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Uses of the Internet in Portugal

by Cândido Varela de Freitas and Luís Valente

□ Since the early 1980s, the Portuguese scientific community has taken advantage of the information network built in the United States, the ARPANET, as well as other systems built in Europe, such as the EARN (European Academic and Research Network), but the practice has been too restricted and almost unknown outside the scientific community. Late in the same decade, Portugal adopted the French Minitel, following successful promotional action by the French authorities. However, the penetration of Minitel always was insignificant: The system never worked properly, the slowness of connections (liaisons) was excessive, and the information was very poor. The Minitel was like a toy; users appreciated the entertainment, not its usefulness.

The Internet arrived in 1994. Since then its

development has not stopped. A slow start did not restrict the Internet within the boundaries of universities; rather it evolved invading other domains. The Portuguese had already demonstrated good acceptance of technology features rooted in computerized systems; following a short period of studies, a bank consortium established a network of automated teller machines (ATMs) throughout the country. The ATMs were consistently successful and accepted by the mid-1980s. As soon as the Internet became generally available, a broad movement toward its use began. Of course, in the first years it was necessary to fight against some constraints, both technical and cost related. Even today the number of people regularly using the Internet is somewhat limited because operation prices are still high. The previous article by Bradshaw shows Portugal as one of the highest users of Internet in the world (59% of the population in 2000). A good example to illustrate the Portuguese penchant for technologies is the fast and impressive number of mobile phones existing in country: currently, there are 6,500,000 mobile phones for fewer than 10,000,000 people!

As a member of the European Union (EU), Portugal has followed the main directions set up by the EU regarding the information technolgy revolution. The first significant document on the subject issued from the EU was a *White Paper on Growth, Competitiveness, and Employment* (EU, 1993), in which the need for being prepared for the information society was stressed. Then, the Portuguese government set up a "working party" to write a policy document about the objectives to be reached in a near future, considering the implementation of an information society in the country. In April 1997, the Government approved the *Green Paper for the Information Society in Portugal* (MSI, 1997). This document represented the keystone of the Portuguese policy toward new information technologies, which can be summed up as follows: Portugal is engaged in improving democracy by developing an information society, computerizing all state administrative services, helping private companies build up their structures, supporting research and development, and, last but not least, endowing education in order to provide all schools, from preschool to university, with the hardware and software needed to fully equip them to change the teaching-learning process.

Some universities were eager to develop computer science studies, some of which rapidly became centers of excellence. At the same time, groups of technicians developed several revolutionary applications, such as the *Via Verde* (Green Way), a computerized system that allows the circulation of vehicles in highways without stops at the toll booths. A sensor detects the car at the entry and the exit of the highway network, reads the distance covered, calculates the tax, and the appropriate amount is deducted from the client's bank account. This system lets cars run faster, saving time.

The Internet was adopted by virtually every agency in the country—governmental and private. There are Portuguese sites on all subjects: economic, commercial, communication, education and culture, and entertainment. The number of users has not ceased growing (Table 1).

An interesting experience in 1999 illustrates the penetration of Internet in the country. Two men lived alone in a sailing boat in the river *Tagus*, at Lisbon, for a period of a month. They had only computers to link them to the world,

Table 1 ☐ Internet Customers (ICP—The Institute of Communications of Portugal)

	Years			
Internet customers	*1997*	*1998*	*1999*	*2000*
Customers (free access)	-	-	-	1,737,953
Companies (paid access)	88,670	172,698	474,387	81,126
Individual access	-	-	-	143,050
Cable access	16,469	28,588	-	25,236

with the objective of ascertaining if the Internet market could supply all they needed to survive. In fact, the two men bought, via Portuguese Websites, food and hygiene products, as well as other types of goods such as books, disks, and clothes. Additionally, both men continued to practice their professional activity (working in a company that already uses the Internet as its main tool).

Current Status

Although reliable, up-to-date data are not available, the Institute of Communications of Portugal presents in its home page a table giving information about the number of customers accessing to the Internet (Table 1). According to the same Institute, approximately 20% of the Portuguese people use the Internet regularly.

Regarding education, the number of sites available is impressive; as it increases daily, it is difficult to count them accurately. For example, a rapid search (http://netindex.pt) conducted June 11, 2001, indicated 164 registered education discussion forums. All higher education institutions—universities and polytechnics—are on the Internet. The range of services offered varies.

Considering K–12 schools, responsible government officers have understood that in the challenging need for adequate equipment, the Internet is going to play a fundamental role, and they have taken some initiatives to implement use of the Internet in the schools.

Portugal is a small European country with about 10 million inhabitants, and schools of several different types (Table 2). These data are important in understanding some statistics regarding the Internet use in those schools.

In 1997 the Ministry of Science and Technology launched a specific program, Internet in Schools, that aimed to link all schools to the Internet until the end of this current year, 2001. The objective is almost reached: At the time of this writing, all schools had a Multimedia PC (processor 500Mhz; 64K memory; 6GB hard drive; CD-ROM or DVD) and an RDIS interface.

At the same time, another program, the NONIO Século XXI (Nónio, Century XXI), was begun to implement the use of information technology in schools. Although the program also contemplates hardware acquisitions, the main objective is to get schools involved in innovative teaching-learning projects.

Table 2 ☐ Internet use in Portuguese schools (1999-2000) (DAPP—Department of Evaluation, Planning and Prospective)

Schools	*Number*
Kindergarten	4,046
Kindergarten (associated with Primary)	50
Primary (Basic—1st cycle)	8,364
Primary (associated with other Basic cycles)	106
Basic (2nd and 3rd cycles)	702
Secondary	66
Secondary (associated with other Basic cycles)	406
Professional schools	214
Artistic schools	8

Today, many schools have Websites (40% of schools, according to DAPP, 2001) and maintain regular contact with other schools, both within the country and without. Portugal has been an enthusiastic participant in all projects developed by the European Union.

Challenges

Portugal faces several main challenges. The first deals with the cost of Internet use. Some months ago the government promised a flat rate, which would increase the number of customers, but providers are reluctant to comply with official directives. However, high costs keep the number of users lower than desirable.

Another challenge has to do with the need of Portuguese educators to fully develop e-learning. To achieve this objective, some international university-based working groups, as well as other people outside the university environment, are producing distance-learning courses, some of them already on the Internet. However, there is much that remains to be done.

A third challenge is not just a Portuguese concern but a generalized one, and can be summed up in a single question: “How can we

get the most from the Internet as an educational tool, while avoiding hidden pitfalls, such as bad and malicious information, and overcoming the problem of language?"

The hope of the Portuguese community of Internet users is that more adequate responses to these challenges will be found, as the overall community, especially the education community, demonstrates eagerness to cope with the problems and find the right solutions. The Portuguese are fully committed to developing an information society and believe that such a endeavor is essential to Portugal's future in the world. □

Cândido Varela de Freitas [vfreitas@iec.uminho.pt] is Professor of Education at the University of Minho, Braga, Portugal.

Luís Valente [luisvalente@mail.telepac.pt] is a master's candidate in Instructional Technology at the University of Minho, Braga, Portugal, and belongs to the support staff for the Project Nónio, Century XXI.

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Uses of the Internet in Turkey

by Cengiz Hakan Aydin

□ In 1990 the first computer network connection in Turkey was established. During the first six years, several universities were the dominant users of this tool. However, since 1996, the Internet in Turkey has touched almost all sectors, including banking, education, and health. This article provides an overview of both general and specific educational uses of the Internet in Turkey. There are almost no governmental or private agencies that research the growth of the Internet in Turkey and provide satisfactory statistics. The numbers used are the most reliable available but may not be exact.

General Use of the Internet in Turkey

Since the mid-1990s, use of the Internet in Turkey has shown rapid development. The increase was especially great during the period of 1996–1997. In July 1996, only 7,000 Turkish hosts were connected to the Internet. This number had reached 15,000 by January 1997. It is estimated that there will be more than 100,000 hosts and nearly 3 million Internet users in Turkey by the end of 2001 (Haber, 2000) (Figure 1).

Private companies and business firms lead the country in Internet use. Everyday, approximately 20–30 new companies with *com.tr* addresses join the Internet society. According to July 2000 numbers (Cagiltay, 2000, Institutions section), there are 22,282 registered com.tr users in Turkey. The same study reveals that only 3% of the whole population of Turkey are Internet users and the average number of users per computer connected to the Internet is 752, which is very high compared to other European countries (Table 1).

A survey conducted by Tubitak-Bilten (2000) provided some statistics about the status of computer and Internet use in Turkey. According to this survey, only 7% of Turkish people have Internet access; 12.3% have computers at home. Of those with computers at home, about 50% are able to use Internet. Users spend their time on the Internet mostly for e-mailing (23%), conducting research (22.3%) and chatting (16.5%).

In contrast, IBS Marketing Research's study (IBS, 2001), indicated that most Turkish Internet users (54%) connect to the Internet at home. Most of the other users (27%) access the Internet at an Internet café, of which there are approximately 1,200 in Turkey. The same study revealed that most Internet users in Turkey are male and the average age group is 18–24. Users spend approximately 500,000–2,000,000 TL