. The vast majority are engaged in selling their labour. For some, gig work is a poor, insecure second choice to full-time employment. But MGI found that a significant proportion would prefer to be freelance: if everyone could pursue their preferred working style, 40-50% of the working-age population in the US and Europe would be independent.

That’s one reason why companies still need offices: as an embodiment of their brand and culture. As companies rely on a smaller number of short-lived employees, they must impart their culture and values more powerfully, more quickly. Offices have always been a physical manifestation of a corporate ethos. That’s even more important when some team members may never visit them.

Kerr studied the ultimate superstar firm, Finland-based Supercell, one of the world’s most successful mobile game developers. “There are only about 200 employees at the corporation, but they also have more than 1,000 outsourced player support personnel. Even though the outsourcer is a different company, Supercell paid to decorate the facilities of the outsourced vendor to look like Supercell’s own offices.”

Superstar firms of yesterday and today

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<th>Market Capitalization</th>
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According to a study by Upwork and Freelancers Union, at the current rate of growth, most of the US workforce would be freelance by 2027.

“There is always going to be a need for somewhere that people can congregate and feel a sense of belonging to a unit”

Andrew Chadwick, Chadwick International
The office is the embodiment of company culture. But what kind of culture is it embodying?

“Workplace design is interesting because it holds a mirror up to the economic models in which we operate” Jeremy Myerson, WORKTECH

Things move slowly in office design. Since the dawn of the 20th century, there have been three distinct waves, says Jeremy Myerson, director of WORKTECH Academy and research professor at the Royal College of Art in London.

The “Taylorist office” has rows of desks and very little else. It was based on the principles of American engineer Frederick W Taylor, whose system of scientific management broke every task into its individual motions and timed factory workers with a stopwatch.

The modern industrial office was conceived of as a machine: “People are cogs in the machine, and organizations are giant pieces of engineering, and it’s all about economy and efficiency,” says Myerson.

Things loosened up after the Second World War with the “social democratic office”, a place of human interaction and social relations, where getting on with other people was key to getting the work done. “This is the era of the corporate campus,” says Myerson. “It’s a much more place-based approach, that introduced urban planning principles to create a more pleasant environment and involved people collocating to the same physical space.” Like mini-cities, campus layouts featured streets and boulevards and green spaces, and desks were in clusters rather than in rows.

Since the turn of the millennium, place has become increasingly irrelevant and the “networked office” is the model du jour. “Gathering everybody in one physical place is no longer possible,” says Myerson. “Work is more distributed, collaboration is often between companies rather than within one company. Innovation involves a lot of partners.” It means the end of presenteeism too: “The reason people sat at desks in a Taylorist office is so managers could keep an eye on them. But everyone leaves a digital trace now, so you can see exactly what people have done.”

Networked office layouts are much more fluid and workers more mobile within them. Management hierarchy is much less apparent and many of the desks have been replaced by a range of different spaces for activities such as brainstorming in groups, more focused teamwork, quiet concentration or confidential calls, in recognition that open-plan layouts do not suit every worker or every task. This is activity-based working. “Networked offices, in theory, give people choice, more opportunity to move around the network and more agency over their work.”

All three office types are still with us, says Myerson. “For organizations who have still got Taylorist offices and social democratic offices, the more fluid, flexible pattern of the network is difficult to manage. We’re in a period of restless improvisation and experimentation. We’ve moved away from efficiency to effectiveness, but now we’re trying to understand what effectiveness means in a knowledge economy.”

The networked office will be the dominant model for some time to come, believes Myerson, although it does have limitations. “People are already talking about fluidity rather than a network, because the network itself is bounded. But networks take different forms, some are well-defined, and some are organic and unpredictable, and then there are networks within networks. So I think it’s quite a good model for looking at what’s happening right now.”
The Uberization of everything: All companies are tech companies now.

“Every industry is being disrupted by start-ups, so organizations are under pressure to innovate. Growth will be driven by high-skilled, creative individuals.”

Tom Carroll, JLL

Distinctions between business sectors are collapsing. Banks, car makers, professional services — for every company, digital technology is now the key to success and growth. “It’s no longer about specific technology products that a company might use or not, but technology integrated into the business model,” says William Kerr at Harvard Business School. “Every leading bank is no longer thinking of themselves as a bank, but as a technology company.” On Harvard’s Managing the Future of Work course, Kerr includes a case study of bank ING Netherlands, which reshaped its working practices and offices using the Agile methodology to emulate tech firms such as Spotify, Google and Netflix.

The Agile methodology originated in software development, but is now being adopted by firms in many fields. Not to be confused with “agile working” — the ability to work where and when you choose — it is fast and flexible, with the emphasis on collaboration between small, self-directed teams. They are created for a specific purpose, evolve over time and disband when their work is done. “So instead of breaking down marketing from distribution from R&D, you have an Agile team that’s devoted to mortgage and loan applications, which includes everyone from customer support to development to how it’s being distributed to customers,” says Kerr. “There are now 300 self-directed teams working at ING. That’s a tremendous change from an organization that had seven or eight hierarchy levels.”

Agile favours a fluid layout. “ING moved entirely into open concept space. There are few walls and no offices — even the CEO doesn’t have an office. Instead, there are long working tables throughout the building and there are whiteboards everywhere and flipcharts.” ING is now rolling this out around the world.

Tech companies have led the way in new kinds of office space: they are naturally disruptive and they have a young workforce. Non-tech firms are following suit in order to attract that same talent, says Kerr. “Many traditional companies are moving into the heart of downtown in order to observe the very punchy ideas that are bubbling up.”

Spaces will no longer be dedicated to processing information, but to sharing it. “I spend a lot of time with clients talking about the things that make us human,” says Sarah Kay, director and workplace designer at Woods Bagot. “We need environments that enhance those attributes of ‘humanness’: so experience, emotions, senses, the ability to make mistakes and to fail. We need places where people can come and share their experiences and emotions and interact with other humans in a collaborative setting.”
Factories for creativity.

“We’re no longer just designing an environment, we’re designing the experience”

Kay Sargent, HOK

A high-quality workplace is essential for attracting and retaining talented people, and for supporting them to do their best work. Designers have long known this intuitively, but Gensler’s US Workplace Survey 2016 made the link explicit. It asked more than 4,000 office workers in 11 industries a series of questions about innovation within their organization, and about the functionality and effectiveness of their workplace. The correlation between the two was even stronger than expected, says Janet Pogue McLaurin, principal and co-leader of its workplace sector. Employees with a Workplace Performance Index score of 90 or more had an average innovation rating of 4.4 out of 5, while those with a WPI score of 50 or less averaged just 2.6 for innovation.

“We saw that the most innovative top quartile behaved very differently and had better designed workplaces,” she says. “They spent more time collaborating and more time away from the office.”

In the most innovative workplaces, employees can choose from a diverse mix of spaces for focused work, virtual and face-to-face collaboration, learning and particularly socializing. “By moving around, you’re building social networks and touching base with people across the organization, not just who you sit next to. Those impromptu conversations spur connections and ideas that may not travel as quickly in a traditional set-up.” But crucially, there is a balance between encouraging collaboration and supporting the individual work that remains essential to employee performance: “To focus effectively, you should not have distractions or interruptions, you need to get into that groove. That’s the direct opposite of collaborating,” says Pogue McLaurin. “If people are trying to do the two next to each other, that can be a misalignment.”

Autonomy is important — respondents in the most innovative companies were twice as likely to be able to choose where and when they worked as the least innovative.

A JLL survey found that 69% of employees believe a work environment should facilitate “happiness” — their number one priority for a unique workplace experience.

“Sometimes it’s not about providing everything so conveniently, it’s about creating special moments”

Janet Pogue McLaurin, Gensler

...
The office is no longer a place, but an experience. “We do a lot more ‘day in the life’ scenarios,” says Gordon Wright at HOK. “For example, we talk about what you want the arrival experience to be like. Do you want visitors to have to walk up to a desk and be sent to sit in a chair off to the side, or do you want to make it more informal and welcoming, like ‘come in and get a cup of coffee’? It’s about designing the space from the user perspective and creating an amazing place for them to be.”

Amazing spaces tap into all of our senses, including smell: “We’re talking about creating sensory experiences that go beyond just branding. Space should be the physical embodiment of what a company’s culture is.”

As office environments become more high-tech, there is a corresponding desire for “high-touch” maker or MEMO spaces (“maker environments, mobile occupants”). At AOL’s Toronto office, HOK created casual, interactive spaces in a rustic, brick-and-beam interior, designed to feel like an oversized living room. “It’s more hands-on,” says senior project interior designer Caitlin Turner. “You can move things around and tinker and play and get your hands dirty, almost like a scrum space or extended project rooms. We’re seeing this ‘garagification’, to support more agile, creative, beta-innovation type spaces.”

Innovative workplaces are 2.5 times more likely to offer specialty coffee on site [17]

FITTER, HAPPIER, MORE PRODUCTIVE
Is a healthy workplace the key to keeping staff satisfied?

Employers are rushing to lure health-conscious millennials with fresh air, daylight and plant-filled spaces, and in-house chefs serving up organic meals. It has become much harder to let a building without decent bike storage, says JLL’s Carroll. “Cycling to work is fundamental to the younger generation, so it’s one of the biggest discussion points for our agents.” But just storing bikes is no longer enough: a music streaming company told him that staff wanted an on-site mechanic to service them. “The corporate mindset used to be to ‘build it and they will come’. But now there’s a much greater focus on making people feel happier.”

The hope is that healthier employees will also be more productive. WELL building standards have been found to reduce sick days by up to 28%, says Matthew Marson, UK head of smart buildings at WSP. “That’s just one benefit but it’s probably the easiest to measure.” In his previous role, he was responsible for implementing WELL principles in Accenture’s global R&D centre in Ireland — a potential saving of US$220,000 on sick days alone.

58% of millennials would choose a better quality of life at work over a higher salary [22]

Innovative workplaces

THE ART AND SCIENCE OF THE POSSIBLE

Hybrid Species

The office of the future will encompass different types of space from many sectors

“The next big innovation in workplace is not going to come out of the blue, it’s going to come from taking elements of what we already have and combining them together,” says Gordon Wright, director of workplace at HOK. “Corpitality” fuses the office with hotel-style lobbies or lounges. Workplaces are borrowing from retail with tech bars — inspired by the Apple Store’s Genius Bar — and juice counters and coffee bars staffed with in-house baristas. Sweeping staircases or gathering spaces echo college campuses, and presage a requirement for lifelong learning, as knowledge becomes obsolete ever more rapidly.
‘You can tell people, “I’m in the Boat!”’

Aaron Taylor Harvey, creative director of Airbnb Environments, explains how the company’s app inspired its immersive office.

Games designers spend their days trying to create digital experiences that feel real. The Airbnb Environments team have built the opposite at its San Francisco HQ: a workspace that makes employees feel they are immersed in its vacation rental app.

“I thought about how to simulate the app experience,” explains creative director Aaron Taylor Harvey. “How can I bring the feeling of scrolling you get when you move your thumb up the screen into the physical experience of walking through space?”

Scrolling becomes strolling: glass-sided meeting rooms, each themed around a different Airbnb listing, are stacked two-deep along a ramp that descends towards the centre of the building. “They have a kind of flatness — maybe 2-and-a-half D. Now when you descend that ramp, you’re instantly embedded in the product experience, but also the workplace experience. You can see the variety in Airbnb and you can also see the action of the office. It has a quasi urban feel of density to it that’s really exciting.”

The 20-person boardroom is a dining room in Stellenbosch, South Africa; other spaces recreate a cabin in the woods in Solnechnogorsk, Russia, a Shanghai loft, and a living room in Rio de Janeiro.

Each floor is also themed around one of four cities — Kyoto, Amsterdam, Jaipur, Buenos Aires — with a vibrant colour pallet and zones named for different neighbourhoods, and a cafe on every floor. “There are some pronunciation challenges, but it helps people to be reminded of the feeling of travelling,” says Harvey. Each zone accommodates 50 employees at custom-made sit-stand desks, a “garage” project space with a pull-down door, and “caves” for one-to-ones or video-conferencing.

Every non-structural element of the building was removed to enhance the atrium, from which a huge staircase connects the floors. “As an architect, it is rarely the right thing to do to create a giant white sweeping stair,” he concedes, “but this is one of those places where it actually made sense. It makes you feel, ‘I’m supposed to move up and use this whole space, not just stay on my floor’.”

Circulation routes fan out from the central core, “so you’re never sitting in a spot with hundreds of people walking by every day. You’re just with the people you work with and hearing the conversations you need to hear, and you can choose to move towards the centre.”

Harvey realized that the same hub-and-spoke layout is found at Disneyland, which has become something of a reference point. “It allows shortcuts between lands but also keeps them separate, so even though Disneyland is not very big, you have a sense of travel.”

There are also a few of what Walt Disney called “weenies”. “It’s taken from the silent films, when they’d wave a sausage off-screen so a dog would look at it. For Disney, things like Space Mountain and the castle were weenies — they pulled you deeper into the space.”

Airbnb’s most successful weenie is the Boat, projecting out over the atrium. Even though the 1,000-person building...
is still only two-thirds occupied, the Boat’s single-person “duck-in” spaces are almost always full, says Harvey. “Duck-ins are always successful wherever we are, but not like this. There is a feeling of excitement of getting to inhabit the Boat — you can tell people ‘I’m in the Boat’. That symbolism means a lot to people. It simplifies the mental picture they’ve painted of the place they work.”

The Boat offers privacy too. Harvey thinks that the need for privacy is underestimated, but that so is the need for cafe space. “I think people want very high-contrast environments that they can move between. Not just different-shaped furniture but real environmental change. Distraction is a result of there not being enough distinction, when the space isn’t telling people how to use it.”

Even though desks are still allocated, there are “standing landings” in each neighbourhood where anyone can pitch up, though not many people take advantage. “The desk and the meaning of the desk is great to people,” says Harvey. “It has incredible emotional value. The desk is a symbol from the employer of their commitment to you. You have to have a great deal of confidence not to feel that thing is valuable.”

... Or what about a rainforest?

Amazon has just opened The Spheres at its campus in downtown Seattle, three interconnecting glass domes filled with more than 40,000 high-altitude tropical plants, where employees can hold meetings in treehouses and beside rivers and waterfalls. It is intended to “create an instant botanical immersion”, drawing on research linking biophilic design and creativity.

“You walk in and it’s like no workplace you’ve ever seen,” says Tom Marseille, national director of Built Ecology and managing director for WSP in Seattle, part of the team behind The Spheres. “It isn’t just a nice space, it’s an amenity that’s going to help attract and retain people because you’re giving them something unique.”

Creating a space that’s comfortable for both plants and people required sophisticated environmental and lighting systems, but they also had to be hidden, says Marseille. “This one took all of our engineering and design horsepower to deliver.” Just don’t look too closely at the fallen logs ...
How can offices compete?
Learn from the masters.

“Traditional offices don’t work because people don’t like them. Co-working is the canary in the mine.”
Jeremy Myerson, WORKTECH

The co-working space is the ultimate networked office.
The concept has come a long way since its origins in 1990s Berlin and the earliest community-oriented “hackerspaces”. Some co-working locations welcome all-comers and let them get on with it, while others host a carefully curated blend with community managers to facilitate interactions.

Co-working spaces started as hubs where freelancers and entrepreneurs could make connections and build a support network, but their extraordinary proliferation has been driven in part by large corporates. They offer memberships as a perk, to free up fixed desk space or to tap into the creativity and innovation of local start-ups.

Today a co-working space might be little more than a grungy “coffice” with a high tolerance for laptop users nursing a single latte. Or it might span many thousands of feet in a slick downtown location, with custom-branded spaces for large companies. It may just be a restaurant that would usually be closed during the day. Or it could even be someone’s house: the Hoffice community supports individuals to turn their homes into free co-working spaces for the day and invite like-minded people to join them.

Global brand WeWork offers individual and corporate memberships at more than 170 locations. Firms can lease floors or entire buildings, or hand their own space over to it to fit-out and manage. It is now the largest corporate occupier in central London – only the UK government has more office space. Its footprint in the financial district alone doubled in 2017.

“We see a lot of different types of business collaborating,” says Eugen Miropolski, managing director for Europe and Israel. “At the beginning, there were a lot of financial services companies, then a lot of start-ups, but now a lot of larger corporations like IBM or Barclays are coming to join that community. When you have that mix of different types of businesses and companies, you get a very unique type of collaboration.”

The rise of the co-working class

Ten years ago, the world had 75 co-working spaces. Now there are 13,800

In 2017, nearly 1.2 million people used co-working spaces. 56% did so for the first time

Co-working currently accounts for less than 5% of the global office market

By 2030, it could hit 30%
By 2030, co-working spaces could account for 30% of corporate office portfolios, according to JLL. “Organizations are having to absorb tremendous amounts of geopolitical and macroeconomic change, and they’re having to change their workplace at a much more rapid rate,” says JLL’s Carroll. “Co-working space gives them the ability to flex rather than fix their real estate requirements.”

Co-working has become synonymous with cool, beautifully designed spaces, a high-quality service and, of course, great coffee. They’re this good because they have to be: co-working spaces must compete to attract a footloose market and they have elevated it into an artform. “Co-working is the consumerization of the workplace,” says Myerson. “You’re paying for a service and if you don’t like it, you can go somewhere else. That’s why they are so acutely attuned to building communities and providing the right atmosphere and ambience. They’re constantly iterating in a way that traditional workplaces are not.”

How can corporates and developers compete? If you can’t beat them, join them … Bigger businesses are starting to realize that they’ve lost their mojo and they’re wondering how to get it back, so they’re taking a page from co-working, creating curated experiences with a strong sense community within their office space,” says Wright at HOK. “Developers are setting aside 10 or 20% of their portfolio to provide a co-working for the building, a great big space that everyone can use. It’s becoming an amenity — just like years ago, having a gym in a building was an amenity.”

Could co-working spaces ever replace the traditional office altogether? Unlikely, says Kerr at Harvard Business School. Centrally located, beautifully appointed co-working space is inherently expensive, and it offers little protection for intellectual property, especially in a fluid, mobile layout. “Companies will continue to choose the model that is most effective for their needs, and some will employ both approaches in different parts of the organization.”
When companies are defined by their use of technology, why wouldn’t they apply it to their own workspaces? Just coming on stream is the ability to collect and analyze data about every aspect of a building’s operations and the activity that takes place within it. The workplace of the future will be fitted with a dense mesh of tiny multisensors, constantly collecting information on light levels, sound, temperature, air quality and occupancy, and transmitting it wirelessly.

“The technology is getting better and better, and there’s more and more we’re able to do,” says Herbert Els, senior vice president of building technology systems at WSP. At the company’s innovation centre in Boulder, Colorado, there are 50 multisensors in a 6,000 ft² space, which Els’ team is using to develop applications including a virtual reality model. “When we pull that live datastream into the VR environment, a building operator wearing a headset can sit comfortably in their chair and teleport [walk virtually] through the space to see how it’s performing.”

This will transform the way we manage and occupy buildings. Real-time granular data will make maintenance more efficient — by identifying which areas are used most, for example, to inform cleaning schedules or charge different business units for the energy and space they use. It will be used to create more pleasant, comfortable environments — so a poor air quality reading could trigger a higher number of air changes. Combined with presence-aware technology, it can support access control, safety evacuation and security: “A tech company wants to know where their visitors are at all times,” says Els. “They could geofence them and send a notification the moment they go outside the area, asking if they need any help. And at the same time, notifying security.”

Building data will become an invaluable business strategy tool. Companies will derive the greatest benefit by combining sensor data from the building with data from other corporate systems, says WSP’s Matthew Marson. For example, they might cross-reference employee timesheets or performance with their location in the building: “So we could see that if we put the designers on the north of the building, where there is a certain level of blue light, they’re three times more innovative. Or if we’ve got teams spread across the globe working on the same bid, if we pay for them to travel and sit together, will we find that we’re 6% more likely to win because of that collaboration? It’s by adding all of this data together that you find out the secret sauce of your organization.”

“There’s a fine balance between real-estate optimization and space scarcity,” adds Els. “Agile working really means densification, but as
you squeeze more people in, the real estate benefit is hugely offset by the drop in productivity. What is the optimum space density before social decorum breaks down because there’s a lack of personal and reservable space? Smart technologies allow us to measure a successful workplace.”

**Technology will empower us.** Smart systems can give people greater control over their environment and help them find a space that works for them, says Els. His team is developing an app that will show which desks are free, as well as the noise levels, lighting and temperature in each space, and guide users to their chosen spot. They are also working on a meeting room system to clear “zombie bookings” and show real-time availability of rooms.

Employers can use the same systems to see who’s talking to who: “A lot of firms are very interested in using this to measure community building.” From a privacy point of view, it’s the same as social media, he says: “As long as convenience comes with it, people are more willing to share personal data.”

“Giving people more choice is higher on the agenda than reducing space. That means using it entirely differently”

**Ingrid Stevenson, Chadwick International**

“Until now, workplace designers have had to rely on people bumping into each other around stairs or coffee makers or water coolers or whatever to create collaboration,” says Sarah Kay, director at Woods Bagot. “I don’t think it does. It might create socialization, but truly valuable collaboration starts when a group of people come together as a project team for a period of time. It might be in a workshop for three hours or sitting at a shared work table for six months.”

Companies need to take a more strategic approach to collaboration, and this is where data comes in. Activity-based working (ABW) is not a very sophisticated way of allocating space, says Kay, nor is it a good fit for the Agile methodology that is spreading from the tech sector to companies of all kinds. “Agile relies on visual management, Post-it notes all over a wall that are a visual manifestation of the tasks that people need to be doing on that team,” she says. “With ABW, everything is virtual and real-time and digital, while agile methodologies require physical stuff and teams to be physically located together.”

When Commonwealth Bank of Australia noticed its free-desk layout was hindering teamwork, Woods Bagot’s SUPERSPACE data team, led by Dr Christian Derix, wrote a piece of software to model how Agile teams come together and disband over time. “It showed us that teams were actually much more stable in terms of allocation of space than a typical ABW environment,” says Kay. “They might be in the same location for a month before they had to relocate.”

So the next evolution of ABW might be an app that allocates space based on collaboration: “On the way into work, you’ll check in to see where your team is located on that day. Because it’s more stable than an ABW environment, the visual management board can be moved to suit the teams. And then individuals will fill in the gaps around the Agile teams to maintain the efficiency.”

Another of Kay’s clients, a tech firm in Tokyo, is using the software as a business strategy tool. Where there are many people scattered through the organization working for the same client, they could be brought together for one day a week, for example. Or the company might analyze where its engineering capability is growing and position the marketing teams close by. “You can manipulate how collaboration happens, as opposed to just leaving it completely to chance.”

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**Software can model and engineer how collaboration happens**

**Woods Bagot’s SUPERSPACE**

WX.Layout software integrates many metrics to optimize workplace design

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**“Giving people more choice is higher on the agenda than reducing space. That means using it entirely differently”**

**Ingrid Stevenson, Chadwick International**