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"The fact that a global software company has selected Portugal as a test bed for launching an advanced ICT service gives us much confidence in being able to attract more foreign investment."

—*IT manager, Portugal*

"The shortfall of Portuguese entering into higher education (in comparison to EU standards) has negatively affected the supply of IT workers within the economy."

—*Portuguese IT executive*

Concerted efforts have led to significant advancements in Portugal's Networked Readiness, although the country's overall Readiness ranking of twenty-seven reflects long-term deficits in many of Portugal's social and economic indicators. Since 1995, the Portuguese government has assertively pushed an integrated Networked Readiness agenda in such diverse areas as telecommunications reform, learning, business, and government. The private sector has also forged ahead, competing aggressively in Internet services and mobile telephony, among other areas.

Portugal's telecommunications environment was harmonized with EU guidelines when basic telecommunications services were liberalized in January 2000. Portugal Telecom (PT), the fully privatized former state monopoly, plays a major role in the Internet, cable, and mobile telephony markets and controls virtually all local fixed lines—and more than 90 percent of all traffic (Ranking in Effect of Telecommunications Competition: 18). Mobile telephony penetration grew 95 percent between 1995 and 1999¹ and 40 percent in the last year, exceeding rates for Spain, Germany, and France.² Due to equipment problems, launching of third-generation cellular telephony (UMTS) has been delayed until December 2002. The ISP market is dominated by a few of the country's approximately fifteen ISPs, but stiff competition has lowered prices and led to free Internet access (not including telephone charges) for an estimated two-thirds of all users (Ranking in Effect of ISP Competition: 29).

The .pt Web domain has grown consistently, and Portuguese ranks among the top five languages on the World Wide Web (although most websites in the Portuguese language are directed at Brazil). While Internet use remains relatively limited within Portugal, the nation's penetration rate surpasses higher-income countries such as France, Italy, and Spain. Low PC penetration and high local call costs are

impediments, but tax incentives for hardware and software purchases, a flat rate for Internet calls, and a public Internet access program are expected to help extend Internet use. Most Internet users are male students under age thirty.³

Portugal has made great strides in Networked Learning, and is only one of three EU nations to have connected all of its secondary schools to the Internet. In addition, by the end of 2001, every primary school is expected to be connected to the Internet. Challenging work still remains for government programs tasked with integrating ICT and education. NONIO focuses on improved teaching via ICTs, while Promail provides e-mail service to teachers. The Science, Technology and Society Network (RCTS) connects universities, research institutes, nongovernmental organizations, museums, schools, and, most recently, all public libraries in Portugal (Ranking in Public Access to the Internet: 27).

E-commerce has grown, but remains in an incipient state, partially due to security fears (Ranking in e-Commerce micro-index: 34). Estimates suggest that about 10 percent of Portuguese Internet users bought goods online in 1999, which increased to almost 18 percent in 2001.⁴ The banking and retail sectors have made progress toward online activities and are integrating debit cards and ATMs. Many have high hopes for mobile commerce; one group sold more than 25,000 theater tickets via WAP phones in a little over a year.⁵

The Portuguese government hopes to set the tone for adoption of ICTs at large by placing its own activities online and winning over technology skeptics (Ranking in Online Government Services: 21). Public Financing of the Digital Economy 2000–2006 calls for improving e-government services, and while there are still few interfaces, the work is underway.

Key Facts

Population	10,000,000
Rural population (% of total population) 1999	37.20 %
GDP per capita (PPP)	US\$16,882
Global Competitiveness Index Ranking, 2001–2002	25
UNDP Human Development Index Ranking, 2001 (adjusted to GITR sample)	26
Main telephone lines per 100 inhabitants	43.04
Telephone faults per 100 main telephone lines	11.20
Internet hosts per 10,000 inhabitants	62.02
Personal computers per 100 inhabitants	10.48
Piracy rate	42.00 %
Percent of PCs connected to Internet	5.92 %
Internet users per host	35.90
Internet users per 100 inhabitants	22.27
Cell phone subscribers per 100 inhabitants	66.51
Average monthly cost for 20 hours of Internet access	US\$14.84

RANK

Networked Readiness Index 27

Network Use component index	25
Enabling Factors component index	28
■ Network Access	28
Information Infrastructure	25
Hardware, Software, and Support	30
■ Network Policy	24
Business and Economic Environment	23
ICT Policy	25
■ Networked Society	33
Networked Learning	29
ICT Opportunities	28
Social Capital	41
■ Networked Economy	28
e-Commerce	34
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