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If space-per-head is dead, what's next?
Designing for employee experience
by Doug Lowrie

Beauty and space are important elements of a functional workplace. But over the last decade, Microsoft has learned that far more importance should be placed on creating the right balance of human energy in a workplace. That is, creating a space that works for how people actually use it. We call this critical standard user experience, and in the past few years it has become the No. 1 element we design for in our properties across the globe.

Observing workplace trends, our department has seen the dramatic change in workplace norms. Advances in communications and collaboration technologies such as SharePoint, Skype, and Office 365 – along with hardware like more powerful laptops and smartphones – are changing how and where people work.

Through the Milan project and many others, we began to see that if you get the space wrong in either direction, community feeling deteriorates. If a space is overpopulated, it's chaotic. Underpopulated, and it's a ghost town. The previous Milan office was sized for more people than were working onsite, and thus lacked vitality.

Milan became the latest evolution of our space-utilization

solution – the tool we developed to allow us to actively see the utilization of every site across our 45-million-square-foot (4.2-million-sq.-m.) portfolio. What began with gathering simple badge data in 2015 evolved to include a constellation of technologies that gathered information with more precision than had been achieved to date.

The outcome? From the data, we concluded that the building could serve 700 employees at 400 work-stations. We moderated the size of the new building, known as Microsoft House, from 16,000 to 7,000 square meters (172,223 to 75,348 sq. ft.), while main-taining its striking glass structure in the heart of Milan. We designed spaces within the building tailored to the group sizes the employees most often gathered in. Almost at once, the vibe in the building became more energized. Following this project, we applied the new technology to the new Microsoft office in Nashville, re-ducing employee space and enlarging customer space, just like the data told us.

We discovered many things from these projects – among them, that we had historically built our workplaces an average of 20 percent larger than nec-essary. We also found that this type of data gathering is not cost prohibitive. In the past, the only way to gather information about employee space usage was to flood buildings with sensors, which starts to get very expen-sive on large corporate portfolios. By contrast, space utilization operates on technologies most companies already have in place: an Internet connection, a wire-less infrastructure, a security system, an application with data on employee names and organizational affili-ation, and a building-management system that knows how many employees are assigned to a space.

How does it work? Through an intricate choreog-raphy involving the cloud, machine learning, analytics, and sociometric data. From the moment an employee swipes a security badge to enter a building, the data gathering begins. That employee's phone or other devices – the average Microsoft employee carries 2.8 devices, from phones to laptops to wearables – con-nect to the network multiple times, thereby providing multiple data points on which areas are being used, and for how long. Microsoft Azure cloud comput-ing processes hundreds of millions of data points per week. Machine learning, over time, enables a more precise detailed overview of building usage than other methods have provided. We can learn the peak numbers of people in a given building, the most densely populated areas, even employees' aggregated movement through the space.

Privacy, of course, is a real concern. That's why the European Union's governance model, General Data Protection Regulation (GDPR), effectively mandates complete data transparency worldwide. So when our harvested data are aggregated at group level, it is deidentified and obscured to protect privacy. Groups that have low numbers of employees are further aggregated together to ensure employee information
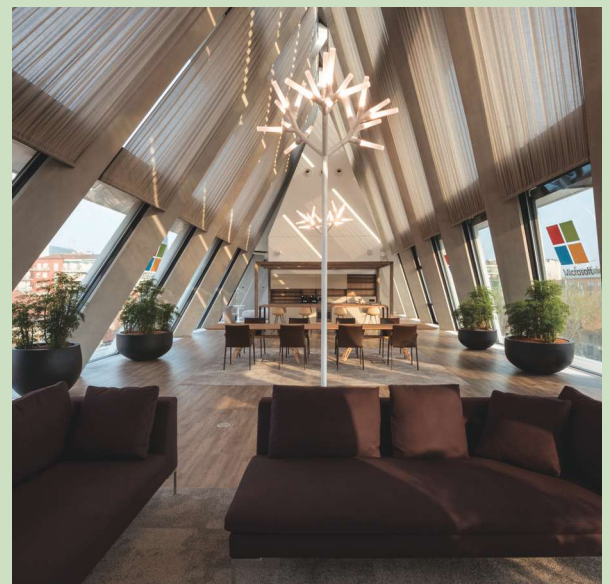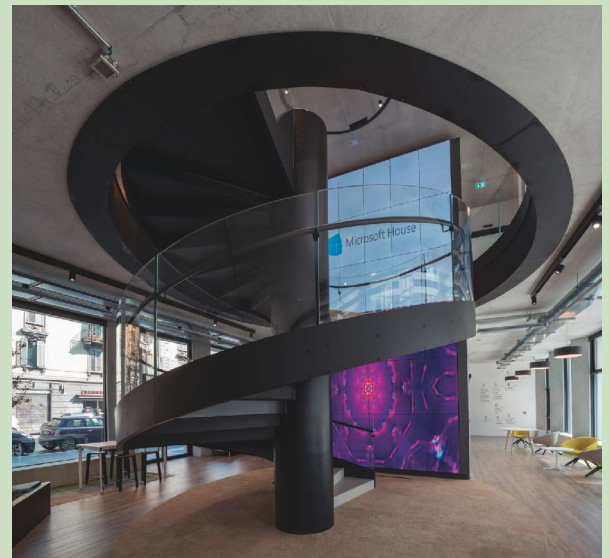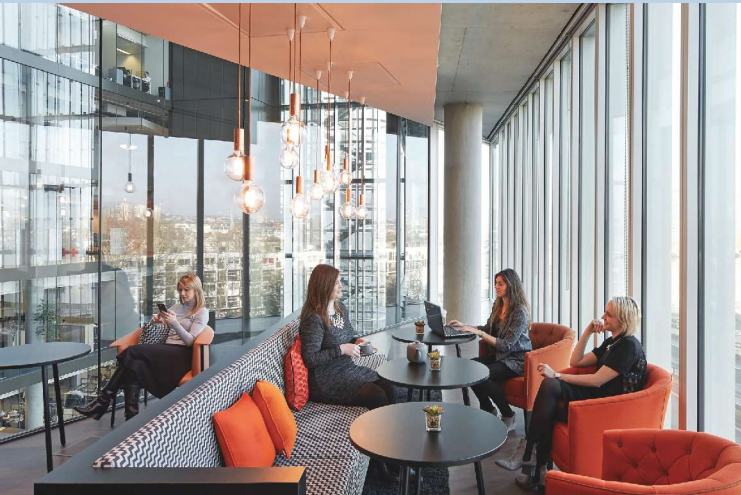
cannot be assumed by association. No connection can be made between device and individual.

The minute all this data is amassed, "space-per-head" goes obsolete as a metric for space-planning decisions, leaving much more meaningful information to dictate space usage. Some of this information has validated what we had been suspecting. For instance, our data affirmed that people were interacting in smaller groups, and more frequently throughout the day, than had originally been planned for. We found that only .5 percent of the company's meetings are physically attended by 10 or more people, and that 50 percent of enclosed meeting spaces are occupied by a single person. Not only did these findings reveal trends about preferred collaborative styles, it also helped us determine the need for fewer large conference rooms and more spacious small conference rooms to achieve the desired user experience.

This data-driven approach has had other impacts, too. Previously, we assumed that different employee profiles would be found to spend different amounts of time in the office. For instance, we expected that administrative professionals would be onsite more often than salespeople. In fact, the data showed very little difference, on average, in mobility patterns group to group. It upended our decision-making approach of the past.

Insights from the data have indicated cultural nuances. We learned that in Dubai, employees bring customers to the office for meetings, whereas in Israel, employees visit customers where they are. But, across office sites, what the data most consistently suggests is the emerging importance of flexibility, both in employee mobility and workspace versatility. Time and again, data has shown spaces designed for one purpose being used in another way, such as social space being appropriated as meeting space, or an office becoming a quiet zone.

Why is it important to know how space is used? At the most basic level, such knowledge empowers companies to operate with optimal fiscal prudence. Most of the time, when we've gone deep into the data, what we discover is that we need less space. This, of course, has huge implications for leases, operational costs, and capital costs of fitting out the space.

But the most important reason for knowing how space is used comes down to employee experience. Individuals do their best work in different ways, and it's our job to design workspaces to enable all of them to do their best work. This is done by supplying ample concentrative and collaboration spaces and understanding how to interpret the data when they vote with their feet. Sometimes the data will even reveal a zone or a room that people are avoiding. This can lead us to a ventilation or heating problem there that we did not know needed addressing. This is but the most tangible way Microsoft creates a better experience for employees.

And will continue to do so. Now, the technology is used in planning for all new Microsoft real estate projects around the world, and space utilization is currently being fine-tune-tested for possible broader dissemination. The next two to five years will be big in the development of artificial intelligence, and Microsoft has plans to put an AI layer over current data sources. This could enable employees to type into Outlook, "I want to book a meeting with these people," and rely on the system to take care of the rest, from the size of the room to proximity of the users to everyone's preferences and schedules.

That's but one instance of buildings being made to adapt to their users, adjusting themselves to the needs and preferences of the employees who work in them. That's our next step in user experience – and it's where the future will find us.

As global workplace product manager for Microsoft, Doug Lowrie defines his primary duties as evolving the company's workplace programs through research, technology and sociometric-data analysis.