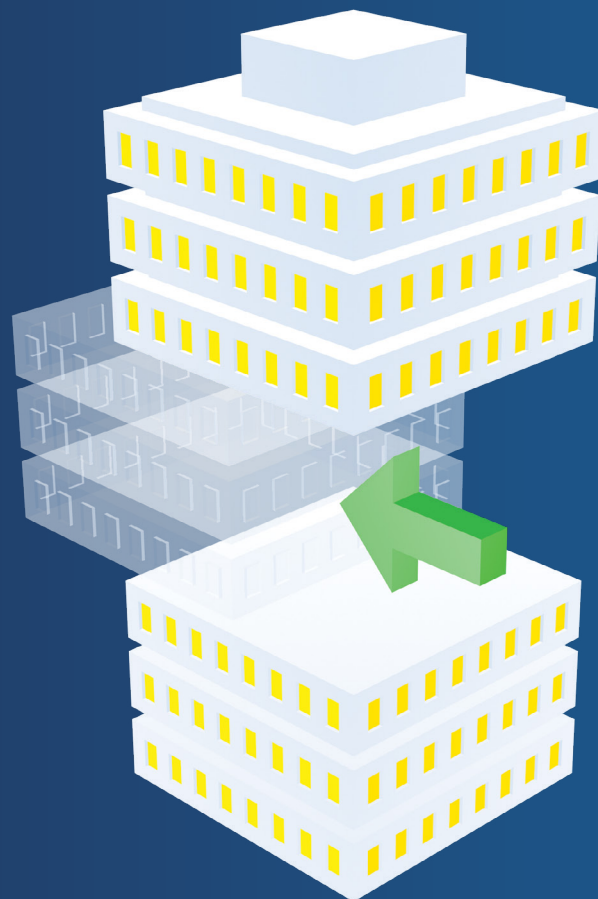GLOBAL TECHNOLOGY BRIEFING

# SPACE UTILIZATION BEST PRACTICES

OPTIMIZING REAL ESTATE EFFECTIVENESS

INTRODUCTION

With the competing realities of more employees concentrated in smaller spaces and the increased desire for useful, collaborative areas, optimizing already limited space is important for the productivity and efficiency of employees and of the building itself.

Commercial buildings contain a number of functional spaces, including the main reception, common work areas, meeting environments, private office locations, technical rooms and various departmental zones. It is important to understand the unique challenges and potential of each space in order to maximize the technology within the space to achieve optimal levels of productivity.
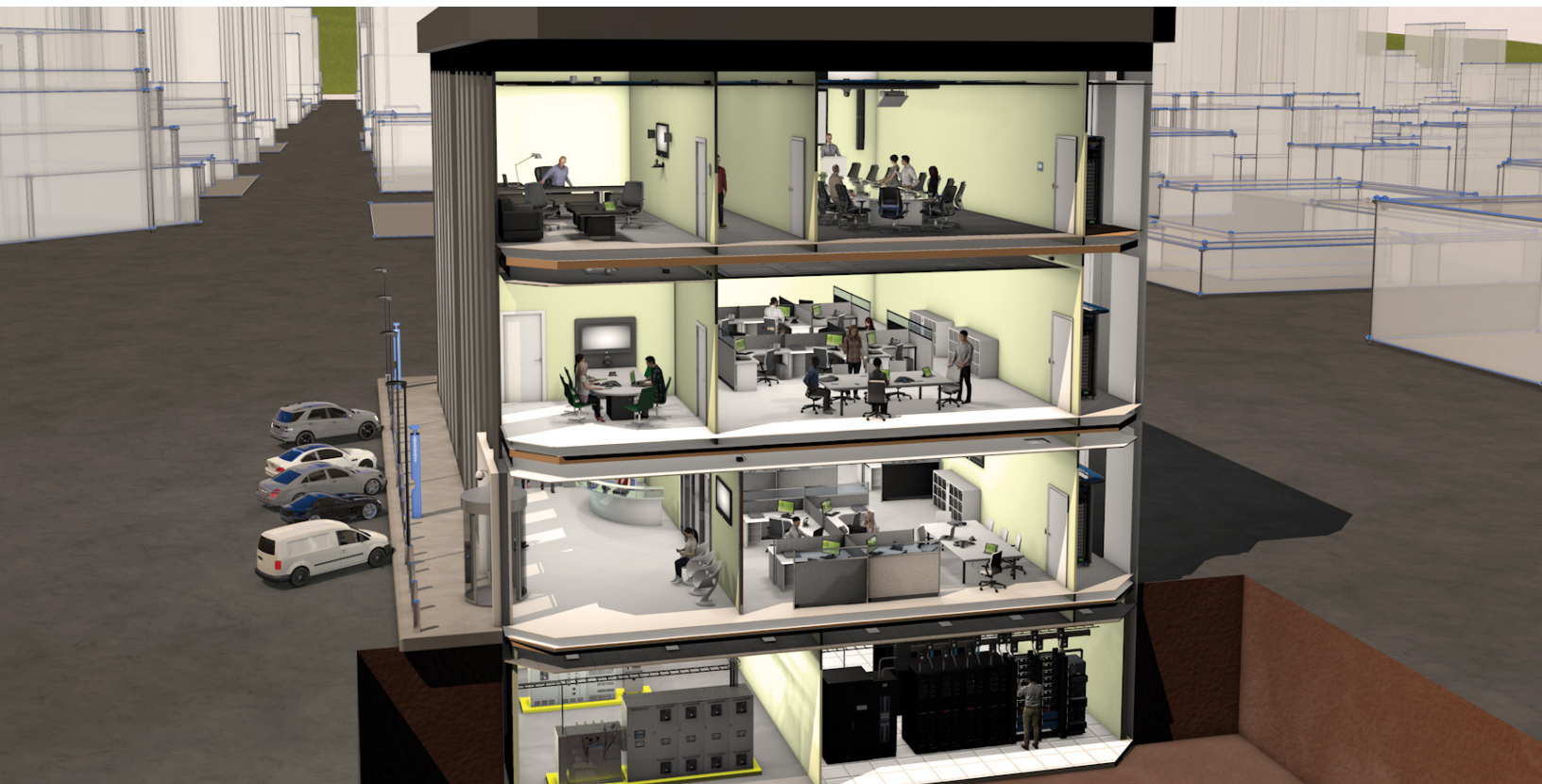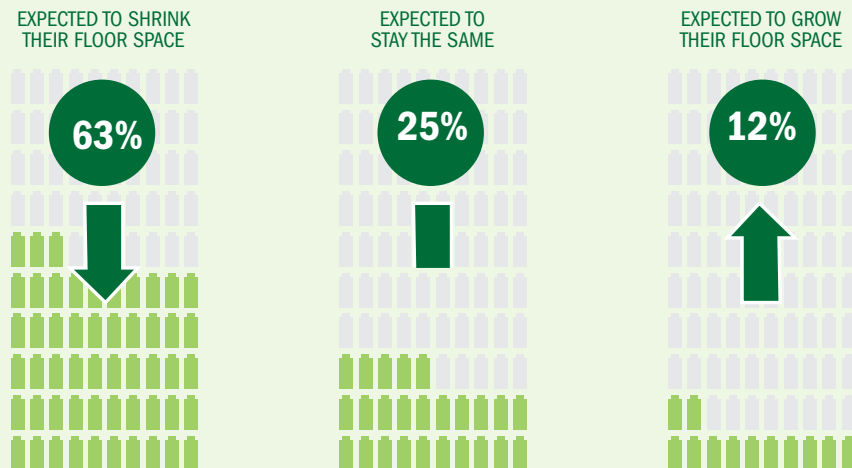
The Reality of Consolidation

A survey of corporate real estate professionals shows 63 percent expect their company's real estate portfolio to contract this year. This is compared to 12 percent who expect growth and 25 percent who believe it will remain the same.

Meanwhile, many organizations are moving towards alternative work strategies:

• Home offices on a full-time or part-time basis

• Hoteling or free address work spaces

• Mobile work at multiple spaces

• Satellite offices

Commercial Consolidation

EXPECTED TO SHRINK
THEIR FLOOR SPACE

63%

EXPECTED TO
STAY THE SAME

25%

EXPECTED TO GROW
THEIR FLOOR SPACE

12%

Source: CoreNet Global/ Steelcase, Reducing the Portfolio & Maximizing the Use of Existing Space.

CONSIDERATIONS

Space Utilization and Productivity

Employees spend less time in the office and more time in alternative workplaces than ever before. Leading companies have been able to embrace this trend and, through a smart building strategy, enhanced employee productivity up to 18 percent.

For example, improved air quality, just one element of staff comfort, can boost worker productivity from .05 to 5 percent, according to a study by Lawrence Berkeley National Laboratory.

Workplace Trends

Employee engagement initiatives are driving the IT requirements in physical office workspaces.

Wireless networks are becoming more intricate as more employees are concentrated in smaller spaces.

Conference rooms are frequently the focal point for introducing new technology solutions.
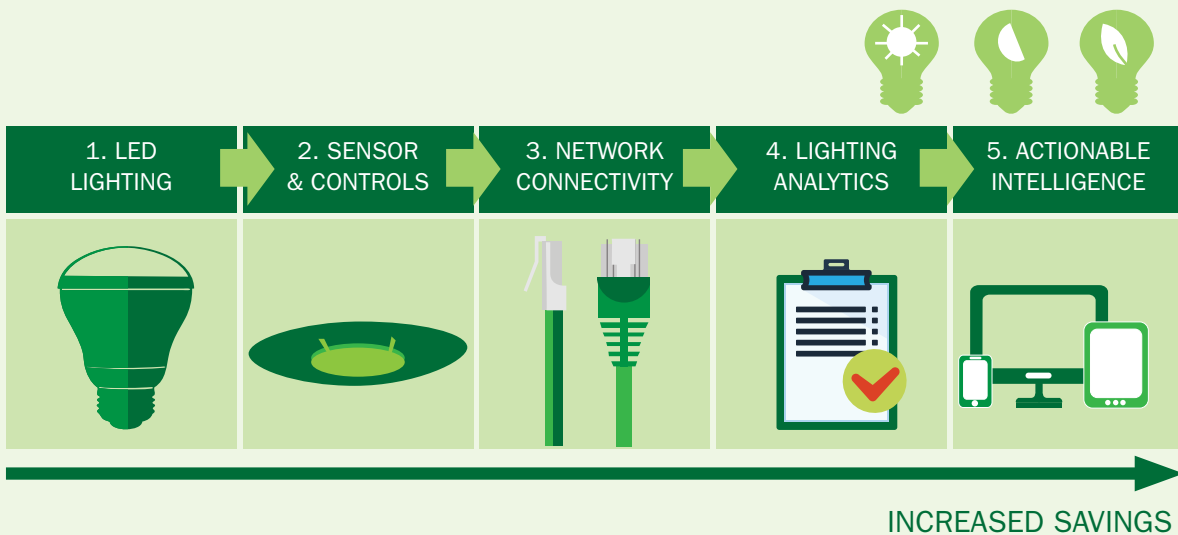
IT interaction with the corporate real estate group is growing.

Sources: IBM and Honeywell.

Enabling Smart Lighting

Smart lighting is a key technology, where intelligent sensors capture information that can drive essential building productivity performance. Smart lighting is enabled through Power-over-Ethernet (PoE) or network controls.

Enabling Smart Lighting

| 1. LED LIGHTING | 2. SENSOR & CONTROLS | 3. NETWORK CONNECTIVITY | 4. LIGHTING ANALYTICS | 5. ACTIONABLE INTELLIGENCE |

INCREASED SAVINGS

Source: Gartner. The five phases that smart lighting providers must address.

The 3/30/300 Rule

According to commercial real estate leader Jones Lang LaSalle (JLL), there is a 3/30/300 rule for understanding cost in terms of employees and commercial buildings.

Organizations on average spend approximately $3 per square foot annually for utilities, $30 for rent and $300 for payroll. While these numbers are not true for every organization, especially a few key in-demand markets, they are useful to understand the drastic difference between the three areas of expenditure.

JLL explains it like this:

According to the 3-30-300 model, the greatest financial savings of greening a workplace may not be energy but productivity.

• A two percent energy efficiency improvement would result in savings of $.06 per square foot.

• A two percent gain in productivity is worth $6 per square foot.

The best strategy, therefore, is to identify measures that improve employee productivity and will also result in space efficiency, resource conservation or energy efficiency.

The purpose of better utilization of space in a commercial setting includes the following:

• Reduce costs of occupancy – either the rent or capital cost of the building due to reduced footprint.

• Reduce operating costs through energy efficiency.

• Provide a comfortable and efficient workplace where employees can safely and effectively perform their assigned tasks.

3/30/300 Rule in Commercial Buildings
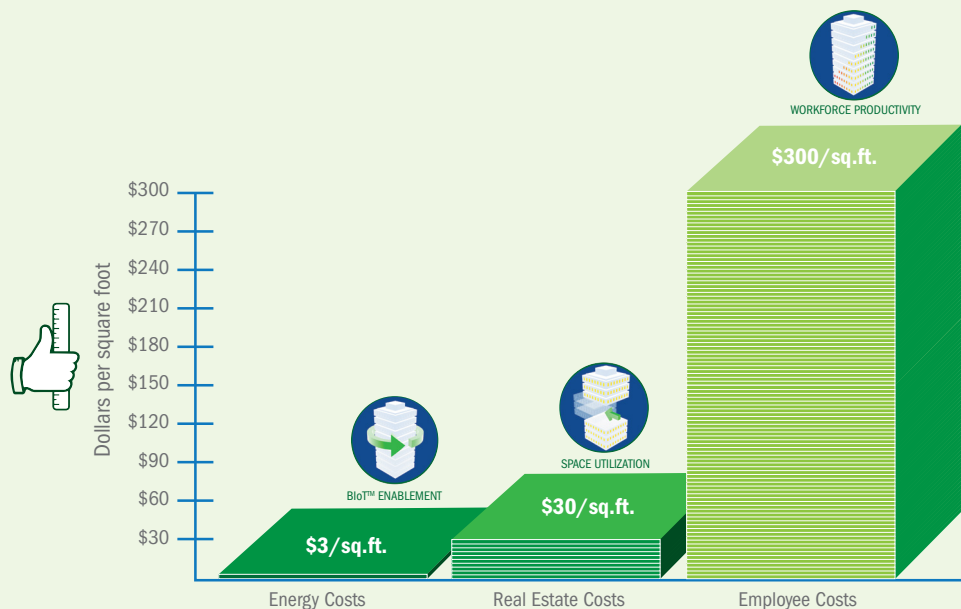
Source: Jones Lang LaSalle, Perspectives on Workplace Sustainability. 2015.

CHALLENGES

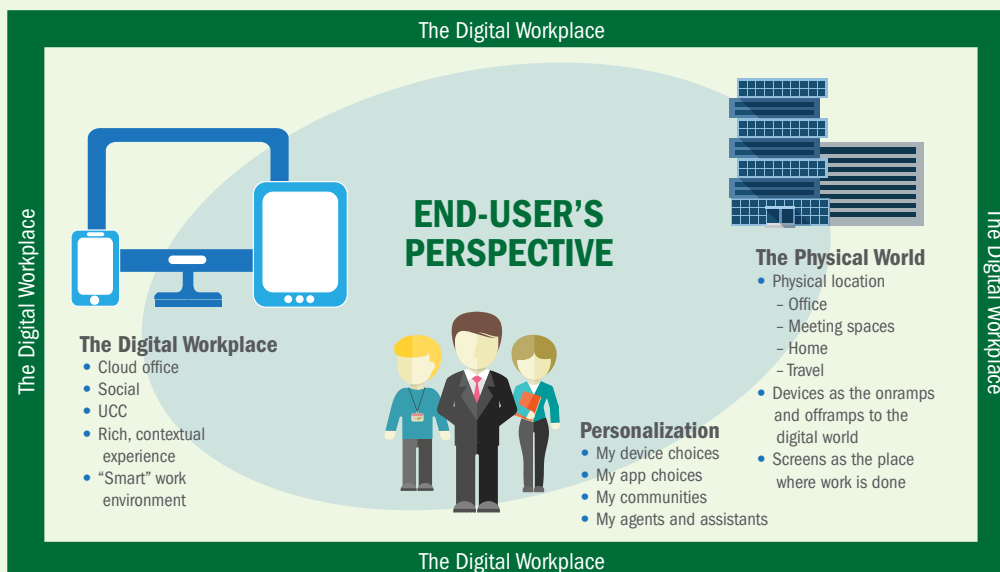## Challenge I: Adapting to a Changing Workforce

It is crucial to understand the particular economic and social drivers of the modern workforce so you are able to position your physical spaces as an asset.

Gartner defines a digital workplace as a business strategy to boost employee agility and engagement through a more consumerized work environment. Just as in a retail environment you would pay attention to consumers' preferences and habits to achieve the end goal of sales, in an office environment you must pay attention to the preferences and habits of the workforce to achieve the end goals of efficiency and productivity. Technology supports the environment, but it alone is not sufficient to build a digital workplace. An awareness and understanding of workforce trends is also necessary.

Source: Gartner. The Recipe for a Digital Workplace. 2016.

The Digital Workplace from the End-User Perspective

The Digital Workplace

END-USER'S PERSPECTIVE

The Digital Workplace
• Cloud office
• Social
• UCC
• Rich, contextual experience
• "Smart" work environment

Personalization
• My device choices
• My app choices
• My communities
• My agents and assistants

The Physical World
• Physical location
  – Office
  – Meeting spaces
  – Home
  – Travel
• Devices as the onramps and offramps to the digital world
• Screens as the place where work is done

Challenge II: Growing Cost of Real Estate

The cost of commercial real estate is up 16 percent across the United States in the last decade and is even higher in urban areas. With the phenomenon of urbanization, that trend will more than likely continue at a rapid pace in many competitive areas.

Specific drivers of cost include increased utility costs, increased environmental awareness and increased regulatory requirements.

Real Estate Alternatives

Today's employees have been freed from the constraints of a desk. They can perform key tasks remotely, at a secondary site, in a cafe or while traveling.

Source: Forbes. Neil Howe, The Reality of the Commercial Real Estate Boom. 2016.

Alternatives to the Traditional Commercial Setting

cafe?
conference?
in transit?

at the office   in the branch   from home   ...or just offsite

Challenge III:
Rising Energy Costs

The Department of Energy notes that 20 percent of all energy used in the United States last year was consumed by commercial buildings, costing companies a collective $180 billion.

Challenge IV:
Offering Functional
Meeting Environments

With increasing limitations in space, it becomes even more difficult to create settings that allow for simplified sharing of ideas, which leads to improvements in productivity.

In some cases, organizations have an adequate amount of square footage to create functional meeting environments, but the area is not being utilized in the most efficient manner. A first step is to locate specific rooms that are heavily utilized, and look for ways to capitalize on them.

Challenge V: Meeting Employee Comfort Requirements
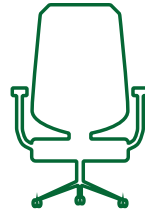
Improved air quality, just one element of staff comfort, has been shown to boost worker productivity by anywhere from .05 percent to 5 percent, according to a study by Lawrence Berkeley National Laboratory.

Other factors to employee comfort include seating and desk arrangements, lighting, and fitness and health opportunities.
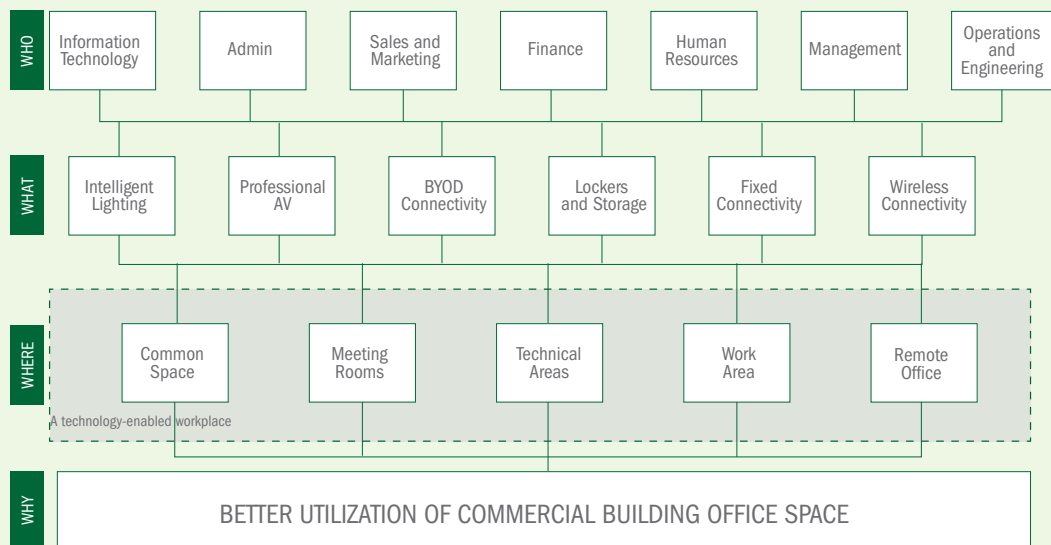
So what is the goal, and how do we get there?

In order to achieve better utilization of commercial building office space, we need to better understand:

• WHO are the various departments of the business?

• WHAT current systems are being used or considered?

• WHERE are the best areas and spaces to get the most ROI?

This is a role-based view of employee functionality, which recognizes that people perform multiple types of work practices over the course of the day. Knowing the work they do is important to overall understanding.

A Technology-Enabled Workplace

WHO	Information Technology	Admin	Sales and Marketing	Finance	Human Resources	Management	Operations and Engineering

WHAT	Intelligent Lighting	Professional AV	BYOD Connectivity	Lockers and Storage	Fixed Connectivity	Wireless Connectivity

WHERE	Common Space	Meeting Rooms	Technical Areas	Work Area	Remote Office

A technology-enabled workplace

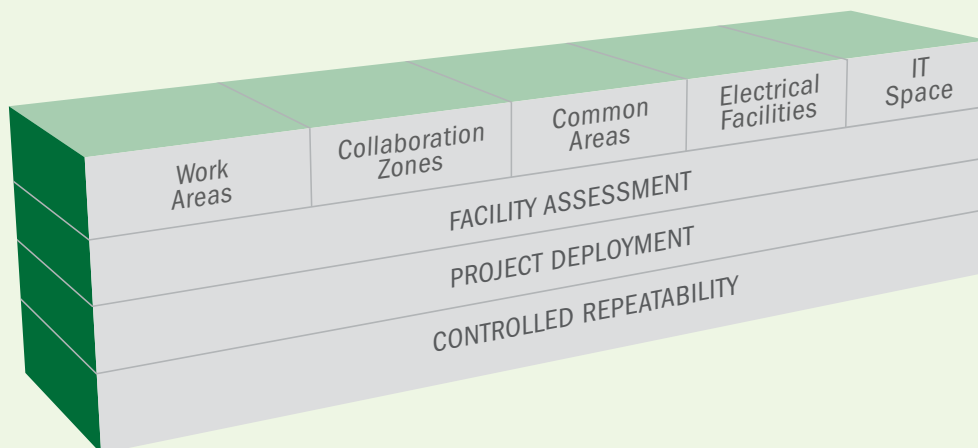| WHY	BETTER UTILIZATION OF COMMERCIAL BUILDING OFFICE SPACE

SOLUTIONS

The Anixter Approach
Optimize Real Estate Effectiveness

Reducing real estate costs, adjusting to changes in employee behavior and efficient resource allocation are the main drivers behind the need to optimize real estate effectiveness. Our approach provides a clear set of guidelines and best practices for supporting this optimization, which can lead to increased employee performance and building energy efficiency.

Work Areas | Collaboration Zones | Common Areas | Electrical Facilities | IT Space

FACILITY ASSESSMENT

PROJECT DEPLOYMENT

CONTROLLED REPEATABILITY

Best Practice I:
Work Area

Create open and flexible work areas that can support permanent and visiting employees. Many organizations achieve optimization in work areas through the adoption of "hoteling" or "hot desking." By limiting dedicated work stations while also thoughtfully attending to private and public zones, it is possible to reduce square footage requirements and their associated costs.

Considerations

When optimizing work areas, it is important to consider:

☐ What is your risk of unsecured storage or employee belongings?

☐ How do you manage hot desking and hoteling?

☐ What is your ergonomics policy/strategy?

☐ How do you control your lighting?

Recommended Solutions

Mobile and Fixed Network Connectivity
As people move to different areas of the building, they expect similar network connectivity for their corporate and employee-owned devices (laptops, tablets, smart phones, etc). The same is true as people come and go from the building itself. Scheduling becomes an important factor in managing space and network access.

Locker Facilities
In an environment where nobody has an assigned location, it is important to provide secure storage for personal items. Lockers are a great way to provide that. This can be in the form of permanent or mobile lockers, the latter of which allow for more flexibility in managing space for non-permanent or traveling employees.

LED Controllable Lighting and Sensor Network
Personalization of IP-based systems, like PoE lighting, device activation, VoIP, room controls and others, helps maximize building efficiencies and personal productivity. Lighting is the easiest way to get sensors into a space that can enable occupancy tracking, temperature and humidity measurement and daylight harvesting. This solution is about the collection of data to develop actionable intelligence for building owners and administrators.

Best Practice II:
Collaboration Zone

Provide dynamic environments that simplify sharing of content and conferencing demands. These environments include small and medium-sized conference rooms, huddle rooms, as well as more customized executive and auditorium presentation areas.

Considerations

When providing collaboration zones, it is important to consider:

☐ Where do you currently share ideas and content?

☐ What is/are your conferencing method(s)?

☐ How do you maximize user experience?

☐ What are your meeting room standards?

Recommended Solutions

IP-enabled Professional AV
The best-in-class solutions now run on IP networks and allow for the best options for collaboration zones. Solution categories include digital signage, sound and paging, conferencing, collaboration and control, and allow for a professional A/V solution with seamless use across locations.

HDBaseT Transmission
The latest generation of A/V transmission for commercial spaces provides audio, video, control, Ethernet and power over a single Category cable. By doing so, a number of previously unusable spaces are now free to be utilized.

Standards-based Infrastructure
Following standard structured cabling guidelines makes the process of future-proofing easy to understand. As A/V technologies evolve, a high-performance structured cabling allows you to support the latest edge devices with minimal disruptions.

Best Practice III:
Common Area

Establish consistent communication and connectivity in high-traffic areas of the building. Examples include corridors, reception and cafeterias. These spaces need to be flexible enough to adapt to a number of functions, including business and guest utilizations.

Considerations

When planning for common areas, it is important to consider:

☐ What is your visitor management process?

☐ How do you share information in common space?

☐ What are your "way finding" capabilities?

☐ How do you provide public network access?

Recommended Solutions

Automated Visitor Registration Tools

As concerns over emergency events increase, it is important to identify visitors and ensure their location is known within the building. A benefit can also be found in non-emergency situations, where visitor registration tools can assist in the guidance and control of the preferred experience for the visitor.

Networked Digital Signage Infrastructure

Networked digital signage allows for directed messaging to employees and customers based on need and location. It also allows employees to used content stored on network drives. Managed within a single building or across multiple locations, a networked system provides fresh content to common areas on a regular basis, empowering the delivery of the right information to the right audience at the right time.

High-Definition Large-Format Displays

With a networked digital signage infrastructure in place, high-definition displays represent the best way to communicate a corporate message in a short amount of time to employees and visitors in common areas. It is important to utilize commercial-grade displays specific to the behavior and usage projections of a particular location, as this will provide longer life for the product and more flexibility for use.

DAS, Small Cell and Wi-Fi Solutions

A robust wireless coverage solution allows employees and visitors to use common areas as overflow work spaces when necessary. It also addresses the way people utilize personalize devices throughout their time in a commercial setting.

Best Practice IV:
Electrical Facilities

Monitor room-by-room electricity consumption and performance with intelligent power solutions.

Considerations

When supporting electrical facilities, it is important to consider:

☐ How do you currently monitor electricity in your facility?

☐ What are the main areas of energy consumption?

☐ What is the expected savings using LED lighting?

☐ Have you adopted multi-speed fans for HVAC?

Recommended Solutions

Intelligent Power Backup
As more applications rely on remote powering methods such as Power-Over-Ethernet (PoE) and HDBaseT, centralized power backup is needed to ensure application resiliency. At a minimum, line interactive smart UPS backup provides protection for the most common power anomalies such as power failure, sag, surge and under/over-voltage events. For higher levels of protection, consider double conversion UPS solutions. For facilities such as healthcare that may require additional resiliency from power anomalies, UPS platforms that support A and B power feeds can be considered.

Intelligent LED Lighting
Connected Power-over-Ethernet or network control lighting fitted with sensors can collect a variety of data and provide building owners and administrators with actionable insight into their spaces. Sensors can monitor energy consumption in addition to tracking occupancy, measuring temperature and humidity and harvesting daylight. LED lighting should be utilized to maximize energy savings. From an intelligent power backup perspective, emergency lighting should have at least 90 minutes of runtime during a power outage.

IP-based Environmental Sensors
Ethernet connectivity is commonplace among many building subsystems such as video surveillance, access control and connected lighting platforms. Utilizing a single protocol communications framework to exchange information across multiple BMS and physical security platforms is the principal advantage of IP-based networks. This approach is extending further to the building edge as more BMS devices are becoming IP-enabled. While native Ethernet device interfaces provide for a more seamless integration path to building management, there are solutions that can provide the necessary conversion from common building protocols such as BACnet, LonWorks and Modbus to Ethernet. Consideration should be given to the migration strategy that optimizes cost with the technical benefits of a fully integrated building management platform.

Best Practice V:
IT Space

Plan for the appropriate floor space to support telecommunications rooms, data centers and IT resources.

Considerations

When utilizing IT Space, it is important to consider:

☐ How do your IT closets cater for growth?

☐ What are your considerations for wireless coverage?

☐ How do you use IP technology in meeting rooms?

☐ Do you use an on- or off-premise data center?

Recommended Solutions

Standards-based TR and Equipment Room Design

The industry standards committees such as the TIA, ISO and BICSI provide guidance on structured cabling design for commercial buildings. A telecommunications room should be designed and sized according to the area that it is serving within the building structure, but consideration should be given to the number of devices that need to be supported up to and above the basic production network applications. The ANSI/TIA-568.1-D Commercial Building Telecommunications Infrastructure Standard and the ANSI/TIA-862-B Structured Cabling Infrastructure Standard for Intelligent Building Systems can be referenced when designing the TR and ER spaces.

Allowances for Future Proof Pathways and Spaces

The rapid pace of technology innovation increases the complexity of pathway and space design, as it is difficult to anticipate the technical needs of a commercial building over its lifespan. Early planning and adopting a cross-functional design approach across facilities and IT can work to ensure a building layout that supports the current and future application requirements of an organization. The ANSI/TIA-568-D Telecommunications Pathways and Spaces Standard provide best practice recommendations for pathway and space design in support of telecommunications media and equipment within buildings.

Integrated Structured Cabling for Meeting Room Furniture

In many commercial building environments, space can come at a significant cost premium, as the floor layouts may not accommodate the additional TRs or pathways needed to support the number of devices and applications being deployed into either a new or existing structure. Zone cabling can provide flexibility by extending network distribution nodes needed for devices such as wireless access points, surveillance cameras, door controllers and connected LED lighting from the TR further into the work area.

Enterprise, MTDC and Edge Data Center Solutions

Data center design is not a one size fits all proposition. Traditional on-premise data centers optimize capital spend around physical security of an organization's computing assets coupled with lower density computing environments. Multi-tenant data centers provide cost-effective off-premise computing for organizations looking to control their IT spend and improve operational efficiency. Distributed or edge-based computing has advantages in delivering network computing and storage closer to the user.

TECHNOLOGY SUMMARY

Technology Solutions

The chart below details the technology solutions that can support optimizing real estate effectiveness in a commercial building.

TECHNOLOGY	Work Area	Collaboration Zones	Common Areas	Electrical Facilities	IT Space
LED lighting	✓	✓	✓	✓	✓
Sensor networks	✓	✓	✓	✓	✓
Conferencing	✓	✓			
Sound and paging	✓	✓	✓	✓	✓
Digital signage	✓	✓	✓		✓
Fixed network connectivity	✓	✓		✓	✓
DAS | Small Cell | Wi-Fi	✓	✓	✓	✓	✓
Pathways and cable management	✓	✓	✓	✓	✓
Intelligent power				✓	✓

Anixter's Technology Support Services can offer further insight to your specific application. For more information, contact your local Anixter representative.

anixter.com/commercialbuilding

SUPPLY CHAIN SOLUTIONS

As you develop a smart building roadmap, it's also important to consider the physical migration from the existing environment to the building's future state. This entails identifying the challenges and risks during the installation phases of technology deployment. Coordination between material deployment and installation schedules can have an impact on the productivity, efficiency and connectivity of work environments.

Properly coordinated deployments allow for tangible savings in time, reduced installation costs and increased efficiencies, all while reducing the risks of lost productivity associated with the physical migration of the building environment.

Challenge	Service	Save Time	Reduce Costs	Increase Efficiency	Mitigate Risk
Coordinating installations by kitting similar solution components	Headset, workstation, wireless, lighting and patch cable kits	✓	✓	✓	✓
Creating a functional roadmap for material deployment from our site, contractor site or the job site to limit disruptions in business operations	Material staging and inventory management solutions	✓	✓	✓	✓
Reducing on-site waste removal and dust contaminates	Product pre-assembly and off-site configuration	✓	✓	✓	✓
Utilizing standards-based labeling schemes for ongoing asset utilization and maintenance	LED lighting assembly, labeling and kitting	✓		✓	

For more information, contact your local Anixter representative.

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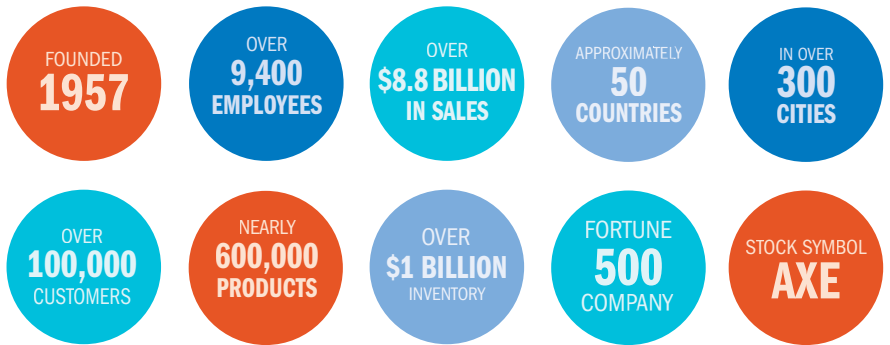## SPONSORED BY ANIXTER'S TECHNOLOGY ALLIANCE PARTNERS[SM]

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