

The Strategic Link Between Submarine Cables and Taiwan's Digital Economy

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Taiwan currently hosts 14 international submarine communication cables, making it a vital network hub in the Asia-Pacific region. These cables facilitate international data transmission and underpin key industries such as semiconductors, cloud computing, finance, e-commerce, and remote work. Compared to satellite transmission, submarine cables offer significantly higher speed, greater capacity, and lower latency—making them the indispensable backbone of the modern digital economy.

As global demand for high-speed, low-latency data transmission continues to grow, the submarine cable market is expanding rapidly. Countries worldwide are competing to strengthen their cable infrastructure, particularly in the Asia-Pacific region. In 2024, the global submarine cable engineering market is valued at approximately USD 29.15 billion and is projected to reach USD 56.96 billion by 2035, with a compound annual growth rate exceeding 6.3%. Drivers of this growth vary by country: technological investments in the United States, strategic geography in France and the United Kingdom, strong government support in China, and digital economic expansion and internet penetration in India, among others.

Despite the high technical barriers, capital intensity, and challenges posed by geopolitical tensions and regulatory complexity, submarine cable development remains essential for enhancing national competitiveness. Taiwan's importance in this arena is growing, especially as global cloud service providers such as Google, Microsoft, and AWS establish data centers on the island. These investments place higher demands on network performance and redundancy, further highlighting the critical role of submarine cable stability.

Any disruption to submarine cables can have serious economic repercussions. For instance, the recent cable outage affecting Taiwan's offshore Matsu Islands

significantly impacted local livelihoods, tourism, and economic activities. Historical incidents—such as earthquakes causing widespread cable damage—have even disrupted international financial transactions and trade operations. As Taiwan’s digital economy continues to expand—targeted to reach 29.9% of GDP by 2025—the resilience and security of its submarine cable infrastructure are directly tied to national economic security and competitiveness.

Looking ahead, the widespread adoption of AI, 5G, the Internet of Things (IoT), and cloud services will drive exponential growth in data traffic, further escalating the demand for submarine cables. To respond to evolving geopolitical and technological dynamics, Taiwan must strengthen its submarine cable strategy, redundancy, and autonomous maintenance capacity. This includes actively participating in new cable investments, replacing outdated systems, enhancing backup systems for offshore islands, and developing complementary low-earth orbit (LEO) satellite options.

Additionally, Taiwan should advance domestic maintenance capabilities by cultivating a professional fleet of cable-laying vessels and engineering teams to reduce repair times and minimize external risks. On the regulatory front, a dedicated legal framework is needed to integrate existing cable protection measures, establish clear penalties for violations, and implement unified governance mechanisms. It is equally important to bolster international cooperation, facilitate regional information sharing, and conduct joint exercises to address risks arising from malicious attacks or natural disasters.

In conclusion, submarine cables are not only fundamental infrastructure for Taiwan’s digital economy but also a cornerstone for sustaining future economic growth. Their resilience and security have become key indicators of national economic robustness in the digital age. A comprehensive strategy—encompassing infrastructure investment, technological capability, legal reform, and international engagement—is essential to ensure that Taiwan maintains its competitive edge and safeguards its economic security in the global digital landscape.