



## Fiber Optics Crucial to Future Datacom Transmission

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### ABSTRACT

Optical fibers are now being used throughout the global communications network. And as the ensuing demand for greater data capacity grows, they are being installed at ever increasing rates.

Fiber optics technology plays a critical role within the telecommunications sector, thanks to the wide-scale and growing adoption of the technology in communication and data transmission services. Optical fibers are used in high-speed data transfer services, in both short- and long-range communications. Combined with the added surge in cloud-based applications, audio-video services, and video-on-demand technology, the market shows no signs of slowing.

Today, the insatiable appetite for data means that demand for optical fibers is booming. Installation has never before been so prolific. This is true within both established markets, such as the U.S., in markets such as China, and as what is happening now in Egypt where there is massive growth.

In addition to long-distance deployment, over the last few years fiber has continued to penetrate deeper into the network, with fiber end points edging ever closer to homes, businesses, and cell towers. Indeed, in some countries, fiber is now being deployed directly to the home, boosting premium broadband access speeds to the Gb/s level.

As the power of the internet grows — and with it our internet usage — there are huge pressures on existing bandwidth. The bandwidth demands on our internet-enabling communication networks have surged to a point where the high bandwidth and data communication speed capabilities of optical fiber are needed everywhere, Legacy copper and microwave communication systems are constantly being upgraded to fiber.

A particular feature of recent change has been the deployment of fiber for backhaul, and more recently fronthaul, in mobile communications networks. In a landscape where microwave systems were once the traditional workhorse, the new trend in fiber is expected to accelerate as mobile technology moves toward high-speed 5G services. In the coming years, 5G networks will herald further large-scale deployment of fiber. In these networks, fiber will be used to collect signals from arrays of remote antennas and deliver them to compute nodes for signal processing and recovery — referred to as the mobile fronthaul. The resulting processed signals are then sent onward to other users through the core network, which is referred to as the mobile backhaul.



In this presentation, Fiber Misr aims to present the role of Optical Fiber development and its impact on the digital transformation in Egypt and its contribution to the transformation to future technologies. The presentation will include some of the successful experiences of Fiber Misr through the execution of some projects that contribute effectively in this direction.