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No. 5 in a series of articles on the Internet of Things and the occupant experience in commercial buildings.

ENTERPRISE SOLUTIONS MAXIMIZE WORKFORCES IN THEIR WORKSPACES

The term "smart building" has been used often in the industry since the 1980s. But over the decades, the IQ that the term measures has changed.

Initially, smart buildings were defined by operational efficiency due to integrated building systems with advanced controls. While the value of such efficiency was – and is today – important, other measures can demonstrate even more potential value for building owners and tenants. Those measures involve maximizing workforces within their workspaces.

This approach looks beyond building efficiency alone to optimizing space utilization and workforce productivity. These three components are critical to the bottom line because they correspond to the three components of total occupancy costs: space efficiency (measured by space costs), people efficiency (measured by employee costs, which include salaries and benefits), and building efficiency (measured by utility costs).

The bottom line is that space, people and building efficiency should be managed together with an eye to the savings available from each component (see **The Three Components of Total Occupancy Costs**). Enterprise workplace solutions create enormous savings by doing just that, looking at workspaces and workforces as well as building operations.

ACCOMMODATING TODAY'S WORKFORCES
Mobile workforces are becoming the norm for many firms. A 2018 study found that 70% of workers worldwide work remotely at least one day per week, and 53% work remotely for more than half of the week.[1] To maximize their real estate efficiency, firms must develop an efficient response.

In 2016 semiconductor giant Intel launched an unassigned seating/free address workplace strategy, but it proved to be unpopular with employees. In a new 10-story, 630,000-square foot building, Intel is taking a different approach.

In the new building, where 80% of the desks are dedicated to mobile workers, Intel has implemented a platform from Comfy (**www.comfyapp.com**) that enables employees to book desks from their own mobile devices. The booking app processes an average of 2,000 desktop assignments daily and has improved space utilization rates by 20-30%.[2]

The Comfy platform also supports occupant experience and productivity by enhancing Intel's measures for employee retention, absenteeism and work output. In the case of the new building, employees have personal control of lighting and temperature via apps on their mobile devices. These apps are projected to increase workforce productivity by 26%.[3]

These personalized solutions also support more efficient building operations. For example, analyzing employees' requests for adjustments to lighting and temperature can provide an early warning of faulty building equipment. In the Intel building, this factor alone is expected to deliver a 7% energy savings.[4]

The Comfy enterprise platform thus brings bottom-line savings to all three components of total occupancy costs: space, people and building operations.

UNIFIED USER EXPERIENCE AND CLOUD COMPUTING
When enterprise workplace solutions offer cloud computing and a unified experience for all users, more opportunities for savings are created.

The intuitive, cloud-enabled Comfy platform can be scaled across different workforces and workplaces. Employee-facing features include temperature, lighting, rooms, desks, work requests and amenities. A common interface across all

ENTERPRISE SOLUTIONS FOR WORKFORCES AND WORKSPACES

Space Utilization
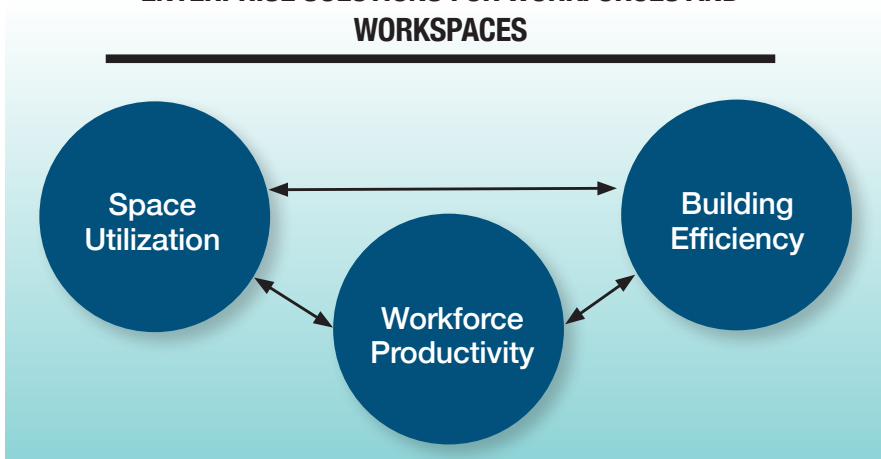
Workforce Productivity

Building Efficiency

Figure 1: The Comfy enterprise solution addresses the three components of total occupancy costs with apps that work together to increase space utilization, building efficiency and workforce productivity.
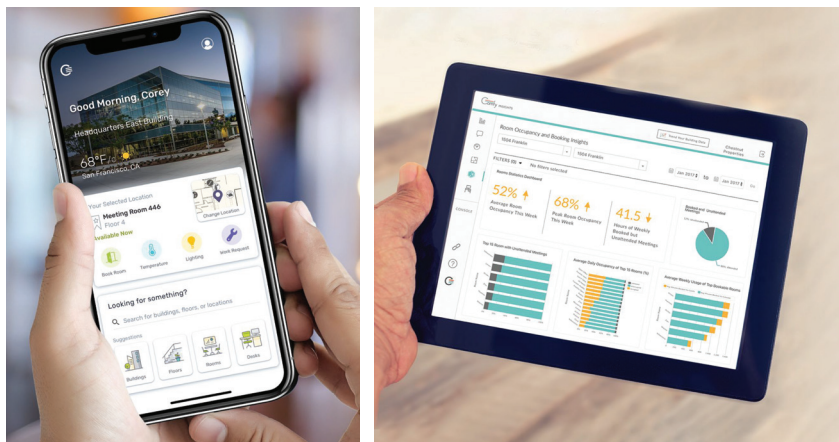
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Figure 2: *(Left)* The Comfy solution allow occupants to use their mobile devices for booking desks, adjusting lighting and performing other tasks. *(Right)* Employers control their occupancy costs with insights from dashboards showing data on space utilization.

Real-time data from interactions between workers and the enterprise software provides up-to-date insights that are displayed on a visual dashboard for building management. Historical data can be analyzed for additional insights into the workforce's response to the workplace, including benchmarking data across a building portfolio.

Because the Comfy solution is vendor agnostic, it can serve as the common platform for building systems in new and existing buildings. For example, if a building already has sensors installed for lighting and temperature, Comfy integrates the sensor data and existing zones into its enterprise solution. This data integration can take place onsite through the building automation system (BAS) or in the cloud. ■

modules allows users to easily adjust lighting and temperature, book rooms and desks, submit work requests and workspace feedback, and facilitate wayfinding by locating amenities within the building (e.g., a café with current menu, a gym with activity schedule) as well as in the surrounding area. The Comfy solution integrates with existing IT and OT systems in a workplace without a need for adding or reconfiguring onsite equipment.

In practice, the synergies across functions provide more value and efficiency than just the sum of the parts. For example, the booking app uses occupancy sensor data to determine if a booked space is actually in use or vacant, provides a reminder to the employee who booked it, and indicates that a previously booked space is currently available. Personal lighting control allows employees to optimize light levels for a special task, further increasing their productivity. Personal temperature control reduces the number of complaints to building management. Data about occupant preferences is used by machine learning for automatic adjustment of HVAC setpoints throughout the day.

[1] www.cnbc.com/2018/05/30/70-percent-of-people-globally-work-remotely-at-least-once-a-week-iwg-study.html

[2] www.intel.com/content/www/us/en/smart-buildings/smart-buildings-get-smarter-study.html, p. 2.

[3] Ibid.

[4] Ibid, p. 3.

For more information on enterprise solutions for workspaces, visit **www.comfyapp.com**.