

*"We need to substitute for the book a device that will make it easy to transmit information without transporting material."*

J.C.R. Licklider

And he did it! He accomplished to change the world in **1962**.

Almost 4.57 billion **people** were active **internet** users as of July 2020, encompassing 59 percent of the global population.

We all use it. Some of us are addicted for games, social media. Some of us we use it for work.

But how the information travels?

First of all, let's define the internet: a global network of computers that enables them to send one another small packets of digital data. It is made up of millions of computers all over the world that are digitally connected to each other by **cable, fibre or wireless links**. You can use the internet to browse websites, communicate with people, download pictures and videos, listen to music or do lots of other amazing things.

This process is made between us, the users, using devices (computers, mobile phones, laptops, etc) and the server. We use these devices for different types of applications (browsers, mail) called **client** by sending requests to the server and the **server** sends us back responses. While the server is processing the request and sends us the results, the connection is frozen. Data sent across the Internet is called a *message*. Before a *message* is sent, it is first split in many fragments called *packets*. The packets are traveling to us on different routes, but routers are helping them to find the fastest possible route. Don't worry, our devices receive also the instructions how to put the packets back together so we can have the information requested and the expected result. This whole process of sending a request and receiving the packets usually takes **less than a second!** Amazing, right?

Where the information travels?

Computers use an IP address (**Internet Protocol address**) to identify each other. It's a bit like a postcode that is unique to each computer connected to the internet. IP is responsible for addressing, sending and receiving the data packets over the Internet.

I remember in the past, we used to have Yellow Pages, a phone numbers book. The DNS (**Domain Name Servers**) is compared with this kind of book because it maintains a directory of domain names and translates them to Internet Protocol (IP) addresses.

Who helps us to request information?

**HTTP** is a protocol which allows the fetching of resources, such as HTML documents. It is the foundation of any data exchange on the Web and it is a client-server protocol, which means requests are initiated by the recipient, usually the Web browser. A complete document is reconstructed from the different sub-documents fetched, for instance text, layout description, images, videos, scripts, and more.