SOLVING NETWORK PERFORMANCE CHALLENGES

With the Internet of Things rapidly expanding, reliable physical layer cable and connectivity has become as critical as the physical infrastructure that supports the delivery of electricity, gas and water for the efficient operation of businesses, schools, hospitals and other organizations and facilities. In fact, by 2020, it's estimated that up to 50 billion devices will be connected to the internet.[1]

Network Performance Challenges

In order to have a reliable network, you need a high-performance structured cabling system that can support multiple applications, cope with increased bandwidth and minimize network downtime. The biggest challenges to achieving this include:

- **Keeping up with evolving technologies**
  There is a continuous drive for rapid innovation throughout the industry, which affects not only the business tools that drive productivity, but also the infrastructure that supports those tools.

- **Amortization of cabling systems**
  Cabling is expected to outlive most network components, but it might be the most difficult and cost-intensive component of a network to replace. Infrastructure amortization periods run for an average of 10 to 15 years. When looking at cabling costs, you should consider both initial and long-term costs. You also should understand the full life cycle and industry trends of other technologies and note that cabling represents only two to three percent of the initial network hardware investment. In many ways, the proper investment serves as a necessary insurance, providing protection for the innovations of the future.

- **Supporting multiple applications**
  Today's enterprise applications are increasingly a large collective of distributed software components that enable complex business services. With so many components, often monitored in different silos, it can be difficult to manage a business service or application as a whole.

- **Reducing network downtime**
  On average, each minute of downtime costs a business $7,900.[2] There's little to no margin for error when it comes to network performance, so it's crucial to prevent costly, unplanned service outages or performance degradation. Identifying critical and non-critical assets is foundational, but organizations can make strategic decisions in the ranking of equipment to determine what takes priority.

- **Coping with increasing bandwidth**
  The explosion of high-definition, multi-screen and BYOD environments have triggered an equally proportionate intensity on potential strain to the network. With more users on more devices, you need to account not only for current bandwidth usage, but also for future bandwidth needs.

Improving Network Performance With Versatile Physical Layer Connectivity

In order to achieve a high-performance, future-ready structured cabling system, you need to consider the right combination of design, performance, distance and density requirements. Versatile physical layer connectivity guides the creation of an open system platform, where the right media selection and cabling topology will increase productivity. Best practices to versatile physical layer connectivity include:

- **Designing for network flexibility** - Apply open architecture designs to accommodate your performance requirements for a highly scalable network. The flexibility of the foundational layer creates ripple effects throughout the network.
- **Selecting the appropriate universal cabling topology** - Determine the right choice for an open architecture environment by adopting commercial building wiring and building automation standards best practices.
- **Making the right media selection** - Choose the appropriate cabling media from twisted-pair and optical fiber to address high-speed bandwidth requirements.
- **Determining the migration path to support wireless mobility** - Determine your migration path for Wi-Fi and in-building cellular connectivity to support a multi-screen environment.
- **Supporting multiple applications through scalable designs** - Deploy scalable designs that can support multiple and varied applications over a high-performance, IP-based structured cabling system.

For more information, download our Smart Building Infrastructure Best Practices.*

*Best practices for network performance begin on page 43.

GLOBAL TECHNOLOGY BRIEFING

SMART BUILDING INFRASTRUCTURE BEST PRACTICES

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RISK MANAGEMENT

NETWORK PERFORMANCE

WORKFORCE PRODUCTIVITY

SPACE UTILIZATION

BIoT ENABLEMENT

1. Memoori, Big Data for Smart Buildings: Market Prospects 2015 to 2020. 2015.
2. Emerson Network Power, Causes of Downtime. 2013.