Main Technology Developments
Vodafone Portugal

We have always been in the front line when it comes to introducing new Technologies and developing mobile data services. We pioneered the development of EFR, Dual Band, WAP, 2.5G/GPRS, HSCSD, MMS, 3G/UMTS and 3.5G/HSPA networks in Portugal, having also been the first Portuguese operator to offer 3G services in the market and to perform the first live demonstration of the 4G/LTE technology.

GSM

We started operating a national GSM (Global System for Mobile Communications) cellular network in October 1992. Currently, we serve around 100% of the population of mainland Portugal and the Autonomous Regions of Madeira and the Azores on the 900 MHz and 1800 MHz frequencies.

Our GSM roaming service is available to Customers on the networks of 557 international operators in 210 countries and territories.

EFR

In May 1998 we were the first mobile operator to use EFR (Enhanced Full Rate) technology in Portugal. This enabled us to achieve a voice quality in mobile calls comparable with that of the fixed network by employing an encoding algorithm that makes it possible to process the same quantity of transmitted information more efficiently, improving quality and reducing noise.

Dual Band

Also in May 1998, we were the first operator to provide our cellular service on GSM 1800 and to market phones that operate in the two frequency bands of 900 MHz and 1800 MHz.

WAP

In November 1999 at ExpoTelecom, we introduced Internet access from mobile phones for the first time in Portugal, using WAP (Wireless Application Protocol) technology. In May 2000, we launched a second version of the mobile Internet access service and related features. Since its commercial launch, we have introduced pioneering services in Portugal such as banking transactions, stock market information, personalisation of information services and access to Vodafone billing.

GPRS

Following a contract signed with Ericsson in December 1999, we became one of the first European operators to receive handsets with the new GPRS (General Packet Radio Service) data transmission technology. In July 2000, we demonstrated several applications using GPRS, such as: browsing the Internet, accessing WAP services and sending and receiving e-mails.

In April 2001, we began the commercial roll-out of the GPRS technology with the Motorola Timeport 260 phone, the first GPRS handset launched on the market in Portugal. In December 2001, we were the first operator in Portugal to offer GPRS roaming services on the Vodafone networks in Spain and the United Kingdom.

Currently, our customers are able to use the GPRS service on the networks of 362 operators in 149 countries.

HSCSD

In line with our objective of being the leader in mobile data communications, in May 2001 we launched HSCSD (High Speed Circuit Switched Data) exclusively in Portugal. This technology makes it possible to achieve a significant increase in data transmission speeds, with Internet access and mobile data services benefiting most from the possibility of transmission speeds of up to 43.2 kbps, almost 5 times faster than the present GSM technology.

MMS

In May 2002, we launched, for the first time in Portugal, the revolutionary MMS service (Multimedia Messaging Service). Operating on the GSM-GPRS network, MMS makes it possible to send messages containing colour photos, long text and audio files between mobile phones.

Comparing to SMS (Short Message Service) that limits the messages length to 160 characters, MMS largely increases that capability up to 30,000 characters and also allows the Customer to send and receive multimedia messages to and from e-mail boxes. This new messaging service is a huge development of the SMS system also by making it possible to integrate text, images, colour and sound, while retaining all its predecessor's simplicity of writing, sending and receiving messages.

In September 2002, we were the first Portuguese operator to provide the MMS service in roaming, giving our customers the opportunity of sending photos they have just taken abroad to other mobile phones and e-mail addresses.

With the launch of Vodafone live! in November 2002, our customers were also able to take, send, save and receive photo messages and to add sound and text to them instantly, using an easy-to-use interface.

In January 2003, when we signed an MMS interconnection agreement with the other Portuguese mobile operators, our customers also became able to send multimedia messages (MMS) to any mobile phone and mobile network in Portugal.

In September 2003, we launched a groundbreaking service – unique in Portugal – allowing users to send postcards by mail to anywhere in the world from a mobile phone, simply by sending a photo by MMS to a predetermined number, stating the addressee's name and address.

In December 2003, we launched the 'Goals Live - Photo' service enabling customers to receive an MMS after each goal scored by their chosen team, with a photo of the goal and a brief description of the play leading up to it.

Wi-Fi

In October 2003, Vodafone launched the Wi-Fi service offering wireless broadband Internet access at various locations in Portugal using Wi-Fi 802.11b/g technology.

The Vodafone Wi-Fi service provides wireless Internet access at high speeds (up to 54 Mbps) and has innovative authentication and payment characteristics using the SMS infrastructure, which lends it great simplicity and security of access. The Vodafone Wi-Fi service is therefore an excellent Internet access alternative at locations provided with this type of access – known as hotspots.

Vodafone's network of hotspots in Portugal is being constantly extended. It currently comprises over 170 hotspots around the country located in leading conference centres, hotels, airports, stadiums and other public places.

UMTS

In December 2000, Vodafone was awarded a licence to operate the UMTS (Universal Mobile Telecommunications System) system in Portugal, the so-called third generation mobile telephony. Our first place reflected recognition by the Bid Analysis Committee of the high quality and ambition of the Company's proposal. We wish to play the same role with UMTS that we played with GSM: to be the main engine of the mobile market in Portugal, leading the move to mobile-Internet convergence.

In November 2002, we had the opportunity during the annual communications congress to demonstrate to the market in real time the future services to be supported on the UMTS network, including video telephony, video streaming and high speed Internet browsing.

Reinforcing our position at the forefront of the development of non-voice services, in December 2003 we began the roll-out of mobile 3G/UMTS in Lisbon and Oporto. 3G has improved the quality of many existing information and entertainment services, as well as making possible new services such as videotelephony and high speed mobile Internet access.

After being the first operator to offer 3G/UMTS services in Portugal with the Vodafone Mobile Connect Card in May 2004, we started a new phase in the development of 3G Mobile with the launch of Vodafone live! 3G.

In April 2004, our customers became able to access 3G/UMTS data services in roaming, making Vodafone Portugal one of the first operators in the world to offer its customers roaming access to 3G/UMTS data services.

As the result of 3G roaming agreements signed by Vodafone Portugal, it is already possible to use 3G services on the networks of around 212 operators in over 107 countries.

In November 2004, we launched a new and varied range of 3G phones, along with an enlarged range of Vodafone live! 3G services and content, initiating a phase of massive expansion of 3G/UMTS in Portugal and significantly extending choice and availability to customers in terms of prices, brands and functions.

In connection with this offer, we have launched an extensive range of handsets with high quality cameras, image and sound at affordable prices, with a view to fully exploiting the possibilities of Mobile 3G services, for instance by significantly improving the user experience of videocalls, multimedia messages and the content available.

HSDPA

In November 2005, we made the first data call using the new 3G Broadband technology, also known as 3.5G or HSDPA (High Speed Downlink Packet Access), as part of the programme of tests of this important technology.

In March 2006, we began the roll-out in Portugal of this technology which allowed a considerable increase in transmission speeds to 1.8 Mbps at that time, over 4 times faster than the speed available with 3G (384Kbps).

In July 2006, the commercial launch of the Samsung ZV50 made Vodafone the first Portuguese operator to offer 3G Broadband (3.5G/HSDPA) phones.

In September 2006, with the pioneering launch of the 3G Broadband 3.6 Mbps network and the Vodafone Internet Connect Box, we became the first operator in Portugal to offer Internet access at broadband speeds of up to 3.6 Mbps, around 10 times faster than those available with 3G.

With the introduction of the Vodafone Internet Connect Box, there was no longer any need for an installation CD or any configuration. All the user has to do is connect the equipment to the computer's USB port and the connection process is initiated automatically. After just 2 clicks, the Vodafone customer is connected to broadband Internet.

In January 2007, we launched the new version of its 3G Broadband card in Express Card format, which immediately facilitated transmission speeds of up to 3.6 Mbps. This launch made Vodafone the first operator in Portugal to offer its customers 3G Broadband services in this new format.

As the result of HSDPA roaming agreements signed by Vodafone Portugal, it is now possible to use HSDPA services on the networks of around 91 operators in over 67 countries.

HSDPA boosts the potential of Vodafone's mobile broadband services such as Internet access and e-mail, the Vodafone live! mobile portal, and many of the existing information and entertainment services, especially Mobile TV, video streaming and download 'on demand'.

Through this evolution of the 3G network, we are able to maintain our leadership position in innovation and data services by ensuring that our customers enjoy high download speeds and an improved mobile experience when accessing various data services.

DVB-H and DVB-SH

Alongside with our focus on developing mobile direct TV services, based on the 3G and 3,5G technologies (HSDPA and HSPA+), Vodafone is also committed to test and keep up with the development of other new technologies in this area, such as the DVB-H and DVB-SH.

In November 2006, Vodafone and TVI began broadcasting digital TV on a test basis to mobile phones, PDAs and PCs using the new DVB-H (Digital Video Broadcast – Handheld) technology, one of the most advanced for offering mobile TV services. The digital TV service has been tested by TVI and Vodafone under real conditions in various parts of Greater Lisbon using various latest generation mobile phones equipped with DVB-H receivers.

In October 2007, Vodafone Portugal and Alcatel-Lucent demonstrated, for the first time in Portugal, the Mobile Broadcast TV solution based on DVB-SH (Digital Video Broadcast – Satellite Handheld) technology. This technology uses the frequency spectrum in the S-Band (2.17 – 2.20 GHz), available throughout the European Union to broadcast mobile services by satellite, in particular mobile TV. This demonstration enabled representatives of the Portuguese Government, the television and telecommunications sectors and the media to view live broadcasts of RTP Mobile, SIC, TVI and Euronews on mobile phones adapted to the DVB-SH standard.

UMTS900

In December 2006, we made the first 3G/UMTS voice, video and data calls in the 900 MHz frequency band. This was the first time in Portugal, and among the first in the world, that this new technology has been demonstrated under real working conditions.

We believe that the UMTS 900 system brings significant benefits to our Customers by making it possible to extend mobile broadband services more rapidly to suburban and rural areas, and improve coverage and the quality of mobile communications for users inside buildings.

ADSL

In June 2007, we launched the most competitive ADSL Fixed Broadband offer in Portugal, supported on our own ADSL2+ network and using the existing cables in the customer's home. In the initial phase, we offered Internet access solutions with speeds of up to 24 Mbps plus fixed voice services.

Since then, we have been investing heavily in extending its ADSL network and continue to offer voice communications without a standing charge, free calls to the fixed network and the best rates to mobile networks, while allowing customers to use their existing phone and keep their existing landline phone number.

Vodafone Portugal's ADSL services stand out by their simplicity, comprehensible tariff plans, high speed solutions and easy subscription system, as well as by its low non promotional prices.

HSUPA

In September 2007, we launched a new version of its Vodafone Mobile Connect Card with upload speeds of up to 1.4 Mbps, four times faster than the upload speeds currently available on mobile networks. This launch made Vodafone the first Portuguese operator to offer its customers phones that support HSUPA (High Speed Uplink Packet Access) technology, a natural evolution of the 3G Mobile Broadband network.

The Vodafone Mobile Connect Card in Express Card format started supporting download (data reception) speeds of up to 7.2 Mbps and upload (data transmission) speeds of up to 1.4 Mbps. At the end of September, Vodafone launched a new version of the Vodafone Internet Connect Box (with USB connection) that also supported HSUPA technology.

In November 2007, we introduced, for the first time in Portugal, HSUPA (High Speed Uplink Packet Access) technology that increases the upload speed of the Mobile Broadband network to 1.4 Mbps, four times faster than the speed previously available.

The provision of HSUPA technology reinforced our position as the mobile operator that offers the fastest Mobile Broadband access on the Portuguese market, both in terms of download speeds (up to 7.2 Mbps in certain parts of the country) and upload speeds (with the introduction of speeds of up to 1.4 Mbps).

We've been offering several devices that support this technology: the Vodafone Connect Card in Express Card format, the Vodafone Connect Box, which connects to a PC via a USB port, and the Vodafone Connect Pen.

HSPA+

In June 2009, Vodafone Portugal launched its commercial offer of services based on HSPA+ 64QAM technology, which made it possible to effectively tripling the maximum speed of the Mobile Broadband service from 7.2 Mbps to 21.6 Mbps.

After becoming the first Portuguese operator to make data sessions in HSPA+ in February that year, Vodafone kept the lead in rolling out this technology to the general public, becoming the first operator in Portugal and one of the first in the world to offer speeds of 21.6 Mbps on a mobile network.

In July 2009 new HSPA+ technology tests at 28.8 Mbps, performed under real conditions in Vodafone Portugal Headquarters, made it possible to reach average download speeds of 22.5 Mbps and the maximum speed of 28.5 Mbps, very close therefore to the theoretical speed.

In January 2010, Vodafone Portugal once again stood out for its innovation rush by performing the first wireless data session using new HSPA Dual Carrier 43.2 Mbps technology. This technology represents an important step in the development of 3G/HSPA (High Speed Packet Access) by using the aggregation of two adjacent radio channels to improve the access speed and consequently improve customers' experience of Mobile Internet.

LTE

In April 2010 Vodafone Portugal and Alcatel-Lucent performed the first live demonstration of a base station working both in 3G and LTE mode.

This demonstration took place at Vodafone Portugal's flagship store in Porto using 2.6 GHz spectrum and a 10 MHz channel size, giving customers a three-fold increase in the speed they would experience on a 28.8Mbps HSPA network.

In June 2011 Vodafone started to sell the Vodafone Connect Pen K5005 in Portugal – the first Mobile Broadband device capable of supporting the new 4G/LTE technology.

FTTH (RNG)

Following our network development strategy, we have initiated the set-up of a fibre optic next generation network to customers' homes (FTTH - Fibre To The Home), based on the GPON technology, preparing the commercial launch, in June 2010, of our fixed 'triple play' service - voice, Internet and TV offer, based on our own optical fibre network.

The Vodafone FTTH services' offer includes all services already available trough the xDSL technology but at considerably higher broadband speeds.

Known as Vodafone TV Net Voz, this new 'triple play' service offers Internet access speed of up to 360 Mbps (the fastest on the Portuguese market) and an advanced digital TV service with 130 channels (including 18 High Definition channels and 1 3D channel), for an unlimited number of television sets and access to the standard TV Pack without additional costs for an unlimited number of house rooms.