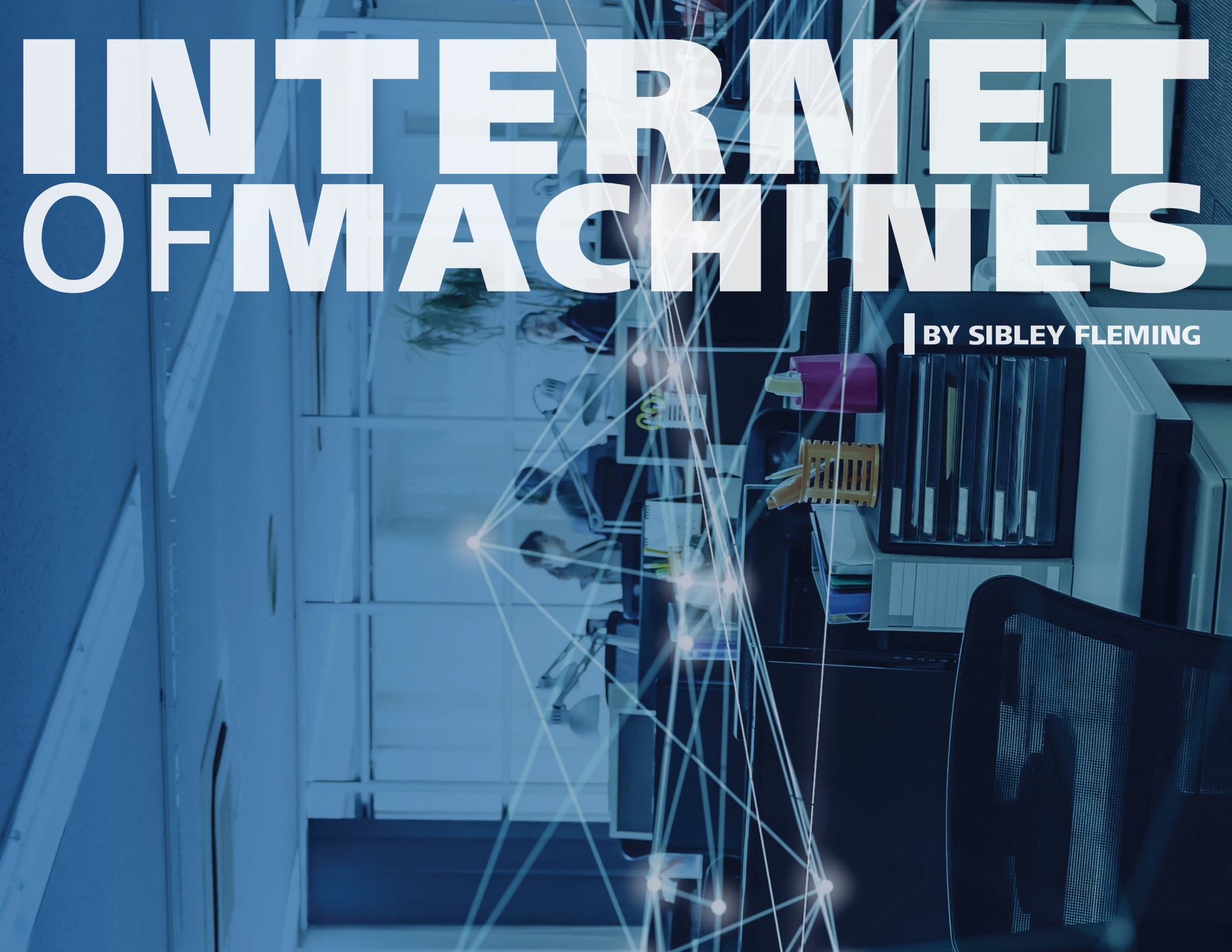
INTERNET OF MACHINES

BY SIBLEY FLEMING



Office users like Grant Pruitt, SIOR, president and managing director of Dallas-based brokerage firm Whitebox Real Estate, who returned to the office in May say the COVID safety measures he's implementing today—like wearing masks, temperature checks, handwashing, hand-sanitizing, wearing PPE gloves, deep cleaning, limiting the number of people in his office—are not technologically based.

"What we'll implement over the future is not necessarily what we've implemented today," Pruitt says. "What we're implementing today are the first steps to get there."

Deloitte managing director Francisco Acoba, leader of the real estate and location strategy practice, says the baseline Internet of Things (IoT) technologies that office owners and tenants should consider—depending upon their positioning—include sensors that monitor occupancy and touchless technology that prevents the need to flip switches or open doors manually.

"These technologies have been around in public buildings for years but will likely see wider deployment as will systems that improve the level of cleaning and sanitation in office and industrial buildings," Acoba says. "What we're seeing is that there's an opportunity now, going to the post-COVID environment, to accelerate the use of some of these technologies, because they will allow for better management and monitoring in regards to safety and health."

Companies like Boston-based Redpoint Positioning are rising to meet the need. Redpoint's social distancing app, for example, delivers real-time location tracking of employees in third-party logistics space, auto manufacturing, and mine operations, warehouses, and other industrial environments.

The platform enforces social distance between employees, conducts contact tracing, and enforces other health and safety measures as well. The technology keeps workers properly distanced via a tag alarm that goes off as an alert to hazard and tracks the location of people and equipment.

Two years ago, Scott Martin, SIOR, a broker for the past 32 years, launched Pasadena, California-based PropTech firm Inteliglas, a full integration of all building systems put into a single pane of glass on your computer screen. Users see a dashboard that shows a high-level of elevators, HVAC, lighting, sprinklers, weather, air quality, occupancy counts, and so on.

The purpose of Inteliglas is to make old buildings smart. "We have an artificial platform we named Ripley and Ripley basically runs the building on autopilot," Martin explains. It selects best practices from building engineers, takes into account the weather that's at the building collectively with occupancy of the building, and micro-climatizes the building, saving energy, in turn significantly reducing costs and a building's carbon footprint.

Along with energy benefits, Ripley provides a host of operational benefits, from mitigating risks of issues like people getting stuck on elevators, or HVAC equipment going bad, by identifying issues before systems fail. Office building owners and tenants can pull up the building metrics on their smartphone or iPad. If they own or rent multiple buildings, they can stay on the same platform and a map pops up with dots representing the different properties.

Ripley also allows companies to deploy their human capital differently. For instance, instead of employees going to the restrooms every hour on the hour, with Ripley, the tenant is notified by text or email that there have been 20 uses. Then, after every 20 uses, it finds a good time to clean the restrooms. The app also addresses traffic in common areas and elevators and helps develop and manage cleaning routines that can, in turn, make people

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feel more comfortable returning to the office.

In addition to creating a safer work environment, having a smart building platform in place can reduce your insurance premiums by 2% to 3%, according to Martin, who notes that insurance companies like both the building profile and risk mitigation components.

In addition, companies like Otis Elevators—the largest maker of elevators in the world—are working to create IoT tech solutions that change the way people interact with elevators, using an existing technology that will allow users to input their destination by voice. Meantime, Otis has released an eCall app, which allows users to call an elevator in a specific building and send it to a specific floor using their smartphone. This phone app was first introduced in Europe in 2016 and is now available in the United States to address COVID-19 social distancing needs.

Most U.S. companies like Deloitte with its 113,000-plus employees, continue to work remotely and are still reviewing its technology options. "A lot of our clients are certainly at this point pushing to the new year (January 2021) if not—in many cases—already to summer of 2021 as their target for a return to the office," says Acoba, who anticipates the return to be gradual over a period of months. He predicts that anywhere from 15% to 35% of the employees will continue to work remotely.

The first step will be implementing the technology that allows building owners and companies to gather data so they know what the workplace and the workforce will look like in the future. "The organizations that take the time now to plan for decisions that they're gonna (*sic*) have to make in the next six, 12, 18 months, are the ones who are really going to be able to benefit from all these opportunities," he says.

Greg Corlis, partner in KPMG's Emerging Technologies group, points out that the industrial segment has been trying to automate for a long time as part of the Industry 4.0, or the Fourth Industrial Revolution, which seeks to blend the IoT, AI, 3D printing, quantum computing, and other technologies to achieve great efficiencies and enhance competitiveness.

While some of these technologies weren't necessarily new to them, they were already looking to adopt and layout the factory floors so the workers aren't so close to each other, Corlis says. "I don't think there are a lot of industrial clients or offices that have fully deployed touchless solutions in most scenarios."

Gesture technology in which you wave your hand in front of a sensor to turn on a light switch is also coming to the forefront, though has yet to see widespread adoption. "There's still a lot that has to occur before this technology is widespread scale," Corlis says. Building operators and building owners are now just thinking about how to integrate these technologies and replace existing technologies with touchless solutions.

Low-hanging fruit for industrial and office users includes touchless sensing, gesture recognition, and temperature—all mature technologies. Another in the lineup—facial recognition—has been banned by several cities because of privacy and accuracy concerns. On the COVID front, a study released in July by the National Institute of Standards and Technology, a part of the Department of Commerce, revealed that facial recognition algorithms are confounded by people wearing masks, which can produce an error rate anywhere from 5% to 50%.

Meantime, other companies are releasing new tech products that promise to recognize who's not wearing a mask, like San Francisco-based LeewayHertz and its "Face Mask Detection System." The tech plugs into existing cameras and

sends alerts to the appropriate parties about non-mask wearers.

While not in place yet, all of these technologies are predicted to see massive growth in the coming years. According to a report from research firm MarketsandMarkets, gesture recognition technology is projected to skyrocket from $9.8 billion in 2020 to $32.3 billion in 2025, while the touchless sensing market is projected to rise from $6.8 billion this year to $15.3 billion in 2025.

Technologies like UV robots—which are autonomous and able to disinfect as well as kill bacteria and germs using UV light—will also likely see widespread adoption. "I think we're starting to see that as an emerging tech that has been around for a while but hasn't had the type of application other than healthcare," Corlis explains. "In the office and industrial space, it's really going to be a requirement going forward."

Who pays for this smart transformation of buildings, however, is still up for debate. Corlis says KPMG has spoken with clients who are property owners who "feel it is the tenants responsibility to implement these technologies." These same clients have no plans to take steps that would turn a building into a smart building or even low-tech measures to address COVID concerns. "They're leaving it 100% up to the tenant to figure that stuff out. That's not my problem."

KPMG's counter-argument has been that moving forward, there will be a surplus of real estate as companies and their employees are far more comfortable with remote working. As tenants shed real estate, they will favor properties adopting new Smart Building technologies that reduce operational costs, support environmental and sustainability efforts and improve the employee and customer experience by creating a safe and comfortable work environment.

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Mark Grinis, global real estate, hospitality, and construction leader at Ernst & Young, agrees with Corlis that tenants will continue to shed space, with some statistics showing workers will remain working from home for 1.9 to 2.4 days a week.

A recent E&Y study revealed that just 18% of respondents have adopted IoT technologies. Even so, he says "That transformation is underway. The tools of technology that have been developed in COVID—access control, space usage utilization, touchless ordering—all the things that drive convenience, good experience, and a very seamless flow of people—those are the things that are sticking and now we're building on them." ▽

MEET THE AUTHOR

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