

# PMNetwork®

## 2019 PMO OF THE YEAR

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From left,  
Amilda Gjecovi,  
Kimberly Johnson,  
Michael Boylan  
and Joyce Walsh  
of Fannie Mae

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**PMI** Project  
Management  
Institute.





## House Party

Consumers spent **US\$2.9 trillion** online in 2018, marking **18% growth** year over year.

Source: Internet Retailer

**The race is on.** As the demand for online purchases and fast delivery increases, retailers are clamoring to build new warehouses, leading to a boom in construction. And, to stay ahead of the pack, online retailers are launching increasingly complex projects in order to expedite fulfillment via automated warehouses.

Consumers spent US\$2.9 trillion online in 2018, marking 18 percent growth year over year, and up almost US\$1 trillion from 2016, according to Internet Retailer. In addition to a massive uptick in the number of warehouses, projects are also growing in size. The number of warehouse projects that are 1 million square feet (92,903 square meters) or larger in the United States increased from 23 in 2007 to 48 in 2018, according to Dodge Data & Analytics.

On the automation front, JD.com built a fulfillment center in Shanghai, China last year that can ship 200,000 orders daily with just four human workers—whose only job is to service the robots. Walmart, meanwhile, is investing more than US\$1 billion to build or upgrade smart warehouses in China, with the aim of completing at least 10 facilities in the next 10 to 20 years.

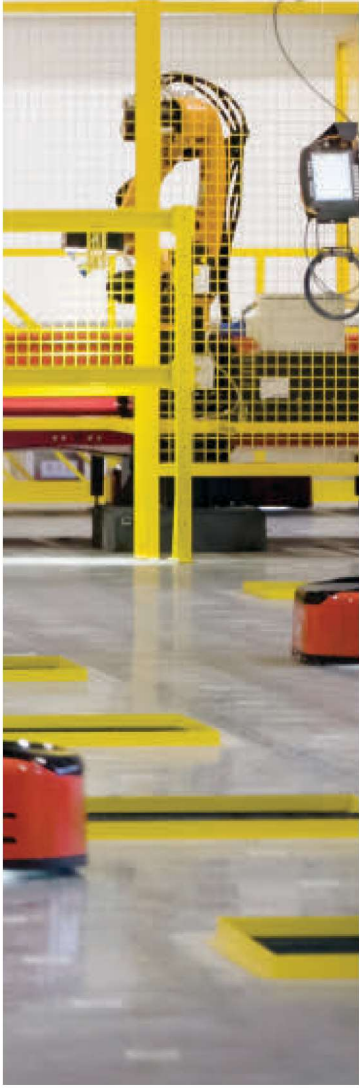
Close collaboration across the entire construction team, paired with a cooperative relationship with local authorities, will help the execution of these large projects, says Anita Pietrykowska, marketing and communications director, Panattoni Europe, Warsaw, Poland. Panattoni Europe is building a 121,212-square-meter (1.3-million-square-foot) warehouse in Poland, expected to be completed by next year. The €62 million project will serve as the primary warehouse for home improvement retailer Leroy Merlin.

“The deadline of the first phase was quite a challenge, and the positive partnership approach of all parties involved was key to success,” Ms. Pietrykowska says. “Each day was planned out, which helped to control the whole construction process, and the design team was present at the construction site for daily meetings.”

### Smart Houses

Many of these projects have added complexity as retailers look to create robotics-driven spaces to process orders faster and at lower costs. Last year, Alibaba affiliate Cainiao Network opened China’s





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—Jeff Bischoff, Gray, Lexington, Kentucky, USA



At left, JD.com’s fully automated warehouse in Shanghai, China. Here, Cainiao Network’s warehouse in Wuxi, China

largest robotics warehouse in Wuxi, with nearly 700 automated vehicles fulfilling 50 percent more orders than in traditional warehouses.

When building smart warehouses, project teams must work closely with retail clients to understand what type of goods are going to be in the warehouse and create a tailored approach so robots can navigate the space efficiently.

“From day one, really before the overall design starts, you need to have a solid working relationship and a good understanding of the material handling that’s going to take place in the facility,” says Jeff Bischoff, executive vice president, business development, Gray, Lexington, Kentucky, USA. (Material handling refers to how warehouse products will be moved, stored and packaged.) The company has built warehouses for major retailers, such as Amazon. “The robots supplier needs to work with you hand in hand as you come up with the design.”

For project teams beginning the process, Mr. Bischoff advises paying close attention to how technological requirements and stakeholder coordination could affect the schedule. “You have to phase your delivery of these projects and turn over

## The Smart Boom

Today’s fulfillment centers are driven by technology from the ground up. While the conveyor belts and robots gliding across the warehouse are some of the most visible elements, advanced warehouse management software oversees much of the technology in order to streamline

workflow and logistics. Tools powered by artificial intelligence minimize errors and increase productivity, while radio-frequency identification organizes and controls inventory.

Minimizing human labor allows warehouses to pack in more goods—a key benefit given the

large number of products and services offered by most major online retailers. Chinese retailer JD.com says that one of its smart warehouses is 10 times as efficient as a traditional facility, which is why the push to incorporate technology into fulfillment centers is nowhere near over.

certain parts of the structure sooner so material handling can start quicker.”

Given the rapid evolution of robotics, warehouses also need to be built with flexibility so they can adapt to future changes.

“There is going to be a new and better process to come. We want the facility to have the utility and structural requirements for future changes,” Mr. Bischoff says. “One thing that is constant in the world of fulfillment is that everything is changing.”

—Ambreen Ali