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United States Optical Network Market Assessment, By Component [Optical Fiber, Transceivers, Amplifiers, Multiplexers, Optical Switches, Others], By Technology Type [Dense wavelength-division multiplexing, SONET/SDH, and Others], By Application [Optical Data Center Interconnects, Packet Optical Transport Systems, Security & Surveillance, Environmental Monitoring, Others], By Industry Vertical [Healthcare, Automotive & Transportation, BFSI, IT & Telecommunications, Energy & Utilities, Oil & Gas, Others], By Region, Opportunities and Forecast, 2016-2030F

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Abstracts

The United States optical network market has witnessed significant growth and is projected to expand substantially. The market is anticipated to increase from its current value of USD 4.2 billion in 2022 to reach USD 6.8 billion by 2030, exhibiting a CAGR of 6.3%.

In the United States, optical networks offer high bandwidth, low latency, and security, making them ideal for various applications, including high-speed internet and video streaming. The growth of the United States optical network market is driven by the increasing demand for high-speed internet, the growth of cloud computing, and the proliferation of video streaming services. Other factors driving the development of the market include the increasing adoption of smart city technologies and the need for more

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reliable and secure networks.

The growth of cloud computing is significantly impacting the United States optical network market. The surge in cloud-based services and data centers require robust optical networks for seamless data transmission. This trend, in turn, fuels network infrastructure development, encouraging investments and innovations in optical technology to support the expanding cloud ecosystem.

As per Flexera, in 2022, Azure overtook AWS in cloud adoption rates, but as of 2023 AWS has regained its lead. Currently, 47% of significant workloads in the United States utilize AWS cloud services, while 41% are running on Azure.

Significant Investments Towards Optical Cable Production

The United States optical network market has witnessed a significant increase in investments in optical cable production. The surge in funding by American organizations for this initiative indicates a growing interest in developing and expanding optical network infrastructure across the country, which is expected to enhance communication capabilities and support the increasing demand for high-speed internet and data transmission services.

For example, in April 2023, CommScope announced a substantial investment of USD 47 million to enhance fiber optic cable production capacity at its North Carolina facilities. The investment will primarily focus on ramping up production of the company's innovative HeliARC line of small, lightweight cables, specially tailored for rural deployments. These cables enable faster installation and reduced deployment costs.

A Continuous Rise in Upgraded Technologies

The United States optical network market requires the introducing of innovative and sophisticated technologies to meet the growing demands for high-speed and reliable communication services. The dawn of new and advanced technologies is crucial to enhancing network performance, increasing bandwidth capacity, and supporting the rising need for data-intensive applications, ensuring a seamless digital experience for users.

For example, in April 2023, Endeavor Business Media LLC (Lightwave) revealed that numerous operators in the United States are adopting 400G coherent optics as a critical element in their network modernization plans. The advantage of these pluggable

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devices lies in their ability to support 400G architectures and advancements, all while reducing costs compared to traditional optical networks. Moreover, this convergence of IP and optical networks, integrating optical transponders in routers and switches, marked the beginning of a transformative era in transport technology.

Emergence of Optical Switches to Drive the Market

The emergence of optical switches is driving the growth of the United States optical network market. These advanced switches enable efficient routing and management of optical signals, enhancing network performance and flexibility. They facilitate faster data transmission and reduced latency, meeting the increasing demands of data-intensive applications, 5G, and cloud services. Technology fosters innovation to attract investments and propel the market forward, improving network reliability and scalability for various industries.

For example, in March 2023, high-speed optical switching enabled the development of incredibly fast, light-powered electronics and computers in the United States. Researchers at the University of Arizona announced the upcoming development of these optical switches through light-based optical computing. It represents a significant advancement compared to the currently prevalent semiconductor-based transistors that power most of the world's electronic devices and computers.

Government Regulations

Government regulations are essential for the United States optical network market to ensure fair competition, data security, and network reliability. Regulations can address issues like net neutrality, privacy, and infrastructure standards. They promote innovation, investment, and network expansion while upholding consumer interests and national communication infrastructure.

For example, in June 2023, The Biden-Harris administration unveiled a USD 40 billion initiative to provide affordable, dependable, high-speed internet access to all Americans. Beyond ensuring widespread connectivity. The funding will stimulate manufacturing employment and attract private sector investments, emphasizing the use of American-made materials. Recently, Corning, a fiber optic cable manufacturer, pledged USD 500 million to expand their domestic production capacity, to generate numerous well-paying jobs in North Carolina as part of these efforts.

Impact of COVID-19

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COVID-19 has significantly impacted the United States optical network market. Pre-COVID, the market was experiencing growth due to increasing demand for high-speed internet, video streaming, cloud services, and IoT applications. However, the outbreak of COVID-19 and subsequent lockdowns caused a surge in remote work, online education, telehealth, and virtual entertainment, putting significant strain on existing network infrastructure. It prompted rapid upgrades and expansion of optical networks to handle the surge in data traffic.

In the post-COVID (current) situation, the market continues to grow as the pandemic-induced changes persist, with increased demand for high-speed data transmission, low-latency connections, and augmented reality (AR), virtual reality (VR), and IoT applications. Investments in research and development have also intensified to enhance network efficiency, security, and scalability, driving the market's transformation and advancement in the digital age.

Key Players Landscape and Outlook

The United States optical network market is witnessing remarkable growth as prominent American companies prioritize collaborations to enhance their optical networking services. These companies are investing substantially to bolster their manufacturing capabilities and develop advanced optical networks. Additionally, they actively engage in notable mergers, acquisitions, and joint ventures to achieve their objectives in the ever-evolving optical network industry.

In February 2023, Cisco and NEC Corporation announced their intention to strengthen their collaboration by focusing on system integration solutions and exploring opportunities in 5G xHaul and private 5G services. This enhanced partnership aimed to aid customers in transforming their network architecture and facilitating connectivity for a broader range of devices and users. Global Systems Integrator Agreement (GSIA) was expanded to include scalable 5G xHaul transport networks with improved end-to-end automation and routed optical networking capabilities, empowering operators to monetize their 5G services effectively.

In August 2022, Corning Incorporated announced its plan to expand manufacturing capacity for optical cable in response to the increasing demand for fiber services as AT&T, the nation’s largest fiber internet provider, expanded its network. The company established a new cable manufacturing facility in Gilbert, Arizona, creating around 250 jobs and reinforcing its strategic investments in optical fiber, cable, and connectivity

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solutions by investing over USD 500 million from 2020.

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