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Power Over Ethernet: A Critical Ingredient to Your Cost-Saving Strategy

Part 2 of a 3-Part Series, "Power Over Ethernet: The future of connectivity"

Deloitte is exploring Power Over Ethernet (PoE) technology applications for the workplace and its potential to unlock new ways to save energy, reduce spend, and optimize the portfolio through expanded insights. In Part 1 of our series, we explored PoE and its essential role in meeting corporate sustainability objectives. Part 2 explores additional use cases for cost savings.

With office vacancy rates at record highs this year,[1] facility managers are routinely told to do more with less. In parallel, executives are asking real estate leaders to consolidate administrative portfolios and reimagine floor plans to better align with the evolving role of the workplace. These combined forces only add to other pressures for CFOs to unearth additional cost efficiencies across the enterprise. In a recent Deloitte survey of CFOs, respondents expressed lower expectations for YoY growth in revenue, earnings, capital investment, dividends, and domestic hiring compared to several months prior.[2] In fact, 54% of CFOs indicate that CEOs are asking them to focus on cost reduction activities, with office savings being a top target.[3,4] Enter PoE, which can be a vital piece of the puzzle when considering opportunities for reduction in long-term operational costs of a real estate portfolio.

At the same time, workplace strategy and operations leaders must provide spaces employees want to experience. Many organizations are pushing for employees to return to work this year, with 90% of companies surveyed saying they will return to work by the end of 2024.[5] With new advances in the amount of power that this technology can deliver, PoE has become a key instrument in providing a differentiated workplace experience through the myriad of connected devices comprising a PoE ecosystem.

An employee-centered workspace
As employees weigh the pros and cons of coming into the office, tech-enabled amenities have become the new draw—specifically, a tech-infused workplace designed to enable seamless collaboration while providing individualization. PoE facilitates the full integration of technology within the office environment, spanning office infrastructure, fixtures, furniture, and office equipment. This capability

not only meets the workforce's preference for sophisticated "smart" office features but also allows data from the same devices to inform how space planners consider future workplace investments.

Floorplan flexibility has also become paramount. Office spaces must be built to adapt to utilization based on market dynamics while minimizing downtime for reconfiguration and renovations. Layouts bound to a traditional electrical infrastructure drive up costs for redesign, take more time to plan for, and require more time to deliver.

To create spaces with alluring amenities and elevated flexibility, PoE is often a differentiator. Smart devices such as adjustable-height desks, room-booking tablets, touch-enabled kiosks, and digital signage are no longer bound by fixed power outlets and legacy electrical systems, meaning that amenities can be offered anywhere. Furniture configurations are not only easier to update but are also more customizable. Thanks to PoE, floorplans can be more compact, enabling businesses to precisely tailor their workspace layouts to optimize the composition of individual focus areas, teaming spaces, and conference rooms. This technology empowers organizations to provide their employees with exactly what they need—and where they need it—by significantly reducing the dependency on traditional wiring constraints.

Cisco's PENN1 headquarters is a great example. Cisco underwent a modernization program that consolidated seven separate office locations into one facility while increasing individual and collaborative workspaces. The PoE infrastructure allowed Cisco to simplify its retrofit, realizing 1,000 pounds of copper wiring material avoidance. The setup also allowed Cisco to provide PoE height-adjustable desks

without extensive core drilling and wiring refits, resulting in a $360,000 cost avoidance. Cisco estimates that the average cost to move two-line voltage desks would be $5,000 and 1.5 days compared to a PoE-enabled desk, which would cost $1,500 and four hours.[6]

PoE infrastructure has allowed Cisco to not only consolidate space more efficiently, but also provide tech-enabled amenities optimized for the floor plan. Through PoE, Cisco uses real-time occupancy data to regulate and control lighting, window shades, HVAC systems, and other occupant experiences. PENN1 saw a 160% increase in unique badge IDs per month, which the company partially attributes to the employee experience changes PoE enabled. These examples illustrate the significant benefits PoE technology can provide.[7]

Streamlined facility management

While it may be evident that PoE reduces the complexity of electrical infrastructure needed to power workplace technologies, there are countless other operational advantages. One of the best examples is that it minimizes the need for traditional power outlets throughout a facility and the associated electrical junction boxes, conduits, and wiring.

PoE can reduce the cost required to extend the existing power infrastructure as office needs change. While electricians may still be required to ensure the overall electrical infrastructure can support the projected power requirements for a facility, network engineers can do the heavy lifting in specifying the requirements of a PoE-enabled network. For office managers, a simplified delivery model saves both time and money. Devices can be added or removed without costly network expansions, extensive electrical rewiring, or reconfigurations. Fewer specialized skills are necessary for installation and upkeep.

PoE paired with IoT devices drives additional efficiencies by turning each connected asset into a smart device. With the integration of power and connectivity into a single system, problems are easier to diagnose and troubleshoot. Analytics dashboards generated by IoT technologies may point to the problem immediately, or even before they happen, and can reduce the time and cost associated with issue resolution and downtime assets.

Furthermore, PoE technology allows network administrators to manage the connected ecosystem, reboot devices, and cycle power to individual ports. Administrators can reset devices remotely through centralized power management without physically accessing a malfunctioning or unresponsive device. These capabilities may sound simple, but facility managers know just how valuable a centralized control hub can be both in terms of time and resources.

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Laying the groundwork for a digitally enabled workplace

PoE has gained traction with real estate executives and facilities leaders who understand its central role in enabling smart buildings and connected workplaces. In just 20 years, PoE has transitioned from a niche technology to a crucial component of networking and facilities infrastructure. Initially able to provide just 15 watts to power basic devices, PoE can now supply enough power to support lighting controls, advanced security surveillance, HVAC systems, and point-of-sale technology. Advancements in Ethernet bandwidth and data transmission speeds have also expanded the potential of PoE to now include support for data-intensive applications such as high-definition video, with even more innovations on the horizon.

In the final part of this series, we'll unpack the key considerations executives must address for a smooth PoE implementation within their organizations.

At Cisco's New York office, PoE has allowed the company to install employee amenities, such as height-adjustable desks, away from the central power grid. Untethered by power sockets, Cisco was able to compress seven separate office sites into one facility while increasing individual and collaborative workspaces. Cisco states that PoE has allowed for improved accessibility and more cost-effective moves, additions, and changes.[8]

References

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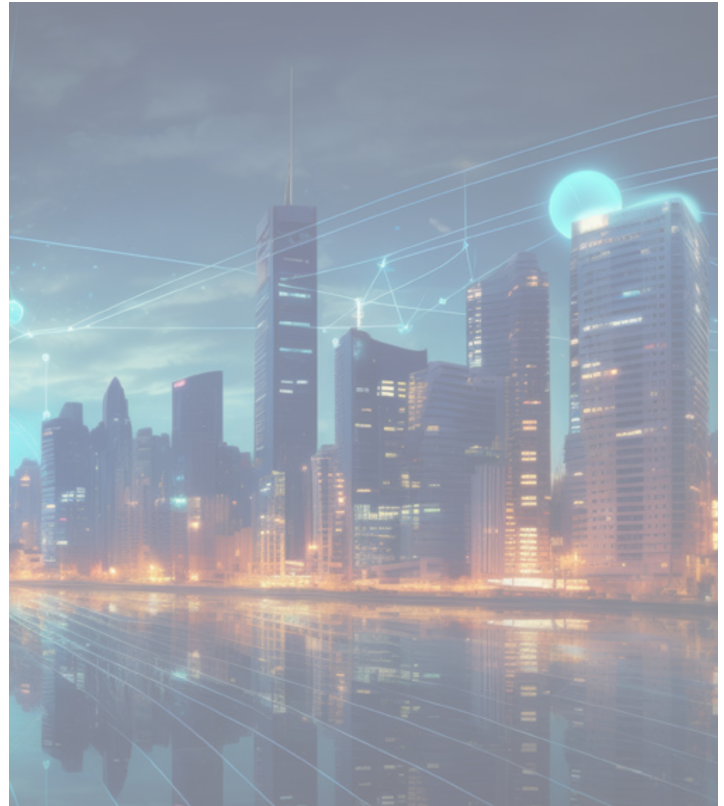
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