



# A platform company

The irruption of the internet in Telefónica

Jesús Figueroa Granados

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For some years now, there has been a reflection on how a child would react to a telephone from the 2000s.

A heavy phone, connected through a cable to the wall, with a dial or a keypad to dial but without any screen to know if we are dialing correctly, with a headset, etc...

Clearly, the most feasible answer is that you would be surprised or surprised if someone told you that this was a phone. And, there is even more, how was it possible to "live" with a phone anchored to a home and that served the different members of the family unit and that each of the inhabitants did not have their own phone, and that it was only used to talk and not to watch videos or send messages, or use applications at home or on the street, in Spain or outside Spain.

And this reality, seen today with a certain anachronism from a distance, was nevertheless the result of the evolution of telecommunications and the investment effort of Telefónica to make it possible to reach the telephone service throughout the national territory.

It had gone from not having a telephone in homes (1 only and for the whole family) and hardly in companies and industries to being a generalized good; From having to request a conference to be able to talk to another city, to having an automatic service that allowed calls to be made anywhere in the world, at any time and without the intervention of an operator.

Well, now, let's try to explain the phenomenon of the arrival of Internet access, where also seen from a distance, our young man would not understand very well how it was possible to be part of a group of friends without having the natural services and facilities that can be enjoyed today thanks to having fiber optics.

This has also been a path with different stages that began in 1995 with the first Internet Access Service, the InfoVia Service, through the public switched telephone network (PSTN); It was improved in 1999 when the UNO IP network was launched to provide the InfoVia Plus Service, to arrive from 2001 with the extension of the ADSL Line.

Let's do a little bit of history and context.

## 1. Background and context

From the end of the nineteenth century, nations took steps to transform themselves from being mainly agricultural to becoming nations where industry occupied a preponderant role. And this process also occurred in Spain towards the middle of the 20th century, when workers in the secondary sector surpassed those employed in the agricultural sector.

Since the mid-1980s, Spanish society was also immersed in the transformation towards an information-based society, first in industry and in companies that had already taken a

step forward with the use of Telefónica's IBERPAC network for data transmission; and, subsequently, with the progressive entry of computer equipment in the different phases of the production chain, especially in the financial and service sector (Spain, in 1995, already had the largest network of ATMs in bank branches in Europe).

## 2. Those First Personal Computers

In the 80s and 90s, the use of computers began to spread throughout the world, and also in Spain, through PCs (Personal Computers); large desktop devices that were implemented in companies and years later began to reach homes through Microcomputers (Spectrum, Commodore, Amstrad, etc.) that provided the possibility of accessing video games, programming, etc.



Logically, "isolated" PCs or microcomputers fulfilled their purpose, but as is easy to assume, everyone intuited that connected through a network would allow access to a greater world of possibilities.

## 3. And how do we connect them? And through which network? The Infovía service

The basic telephone network allowed the connection of telephones basically to transmit voice.

It is true that there was also equipment that accessed certain data or information over this telephone network (fax, telex, or videotex).

Large data users (companies, banks, etc.) had an independent data network (Iberpac or Ibermic) that allowed their computers to interconnect with each other, with their data processing centers or with other headquarters for the exchange of information.

The change originates when it is necessary to design some procedure to be able to provide connectivity to many users (early-adopters) from their homes, equipped with personal computers, who also want to access other computers to obtain information, buy, play or simply exchange emails with other users in Spain or outside Spain in an easy, comfortable and cheap way.

In every telecommunications service there are 3 basic elements to consider: the users' terminals, the access network from the customer's home to the telecommunications operator, and the transport network that collects all the traffic generated and distributes it to the end point.

The users' terminals were very diverse in their origin and had to be provided with a mechanism of "interlocution" with the telephone network.

And for this reason, Telefónica had to design:

- A Service that allowed each user to connect to the basic telephone network (RTB or PSTN) with their different personal computers, for this, at that time, it was necessary to use an external modem that allowed them to make their call via the "copper" network that had been defined to transmit voice, and therefore with little bandwidth or capacity, and reach the Internet access services node closest to your telephone exchange.
- A Service to facilitate the arrival of users to the Information Service Providers (ISPs) with whom they had to contract Internet access or access to additional services or facilities, and who were the ones who transported their customers to Telefónica's transport network and this took them to Internet traffic exchange points or exchange points
- A "Universal Service" for the whole of Spain, regardless of the Client's location, for easy access and at the lowest cost.
- The solution was the launch of the InfoVia Service

The InfoVía Service was the solution that allowed Telefónica to facilitate access to the Internet in a simple way, through the Internet Service Providers (ISPs) that connected to this service and provided users with the value-added services that they freely contracted.

And this service was a significant qualitative change.

Telefónica incorporated a first service of access to information (data) aimed at the general public. And this leap meant a certain revolution in many aspects: advertising, promotion, hiring, cost, etc.

And so,

- A campaign was designed to disseminate the Service that included the free delivery of a CD-Rom (even with floppy disks necessary for certain computers) with the necessary software to be able to start browsing the network adapted to the most common operating systems at that time in Spain: Windows 3.11, Windows 95, Ibertex, Mac OS/2 WARP.
- This dissemination campaign was innovative because through newspapers and magazines, through different events (Vuelta Ciclista a España, specialized fairs, etc.) and also through third computer channels, the InfoVia Service and the tool that allowed connection to the service were widely disseminated. In addition to having the communication actions of the different associated Service Providers.

- It was not necessary to previously contract the use of the Infovia Service, it was just another service (nor did it necessary to have contracted international or national calls as they were in principle).
- The cost of access to the Service was the same throughout Spain and was that of a metropolitan telephone call (in 1995, the cost was 139 pesetas/hour during the day, and 106 pesetas/hour at night; that is, 0.83 Euros and 0.63 Euros respectively).
- The Service included access to the InfoVía Service Center and from there choose your ISP, where there was a variety of offers. And the number of ISPs continued to grow from the outset, 10 ISPs on startup day in September 1995, 30 in December 1995 and more than 200 in December 1996.

The mechanism was simple, convenient, and allowed you to start enjoying the advantages of accessing different information services but also of carrying out operations and transactions, which helped to encourage the interest of new users and increase their browsing time.

## 4. Impact of the launch of the InfoVía Service

The InfoVía Service led to a transformation of Telefónica itself, both in terms of infrastructure and sales, and therefore with consequences for Spanish society by acting as a facilitator for the progressive entry into a new phase of economic development linked to the exploitation of information and new technologies.

And the Service clearly fulfilled its objectives and in my opinion this new service meant a substantial modification of at least three pre-existing paradigms:

### **4.1 The transmission of data, or the access and management of data, is no longer a service or regular use by companies**

- The widespread use by the general public meant that little by little, thanks to the proliferation of new uses, new service providers, the possibilities of becoming content generators, etc., leadership passed from companies to individuals.
- Telefónica made a significant contribution to Spain being (and still is) one of the most advanced countries in the adoption of new technologies in general and the Information Society in particular.
- The mobilization of all kinds of resources (human, intellectual, and of course economic, both in terms of investments and promotion and dissemination) was a catalyst for skyrocketing access to the Internet.
- It was, without a doubt, an even greater challenge than the one caused by the arrival of the telephone line to each home. Thus, while the arrival of telephone service in the home spanned a time span of more than 30 years. The mass popularization of internet access was much faster.
- Thus, according to data from the AIMC:



- Year 1996... 342,000 users
  - Year 1997... 931,000 users (3-fold increase in 1 year)
  - Year 1999... 2,429,000 users (multiplied by 8 in 3 years)
  - Year 2005... 12,733,000 users
- In short, 10 years after the launch of the InfoVía Service, there were nearly 13 million users in Spain. 34% of the population. And in 2015, 20 years later, nearly 29.5 million users were already using the Internet; In other words, more than 74% of the population.
  - There is no doubt that it was a decisive step towards achieving access to the Information Highways by Spanish society.
  - In many debates about the economic evolution of countries, it is said that the industrial revolution came late in Spain (in the mid-1960s or 1970s) compared to other Central European countries. We can affirm that Spain, on this occasion, did play a very avant-garde role when it came to entering the economic transformation derived from the adaptation to the challenges and opportunities posed by the Information Society.
  - In this way, there was a shift from leadership on the part of the business sector to leadership from society in general, generating a growing virtuous circle in which the demands for more information, greater speed of access, greater capacity to manage from home fed the needs of companies to serve their customers, of the Administration to facilitate e-Administration for citizens, and from the users themselves as self-generators of content. In short, the Information Society.

## 4.2 The revaluation of the copper pair

- The copper pair that seemed to serve only to make voice communications possible, proved that it could transmit voice, data and image through it. Yes, with certain limitations, but technology has been solving and arbitrating to prolong its useful life. Suddenly, it demonstrated its serviceability thanks in large part to the approaches that the engineers had introduced when they carried out the studies for the deployment and coverage of the service areas of the telephone exchanges.
- The access network from the telephone exchange to the Client's home was made of copper (except for certain business uses) and made it possible to meet the demands of voice communications or a certain volume of data, but not simultaneously and in a massive way.
- The quality of the loop was determined by the fact that it did not exceed 2.5-3.0 kms. distance to the local headquarters. And the reality is that the design of the access network in a high percentage met these requirements, which were very important to meet the first stage of Internet access services through the PSTN as well as the next stage with the progressive and constant introduction of xDSL technology to provide greater bandwidth and offer a higher quality service.

- Thus, for example, in 1999, Telefónica had made investments to cover 31% of the plant in service. Coverage reached 73% in 2000. Undoubtedly, the investment effort was remarkable, and allowed to give a second life to the copper pair.

#### **4.3 The breakdown of the "traditional" tariff scheme (pricing based on the distance between the partners)**

- The fee schedule was based on the location, the distance between the two callers and the duration of the call. And so rates were established for local or metropolitan, provincial, national or international calls.

Access to the Internet initially breaks the parameter of the distance between interlocutors. The user may be surfing the web by accessing sites located in their city, in Spain or anywhere in the world. And also, randomly and without the client being able to control the place where these information centers or sites are located.

- It is resolved to rate it as a local call.

The explanation is that Telefónica only charged the Client for the section of the network that runs from their home to the InfoVia Service Center, which by pure logic would be located as close as possible to the users in order to group their traffic and route it through the transmission network. And it will be your Service provider that will charge a fee based on the quality of the Services provided, external to Telefónica, starting with the provision of access to the Internet network itself.

- The next transformation of the tariff scheme brought about by the increasing use of Internet access was the reconsideration of the factor of the duration of the conversation (or rather, navigation).

Users, unlike phone conversations between two interlocutors, spent a lot of time browsing. It could be said that the track of time was lost, and although they were low-cost calls because they were local rates, in the end the impact on the bill was significant.

For this reason, savings plans for intensive users were put in place for the first time at Telefónica, which arrived in 1999 with the Surfing Vouchers (BonoNet 10 or 50 hours) and in 2000 the flat rates for Internet access.

It can be said without any exaggeration that the InfoVía Service was a before and after for Telefónica.

From its launch, the changes accelerated. Telefónica entered into a dynamic of proliferation of novelties both for "traditional" Voice Services and especially for new Services around the IP world.

These changes are also part of the process of liberalization of the telecommunications market that began in September 1998.



## 5. And after the InfoVía service, what?

### 5.1 In September 1998, the InfoVía Plus Service was born, and the InfoVía Service disappeared.

The InfoVia Plus Service was the logical evolution of the precursor and simultaneously solved 2 requirements:

- Higher speed for the user (up to 56 Kbps), thanks to the deployment of a new UNO IP network with 140 nodes.
- Direct access to IP networks of other providers as a result of the liberalization of the telecommunications market (Retevisión, BT,)

This is how, 3 years after the launch of InfoVía, its evolution was set in motion, which basically responded to the same scheme: an easy and simple service for the user and now with greater speed.

However, in addition, new pricing schemes were put in place in view of the increased use of the Internet to limit its economic impact, which was one of the greatest demands of users.

And that's how the traffic vouchers (10 hours and 50 hours) were born, and later the 24-hour flat rates or reduced hours.

### 5.2 In 1999, the ADSL service arrived

The evolution in the number of users and the increasing demand for greater capacity access to browse seamlessly accessing higher quality content with interactivity (video, games, e-commerce transactions) accelerated the introduction of an even higher bandwidth internet access service. And additionally, get a fixed and flat price regardless of the use of Internet access.

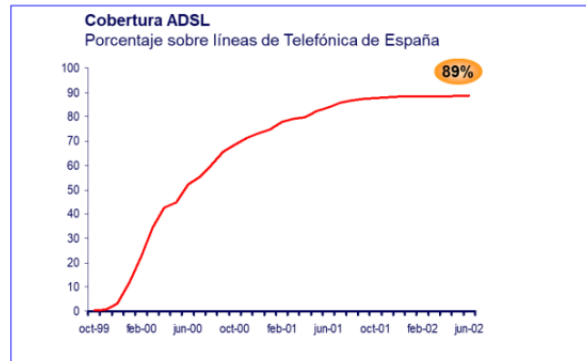
This is how the ADSL Line was born.

A service that, like that, was once again supported by Telefónica's strengths:

- **Copper access network** of significant quality because the distances were not extreme.
- **Commercial and communication power** to contribute to the development of a powerful ecosystem around Internet access. With new and robust service proposals for residential, business and corporate users

- **Highly competitive price and with the highest quality** on the market.

And, finally, with powerful investments that made it possible to achieve a rapid level of coverage of the Service, as can be seen in the following graph.

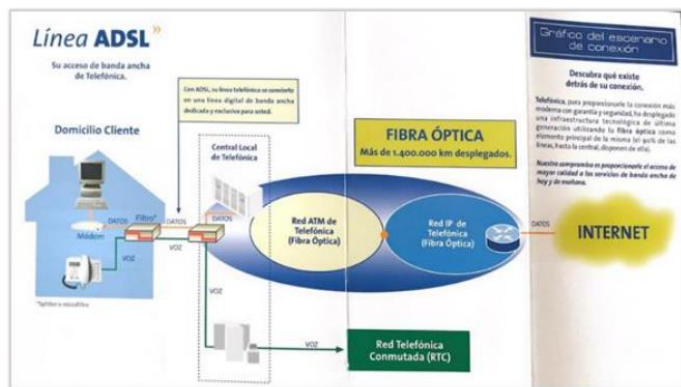


Thus, the year 2000 closed with a level of 70%, and in 2001 it reached 82%.

## 6. ADSL line

A service based on the copper access loop allowed:

- A higher speed due to having more bandwidth, the customer being able to choose between 3 upload and download speeds:
  - **Basic ADSL: 256 kbps/128 kbps**
  - **ADSL Class: 512 Kbps/128 kbps**
  - **ADSL Premium: 2Mbps/300 Kbps**
- Additionally, create an indoor network in the home so that different users can use that bandwidth at the same time.
- Simultaneously maintain another voice communication
- Access for a fixed total price depending on the quality chosen.
- And access a wide range of services included in that price such as email, personal web pages, portal access, games, etc.



A service that meant a qualitative leap compared to 5 years earlier when Telefónica launched the first Internet access service.

Prior to the launch of Telefónica's own ADSL Line Service, there had been a proliferation of different providers or ISPs that, on the basis of Telefónica's wholesale service, set up their own retail service.

The truth is that the entry of Telefónica's own Retail Service had a high impact on the market due to its commercial power and the technical quality of Telefónica's usual provision and maintenance.

The launch allowed the ADSL Line to be positioned as an advanced technological service for that time and the careful design of the advertising campaign managed to convey that message.



A message that Telefónica would develop over the following months, focusing on two lines of work:

- On the one hand, the possibilities that this ADSL Line provided for the home, contributing to education, information, the performance of tasks with the Administration and also to leisure and entertainment.
- Likewise, for businesses and companies, developing a wide range of services to facilitate the improvement of their competitiveness and efficiency in their activities. And so in 2002 the family of ADSL Solutions was born: Web, Commerce, Intranet, Video Surveillance, etc., which contributed to the development of information technologies in the day-to-day life of companies.

On the other hand, with the dual objective of meeting user demand more quickly and even with lower costs, new marketing formulas were enabled that over time were already perpetuated in the market, such as the **SELF-INSTALLING KIT** (year 2001).

All the equipment associated with the ADSL Line evolved rapidly and so more powerful equipment was progressively introduced, not only with a greater number of ports, USB modem, video games, etc.

And later, Telefónica took a major leap forward by introducing **WIFI technology in all its equipment**, once again confirming its technological leadership.

Technology that has continued to evolve over the years to the point that today we cannot conceive of a home, an office or a business center that is not equipped with this technology open to all users **digital TV through ADSL with the Imagenio Service.**





[www.telefonica.com](http://www.telefonica.com)