# Dark Fiber and the Future of Enterprise Evolution

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Next-generation technologies and the explosive growth in demand for always-on, near-immediate access to data and applications have put enterprises at the center of the pursuit of quick digital transformation. As a result, businesses in this technologically-driven world have been building their toolboxes with strategies that help keep them moving at the pace of digital change. These include disruptive tactics such as hybrid cloud implementation or intelligent processes that aim to streamline, optimize and amplify success.
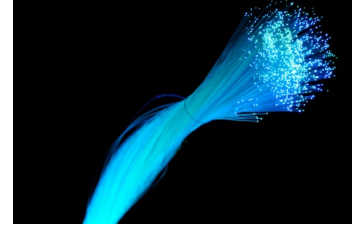
These tools have fundamentally changed the way the enterprise operates and delivers value, products and services, but digital transformation and optimization is not a destination. It's an ongoing journey.

The latest and greatest means of achieving a competitive edge now lies in network transformation. In fact, now that business has become decentralized, distributing more toward the edge with a less on-premises approach, it's becoming clear that in many cases, digital transformation success must be preceded by a successful network transformation.

Transforming the Enterprise Network

Businesses are beginning to recognize the intrinsic value that stands to be gained and lost in the network. Applications have developed and become more sophisticated, a trajectory that is being driven both by the rise and continued dominance of the smartphone and by changing end user expectations. Anyone can access anything nearly anywhere, and they can do so nearly instantaneously. The overarching reliance on technology has made increased capabilities on the network side a more immediate issue. Across the world, distance learning, remote work and BYOD (Bring Your Own Device) trends have put amplified digital dependence at the heart of work and education.

Expanded computing power plays a large role in meeting these heightened demands, allowing applications to leverage more processing power to work more efficiently and capably. However, with the ability to scale compute power, it has become necessary to have a network that can meet and reflect that same agility and scalability to keep the enterprise wholly synergistic.

At its core, this renewed focus on the network stems from a few key enterprise goals. Businesses want to work more efficiently with more capable network infrastructure. To do this, they are looking to build or incorporate more private, Layer 1 networks, utilizing strategies that deliver augmented control over the framework as well as vital scalability.

In the past, Wide Area Network (WAN) strategies like Ethernet and MPLS were chosen to meet the needs of the growing digital enterprise. However, as businesses find themselves in a constant state of growth and change to meet exploding data and latency demand, the issue lies in the critical need for bandwidth scalability and ease of use. Not only are businesses looking to increase their capabilities with greater bandwidth access and scale, they're also looking to leverage converged, simplified strategies that operate over a single network. Beyond this, they want private and direct interconnections to the cloud that empower their digital transformation further, as well

as better security, lower costs and more control.

In short, businesses are requiring a lot from their networks. And in today's rapidly changing world, it's not hard to see why. To meet these many demands, SD-WAN is one solution that has been gaining traction for its ability to deliver greater bandwidth at lower costs, centralized management, enhanced visibility and more. As a mainstay of network transformation, the increasing interest in this network strategy underscores the expectation that the SD-WAN market will grow to $4.1 billion by 2023. However, SD-WAN may not provide the security and privacy that network transformation projects are looking for.

Yet there is one solution that can seamlessly and quickly unlock all the benefits sought after by the enterprise in today's digital climate.

The Core of Tomorrow's Network

With digital transformation driving the need for a different type of network and network access, enterprises are looking for a key to unlock the next generation of highly capable and future-proofed networks. Now, as businesses delve further into their search for the solution, more and more are finding the source of their network empowerment: dark fiber.

In the scope of network transformation, dark fiber has, until recently, served as more of a supplement to the network rejuvenation process. However, it's becoming clear that it can better serve as a replacement for out-of-date legacy and lit networks.

As a solution to digital transformation demands, dark fiber checks all the boxes. When it comes to bandwidth—arguably the biggest benefit of dark fiber—virtually unlimited scalability means that business and digital evolution will never be impeded. With dark fiber, the capacity limitation is only defined by the transmission equipment that can be placed on it. Furthermore, enterprises won't have to be reliant on a service provider to turn capacity up or down because of dark fiber's unparalleled level of control.

The complete network control that dark fiber delivers allows for bespoke network construction and strategy that is tailored to the needs of each unique enterprise. This means lightning-fast adjustments in bandwidth, allowing capacity to be scaled up during peak operation periods without costly upgrades through service providers, and down during slower, less demanding timeframes. This control over network topology and function also allows enterprises to optimize their budgets and leverage predictable costs by avoiding service providers' data-usage-based payment plans. Dark fiber's fixed payment structure and unlimited growth capacity make much more financial sense for businesses with larger and still-growing bandwidth demands.

In terms of security and privacy, a private, dark fiber network is unparalleled. Unlike SD-WAN, dark fiber does not come in contact with the public Internet and remains physically private from any other network traffic. In a business sphere that spent an estimated $66 billion on cybersecurity in 2018, the ability to keep data entirely private is a substantial benefit. At the same time, if a business wants access to the cloud, it can leverage cloud access with dark fiber, too. Dark fiber ensures backups can happen quickly and that connections can run smoothly, all while maintaining the integrity of networks on the ground.

Optimizing Dark Fiber Strategies

While internal control is a benefit to large enterprises that have the skills and the means to manage and perform network operations themselves, not all businesses will want or be able to take on the responsibility of managing their own network in-house. An experienced dark fiber provider with flexible purchasing options and build-to-suit construction can help in setting up a dark fiber network for enterprises that may not be ready to take on the full capital expense and network management.

An experienced dark fiber partner ensures that fiber networks are constructed properly, in terms of underground versus aerial placement and diversity from all other

networks. It will also empower enterprise network evolution by allowing for managed dark fiber solutions. With a managed dark fiber network, enterprises can get all the flexibility and capabilities of a dark fiber network with the assurances and support of a managed service. Additionally, full control over the network with no hardware ownership means the managed dark fiber network option is the lowest risk in private networks available today.

Staying Ahead of the Curve

As next-generation 5G networks—and the countless exciting applications and use cases that follow—quickly become reality, data, latency and performance demands necessitate dark fiber strategies. Dark fiber enables powerful and quick scalability with the privacy and network control that is required to keep pace with the quickening speed of the digital world. Dark fiber holds the secret to delivering enhanced security, control, cloud access and capacity now. Once implemented, it can serve as a pivotal asset in the future as networks continue to transform to meet the needs of tomorrow's enterprise.