

Global business and subsea cables

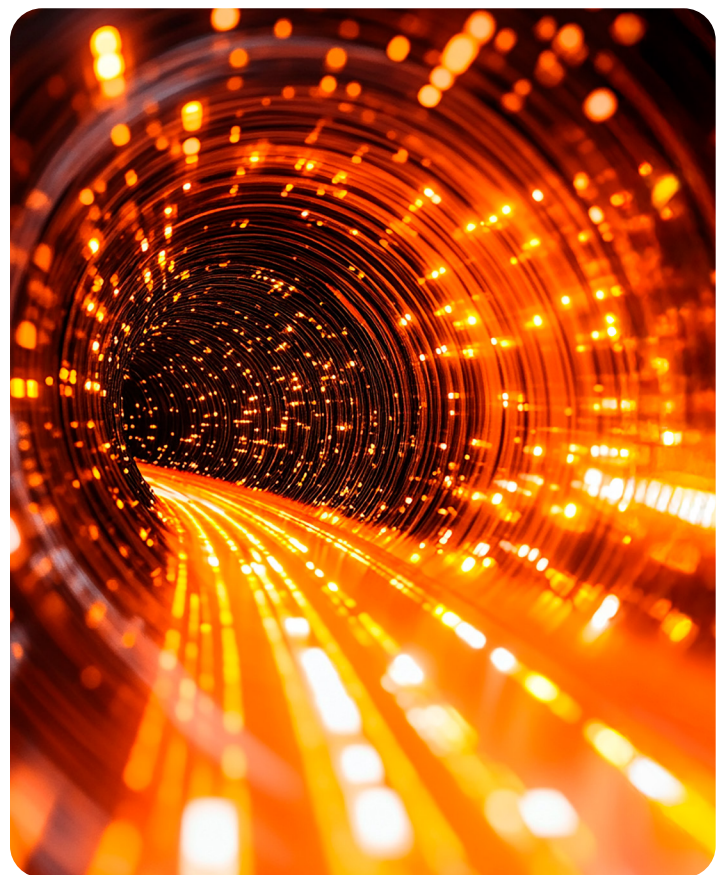
The real infrastructure behind digital growth

The internet rests on an infrastructure we never see, yet one that is decisive for the global economy. Beneath the sea, more than 95% of intercontinental data traffic travels across over 500 active subsea cable systems, totalling more than 1.4 million kilometres of fibre optics.

Thanks to this silent network, every everyday digital interaction — a video call, a bank transaction or an online search — involves transmitting data that may travel thousands of kilometres before it completes. Its scale is such that it has become the backbone of e-commerce, international finance, streaming and cloud



The digital economy is not abstract. It is physical, measurable and dependent on critical subsea infrastructure.



The physical limits of the internet

Although we tend to think of the internet as an intangible network, its operation in fact depends on very concrete physical laws. Information travels through fibre optics at a speed close to 200,000 kilometres per second, equivalent to two thirds of the speed of light in a vacuum.

That means that even if the equipment were perfect and there were no additional processing delays, every kilometre travelled adds an unavoidable minimum time. A 1,000-kilometre route, for example, introduces around 5 milliseconds of latency in one direction. If the distance rises to 10,000 kilometres, the physical limit imposed by the speed of light in fibre would amount to roughly 50 milliseconds.



The New York–London connection, at approximately 5,500 kilometres, has a theoretical minimum time of close to 28 milliseconds. Since all digital communication requires a round trip, the return journey always doubles that latency.

The capacity of modern systems is equally impressive. A single cable can exceed 100 to 200 terabits per second — enough to carry financial traffic, cloud services, e-commerce and industrial data simultaneously. The figures look small, but in certain sectors those milliseconds determine profitability, efficiency or competitiveness. In the digital era, distance has not disappeared. It has become an economic variable.

The impact of the internet on global industries

Digital infrastructure does not affect every sector in the same way. Finance, retail, healthcare and logistics all find in the internet the base that sustains their operations, although each measures it with different indicators.

1. Finance

It is no secret that every millisecond of connectivity translates into money. The foreign exchange (FX) market moves more than US\$7 trillion a day, while payment systems process tens of thousands of transactions per second and capital markets execute millions of orders every minute.

High-frequency trading (HFT) firms invest hundreds of millions to shave between 1 and 3 milliseconds off latency. Dedicated routes are even built to shorten distances, because a few microseconds can decide execution order and define who wins and who loses.

Unavailability carries an enormous cost of its own. An outage of less than an hour can generate losses in the millions, and clearing and settlement processes depend on uninterrupted connectivity.

In finance, latency is not a technical metric. It is capital.



2. Online retail

E-commerce already accounts for close to 20% of global retail sales, with an annual volume of around US\$6 trillion. That scale makes digital infrastructure a critical factor in the continuity of global retail.

When infrastructure operates at the limit

On Black Friday, the United States alone recorded more than US\$11.8 billion in online sales in a single day, with peaks of up to 12.5 million active carts per minute. China's Singles' Day has moved around 1.7 trillion yuan (some US\$240 billion) in transactions, making it the largest e-commerce event in the world.

These events concentrate millions of simultaneous requests and put the resilience of digital platforms to the test.



The sector's leading global players — Amazon, SHEIN, Temu and Alibaba — depend on the network performing with millimetric precision. A latency increase of just 100 to 300 milliseconds can reduce conversion rates, and an hour of unavailability during high-demand periods can translate into substantial losses.

In digital retail, availability equals revenue continuity.

3. Digital health

The adoption of digital systems in healthcare is practically universal across developed economies. In the United States, for example, more than 96% of hospitals use electronic health records (EHR). Care has also moved into the virtual environment, with millions of teleconsultations every week and operators such as Teladoc exceeding 18 million visits in a year, combining video, access to medical histories and real-time transmission of studies.

The challenge lies not only in the number of transactions, but in the volume of clinical data. An MRI scan can generate between 100 and 500 MB, high-complexity imaging studies exceed 1 GB, and a large hospital produces terabytes daily. In emergencies, results must be shared within minutes, and remote monitoring transmits critical information in real time.

In healthcare, the network carries diagnoses, clinical decisions and continuity of care.

4. Smart manufacturing

More and more factories rely on industrial IoT, with thousands of sensors per plant and millions of daily events recording temperature, vibration, pressure and quality in real time. This data feeds into ERP and MES systems that synchronise production, inventory and logistics on a global scale, connecting plants, suppliers and design centres. .

An average operational outage can last around 30 hours



This entails losses of up to US\$4.2 million per hour in critical events



The cumulative impact can reach figures close to US\$126 million per outage

Ransomware has become a recurring threat, with more than 850 confirmed attacks between 2018 and 2024, generating losses of around US\$1.9 million per day of disruption and an estimated total of US\$17 billion.

The Jaguar Land Rover case

In 2025, the British carmaker suffered a cyberattack that paralysed critical operations and generated estimated losses of more than £1.9 billion. This episode became an emblematic example of how a digital breach can escalate rapidly from an isolated incident into a systemic disruption with global consequences.



The physical layer that sustains digital growth

Today, continuous connectivity is an operational requirement for organisations, markets and governments. That is why the networks linking continents and data centres have consolidated as strategic infrastructure.



Physical infrastructure is the foundation of the digital economy's competitiveness, and that is why resilience has become a structural requirement. Factors such as route diversity, geographic redundancy and protection against disruption determine which organisations operate with stability and which are left exposed.

In subsea cables, every millisecond, every moment of availability and every layer of security decide the pulse of the global economy.