Strategies for Accelerating the Worldwide Adoption of E-Commerce

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In recent years, many organizations have recognized the potential of e-commerce to improve profitability by increasing productivity and market penetration while reducing costs. But the vision of an electronically interconnected world requires the global adoption of e-commerce, not just in industrialized nations, but also in developing ones, where most of world's population lives. To successfully encourage the embrace of the Internet and e-commerce, one must carefully study the unique socioeconomic and cultural aspects of such nations. This article discusses ways to stimulate the worldwide adoption of e-commerce, based on our case study of Greece, a nation that has been slow to embrace Internet technologies.

According to a study by industry consultant Forrester Research, Inc., the e-commerce industry will expand to $1.3 trillion by the year 2003. This anticipated exponential growth has led many U.S. companies—ranging from electric utilities to credit card firms to computer equipment manufacturers—to enter this marketplace, either as sellers of goods and services, or as equipment and infrastructure providers. Small U.S. businesses have also begun employing the Internet as a business tool. According to a 1998 study from International Data Corporation, more than 41% of U.S. businesses with fewer than 100 employees have Websites, compared with 19.7% in 1996. The trend is led by professional service businesses, such as law and real estate firms.

The growth of the Internet outside North America is key to the proliferation of e-commerce. In 1998 about 20% of the population in North America had Internet access [3], while only about 7% in the European Union (EU), and 2% in the rest of the world had access. E-commerce activities have seen mixed results. Dell Computer made up to $4 million per day in online sales in early 1998, but other e-commerce ventures were less successful. A European online shopping pilot project called e-Christmas had 180,000 site visitors in the late 1990s, but only 14,000 of these visitors registered on the site, and only about 200 made purchases [4]. It is interesting

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the EU is lagging significantly behind North America, although not for lack of consumer purchasing power or networking infrastructure.

**The Digital Marketplace**

Some interpret the term electronic commerce as fully digital commercial activity, while others view it as a traditional commercial activity supported by electronic technology. We suggest e-commerce encompasses both. The commercial activity can occur between businesses, or it can involve consumers and government agencies. Our article focuses mainly on e-commerce between businesses and consumers.

We expect e-commerce to revolutionize at least four aspects of traditional trade:

- Distribution networks of goods and services;
- Customer accessibility to products and services and related information;
- Payment methods; and
- Customer feedback/market research.

Factors that inhibit the development of e-commerce include fear of the unknown, especially for those lacking familiarity with computers. Also, the extensive publicity surrounding hacker attacks on high-security computer systems has influenced perceptions about Internet security. Many individuals fear privacy loss as data on finances, personal lifestyle, and purchasing habits is increasingly collected and stored electronically, and could fall prey to unauthorized users.

Many expect the Internet to level the playing field for companies large and small, as the digital marketplace redefines how companies conduct business. It has potential to accelerate the reallocation of market share by helping consumers find the information they need before buying. It also makes it relatively easy for small companies to enter the market, since it requires less technology and human resources. Current tactics for developing the Internet market depend on a company’s nature and structure, but generally, two main patterns have emerged [11]. A company may use the Internet to assist current practices, by providing product information or customer support, or carrying out product transactions (see Figure 1). This pattern is typically used by multinational corporations. A company may also use the Internet for all of the above,

![Figure 1. Market development strategy #1.](image-url)
as well as to distribute products to customers (trial versions), collect feedback, and make additional sales on refined or new products (see Figure 2). This pattern, typically used by Internet startups, can be viewed as a model for the concurrent development of products and markets. One company following this model is Real Audio Corporation (www.real.com), which develops audio and video streaming software. Multinational companies such as Sun Microsystems are also beginning to follow this pattern.

The Digital Marketplace in Greece: A Case Study

Greece is not one of the economically stronger countries in the EU, but its embrace of cellular phone technology suggests it may be fertile ground for other technologies as well. Cellular phone technology has seen explosive growth in Greece in recent years, despite high subscription fees and connection charges relative to regular phone service. The growth rate of cellular phones in Greece, which in 1997 was 80%, ranks fourth in Europe behind France, Spain, and Italy. This growth took place with only two providers (Telestet and Panafon) and limited competition.

By contrast, the number of Internet users in Greece has been quite small, despite a significant infrastructure providing good national and international connectivity. There is the academic network GRNet, funded jointly by the EU and the Greek government, which connects universities, technological institutes, and government research centers. International connectivity is provided via a 34 Mb/s leased line. In the private sector, competition is fierce among the more than seven Internet Service Providers (ISPs), which offer low monthly access fees (less than US $20). The exact number of the Internet users in Greece is uncertain because not all commercial ISPs share their subscriber numbers, but according to one estimate the total was 70,000 in 1998, about 30,000 with commercial ISPs and the rest at academic institutions [9]. This is a low figure, considering the availability of ISPs and the low monthly subscriber fees, which are comparable to those charged by the cellular phone companies.

The small percentage of the Internet users in Greece, significantly below the EU average and even below the worldwide average, is not due exclusively to lack of personal computers (PCs), as estimates several years ago placed the number of PCs in Greece at about 500,000, or 5% of the population [6]. We believe the Internet's rel-
ative lack of popularity in Greece also reflects educational and cultural values. A 1998 study by International Data Corporation (IDC) [10], revealed the following characteristics of Internet users in Greece:

- The majority of users are male (93.1%);
- Most users (74.2%) are between 18 and 39 years of age, while 15.6% are 40–49 years of age and only 4.3% are over 50; and
- Each user spends an average of 10.7 hours per week on the Internet.

This profile of the Greek Internet user is quite different from the general population profile in Greece, where over half the population is female, and there has been a demographic shift to older ages due to low birth rates. The high weekly usage suggests users are technology-oriented and view the Internet as a hobby, rather than as a tool for carrying out business transactions.

Not surprisingly, e-commerce is limited in Greece. A limited number of Greek Internet sites support some form of e-commerce activity, primarily in tourism and book shops. As of July 1998, only one bank offered online banking to its customers (www.egnatiabank.gr). There is little Greek content, although a few search engines specialize in such content, such as www.phantis.com. The concept of e-commerce is relatively well known to the academic community primarily because of EU funded initiatives, such as research projects, workshops, and presentations [5]. Although EU policies place an emphasis on funding the creation of Internet products, we believe this effort will be unsuccessful unless a market is also created.

The current Internet users in Greece appear interested in e-commerce, as suggested by the IDC study. Over one third of these individuals have made purchases via the Internet and 65% plan to do so in the near future. Of those who made purchases: 40.7% bought subscriptions to newspapers or periodicals, 32% purchased other products, 24.3% used online information services such as investment research tools and encyclopedias, and 23.2% purchased other services, such as consulting services from abroad. But again, the Greek Internet user profile is not representative of the population profile at large. Also, the low percentage of the Internet users and e-commerce activities in Greece contrasts sharply with the growth in cellular phone technologies. Some causes of these disparities may be found in Greek consumer behavior.

During their first wave of popularity, cell phones were viewed as luxury items and status symbols, which happened to be far more affordable than other status symbols such as cars and homes. They became more than just a fad as consumers recognized their convenience. Greece is extremely family-oriented, and many individuals maintain almost constant contact with family members. Cell phone service is generally available on a same-day basis to applying customers—a great selling point in Greece, with its long delays in obtaining traditional phone service because of limited switching centers and cabling infrastructure. Also, it didn't hurt that the cell phone companies advertised extensively, using TV and radio commercials, billboards, direct marketing, and offers of free phones or other gifts for yearly subscriptions. In addition, cell phone technology was implicitly promoted by the mass media, which featured the phones in movies and talk shows.

The convenience of cell phones was also quickly recognized in the business world, where individuals are not accustomed to doing business from their offices to the same degree as in the U.S. Most Greek companies are small- to medium-sized, and because
of the state bureaucracy and the need for personal contacts, their operation requires mobility. Greeks also want to see things before making decisions, and this is an inseparable component of their business culture. Also, cell phone calls are considered much more secure than wired phones, since the technology requires a personal identification number (PIN) to establish a connection with another phone, and provides encrypted transmission of conversations.

By contrast, the Internet does not offer the above advantages. It does not tend to offer content of interest to mainstream Greek consumers. Potential users may also be discouraged by the expense of local phone calls for ISP access, as most telephone switching centers in Greece have been replaced with digital ones, and local phone call charges depend on the time of usage. The Greek school system has been slow to adopt an Internet culture. Only recently have universities begun developing internal networks to provide undergraduate students with Internet access and training. Few high schools have PCs. There has been little advertising on the ease of access and benefits of the Internet to the general public. Also, attempts by some ISPs to offer package deals with PCs were met with skepticism by the PC vendors because of the high support costs if users had difficulty setting up their Internet connection.

**Strategies for Developing the Digital Marketplace**

Aside from being comprehensive, focused, and long-range, any strategy to develop a digital marketplace must take consumer cultures into account. The successful merging between consumer cultures and marketing is expected to lead e-commerce to success [7]. Developing the Greek digital marketplace then, requires more content in the Greek language, of interest to Greek consumers. Applications should be created with an eye toward improving consumer public services. For example, Athens has major automobile traffic problems and long waiting lines in the public sector. Internet services could help reduce driving and waiting time by enabling Internet transactions with banks and utility companies. Offering traffic information online could also help attract consumers to the Internet (a real-time traffic map of downtown Athens is currently provided at www.transport.ntua.gr/map). To empower consumers to take advantage of such services, more Internet education is needed in the school system, as well as in businesses, public organizations, and cultural societies.

Drawing computer literate Greeks to the Internet with useful services is a crucial step toward the success of Greek digital marketplaces. Also needed is increased penetration of credit cards, a requirement for conducting transactions on the Internet. Currently, credit card use in Greece is relatively infrequent, as not all merchants accept them. Also, inflexible bank credit policies restrict young people from obtaining credit cards. This is especially significant, since 55% of the current Internet users in Greece are university-based. Efforts are needed to change bank policies and increase credit card awareness among consumers and merchants.

More efforts are also needed to attract individuals living outside Greece to the Greek digital marketplace. For example, tourism draws over 10 million visitors a year, and potential visitors need comprehensive information on accommodations in Greece, as well as on Greek history, language, and culture. Greek exporters should be encouraged to develop e-commerce applications to broaden their market to the millions of Greeks living abroad, as well as to non-Greeks.

The arrival of new technologies is expected to drastically change the landscape by simplifying user interfaces, making e-commerce accessible to all segments of the pop-
ulation. Such technologies include Internet access over digital TV, introduced in Greece in 1999, which provides an easier operating environment than current PCs and a well-known interface to consumers. It also provides higher bandwidth than current dial-up connections for downloading large files. Internet access over cell phones is another such technology, although the small display imposed by the mobile phone is one drawback. E-commerce via Automatic Teller Machines (ATM) is also an interesting possibility because of the proliferation of ATMs. This approach has been adopted in Portugal, which has a more recent ATM network than other EU countries.

Additional tactics to develop digital markets include:

• Focusing on products that can be easily differentiated with information provided by the Internet. Examples include hotel rooms illustrated by Website images and airline tickets available via price auctions.
• Avoiding information overload on Web pages, which must communicate points succinctly. Too much information can take too long to download and can be confusing. Simple language also helps minimize language barriers and differences in assimilation rate among cultures [2].
• Providing more efficient search engines. Ideally, search engines should manage complex queries, interact with the user, and provide only relevant information.
• Using existing advertising media to broaden the market. For example, yellow pages should include Web addresses along with telephone numbers and street addresses.
• Establishing credibility by guaranteeing security and privacy. The security of Internet transactions should be emphasized. Liability for misuse should be on companies and not consumers.
• Creating international legislation to ensure the legal validity of e-contracts. This will provide a sound legal framework supporting local and international e-commerce transactions.
• Liberalizing telecommunications regulatory framework. Many countries have state-run telecommunications monopolies that often provide low quality service at high cost. Opening the market and allowing for competition will most likely improve this situation.
• Developing “matchmaking” mechanisms that allow buyers to identify products with certain characteristics, and sellers to discover buyers with specific profiles [1].
• Creating a social trend or style using the mass media, including television, radio, and newspapers.

Conclusion
The recent surge in Internet use has increasingly popularized e-commerce in the U.S., but the rest of the world lags behind. To accelerate the worldwide growth of the Internet and the adoption of e-commerce as a new paradigm for carrying out business transactions, socioeconomic and cultural factors must be taken into account. The potential of e-commerce for reshaping the way we conduct business transactions is tremendous. It remains to be seen whether this potential will be fully realized with current technologies, or if future technologies providing easier-to-use and less expensive user interfaces are required.
References


