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CHANGE OF SPACE

The hyperconnected office is here, as organizations use pilot projects to identify and scale efficiencies and safety benefits.

BY AMBREEN ALI
PORTRAITS BY LOGAN ZILLMER



Alex Cammenga,
Herman Miller,
Holland, Michigan, USA





A faster business world needs smarter workplaces.

So organizations around the world are launching projects to deliver hyperconnected workspaces that are more efficient and safer. Whether it's corporate offices or supply-chain warehouses, project teams are building an internet of things (IoT) workplace infrastructure by placing sensors on furniture, equipment, lighting and even workers. The goal is to generate real-time data and immediate benefits for employees, such as the ability to find an available meeting room on the spot or getting automatic alerts when it's time to take a break.

Smart workspaces are a growing trend. By the end of 2023, the smart office global market is expected to reach US\$46 billion—an 85 percent increase from last year, according to a February 2018 report by Knowledge Sourcing Intelligence. That uptick in project activity is a response to shifting office requirements. As flex schedules and virtual teams become the norm, organizations are starting to transition from dedicated workstations

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“

You have got to have a goal before you start. That's one of the things we help clients do.”

—Russ McKay, IBM Watson IoT, Nottingham, England



Above and here, Cisco's smart workspace in San Jose, California, USA

Ontario, Canada and global headquarters in San Jose, California, USA that have helped deliver dramatic cost savings. The new offices created smaller shared-space environments where workers use a smartphone app to find available workstations and conference rooms. A proof-of-concept project in San Jose revealed that the company would spend 50 percent less on furniture and pay 37 per-

cent less in real estate costs compared to its conventional office spaces. The company is planning to bring similar projects to other Cisco offices around the world.

to shared spaces that better support an agile work environment. Smart office projects help connect workers to those spaces. Some organizations already are realizing long-term benefits, such as identifying seldom-used spaces and workstations that can help them right-size their offices and operations. For example, in the past three years Cisco Systems completed smart office projects at regional headquarters in Toronto,

cent less in real estate costs compared to its conventional office spaces. The company is planning to bring similar projects to other Cisco offices around the world.

“Being able to measure and optimize workspaces increasingly provides a competitive advantage,” says Alex Cammenga, senior technology program manager at office furniture and design firm Herman Miller, Holland, Michigan, USA.

Matters of Privacy

Smart workplace projects have the potential to monitor a worker's every move, including identifying the times employees enter and leave workspaces. That can be a scary thought for employees, who might worry that data could be microanalyzed to measure each worker's performance. So project teams must take extra steps to allay those fears.

For example, when office design and furniture company Herman Miller completed a project for a U.S. company last year, the change management plan helped the sponsor communicate to employees what the smart office system does—and “maybe more importantly, what it does not do,” says Alex Cammenga, senior technology program manager, Herman Miller, Holland, Michigan, USA.

Mr. Cammenga's team explained to the sponsor's employees via emails and during group training sessions that only anonymized data could be shared with managers. As a result, supervisors see only aggregate trends rather than individual behaviors.

DHL Supply Chain took a similar approach during a one-month warehouse-safety pilot project in Singapore. The project team worked with human resources to draw out clear guidelines for what the system could and could not track. The team also developed a communication plan to explain how the project—which required workers' movements to be tracked via wearable devices—would provide big-picture activity trends, says Domnick Almeida, senior director of IT planning and architecture, DHL Supply Chain Asia Pacific, Singapore.

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A DHL Supply Chain warehouse

Herman Miller's Live OS smart office system app lets workers set personal preferences for shared workstations via a button on the furniture (right). A dashboard collects usage data (below right).



“Whether the goal is to maximize employee efficiency in a given space, optimize operational spend on real estate or create a place to attract and retain talent, the data to support and justify those investments is critical to the decision-making process for leaders.”

But project success isn't automatic. Teams from tech and workplace design companies must collaborate with sponsor organizations in a way that ensures workers will use the connected workspaces as intended so organizations achieve benefits. That means project plans must include gathering feedback to assess company needs, and developing training and other onboarding to ensure buy-in from workers. And, like Cisco, organizations typically start by launching projects at single sites. Starting small helps them determine how they will scale the technology across the enterprise.

SMART SIZE

Strong planning and engagement from the start by project teams help sponsor organizations establish clear objectives so they avoid information over-

PHOTO COURTESY OF DHL (BELOW LEFT) AND HERMAN MILLER (TOP)



PHOTOS BY LOGAN ZILLMER

load—and the risk that projects will spiral out of scope. Filling an office with sensors and collecting massive amounts of data with no clear goal can also be a costly and useless endeavor, says Russ McKay, a solutions architect for IBM Watson IoT in Nottingham, England. “You have got to have a goal before you start. That’s one of the things we help clients do.”

When Mr. Cammenga launched a five-month smart office renovation pilot project for a U.S. company in February, his team held face-to-face meetings to establish a big-picture plan: Start small and scale up the technology in the future. Rather than implement sensors across all office spaces in several buildings, the team focused on one particular office to match the sponsor’s limited tolerance for risk on such a dramatic transformation.

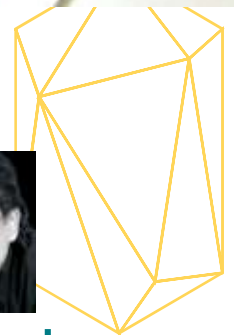
“The problem the client was facing was investing in their real-estate portfolio without supporting data to direct the strategy,” Mr. Cammenga says. “Continuous improvement is only possible when we can measure and react.”

One requirement the team had to meet: Tai-

lor Herman Miller’s Live OS smart office system app for workers in a way that’s simple to use and won’t distract from critical work time. The app is connected to sensors on furniture and rooms and allows workers to, for instance, automatically adjust the height of workstations to personal preferences with one tap of a button on the furniture. The team adjusted the app settings so each employee had to set preferences only once—and never open the app again if they wished.

“We don’t want the system to be something else that employees need to think about,” Mr. Cammenga says. “That would be distracting for employees and ultimately wouldn’t roll up to being a good experience for the business either.”

Defining scope, planning the Live OS installation and the workplace build-out, and executing the implementation took three months. Next came two months of collecting and analyzing data to inform the sponsor’s next smart office project. The team trained system administrators on how to monitor the data, which helped determine how the different spaces were being used, and how they could adjust



“We had so much data, we also discovered various patterns that would help us in optimizing our operations.”

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factors such as number and location of sensors for the next project.

“The result of the project was data flowing into the cloud infrastructure that will be available for Herman Miller’s workplace knowledge consultants to analyze, review recommendations against and engage with the customer around their next workplace refresh,” Mr. Cammenga says.

IOT TRANSITION

Even the smartest systems won’t deliver benefits if workers don’t understand the value. That’s why project teams must facilitate buy-in across all levels of the sponsor organization, particularly with in-the-trenches workers.

The training of workers was key when DHL Supply Chain recently launched a one-month pilot project in Singapore to implement sensors in a section of a warehouse to improve worker safety, says Domnick Almeida, senior director of IT planning and architecture, DHL Supply Chain Asia Pacific, Singapore. The project stemmed from some troubling statistics. According to Singapore’s Workplace Safety and Health Institute, more than 2,000 workers were struck by moving vehicles in the workplace in 2016. DHL Supply Chain wanted to mitigate that risk by using sensors on equipment and wearables on workers to monitor both worker location and fatigue.

Training sessions were brief but targeted since

the tools used were not very complex. Equipment drivers and warehouse supervisors learned how to monitor activity via a mobile app, and the rest of the workers were shown how to activate and use the wearable devices. The sensors and data transmitters tracked employee movement around the floor. For instance, forklift drivers could be alerted when a warehouse worker was close to the equipment—thus reducing the risk that equipment would accidentally strike a worker. The app also notified supervisors when an operator’s heart rate fell below normal levels—a sign of fatigue—so that they could recommend a break. Heat maps identified busy areas to reduce congestion and improve traffic flow around the warehouse.

Once the system was implemented, the project team held daily sessions with the warehouse supervisor and some of the operations staff to hear employee feedback, such as how using the app impacted work routines. The team also taught supervisors how to track and analyze data via dashboards provided by the IoT vendor. In the end, the benefits went beyond workplace safety, Mr. Almeida says.

“We had so much data, we also discovered various patterns that would help us in optimizing our operations, which was very exciting,” Mr. Almeida says. “We focused on analyzing patterns to understand how we can further improve our employees’ work environment and the operations.” **PM**