

*Paschalis Bouchoris*

# The E-Commerce Challenge: Strategic Implications For Enterprises

*Electronic commerce is a serious strategic challenge to businesses. As the e-commerce paradigm prevails, enterprises, key among them European telecommunications operators, have to understand how they can enhance value and gain competitive advantages through e-commerce. This paper puts the current state of e-commerce development into some context and sizes up its short-term future potential. It discusses the recent phenomenon of very high market capitalisations of e-commerce ventures and analyses the prime competitive strategy implications arising from the introduction of e-commerce. In brief, it identifies three ways in which enterprises can benefit from e-commerce: cost reduction, differentiation and new market development. It analyses the impact of e-commerce throughout a company's value chain: inbound logistics, production, sales, marketing, outbound logistics, distribution, post-sales support, staffing etc. Finally, the paper focuses on the development of e-commerce in Europe and the reasons it is lagging behind development in the United States marketplace.*

---

**Paschalis Bouchoris**, European Dynamics S.A., 24 Ebrou Street, Athens 115 27, Greece  
Tel: +30 1 6987100  
Fax: +30 1 6987105  
E-mail: pbouchoris@hotmail.com

## An Overview of the E-Commerce Market

Although the skyrocketing growth of electronic commerce from basically zero level of revenues in 1995 is an undeniable fact, there is little consensus among research firms regarding projected e-commerce revenues in the near to mid-term future. According to a recent report by OECD, electronic commerce worldwide is predicted to reach \$330 billion in 2001–2 and \$1 trillion in 2003–5, rising from a mere \$26 billion in 1997. At these levels, in 2001–2 e-commerce will represent three times US catalogue sales, 24% of US credit card purchases and 18% of US direct marketing sales.

Analysing the e-commerce market entails a differentiation between the following segments:

### Business-to-business

Business-to-business electronic commerce, a field which has existed for long in the form of electronic data interchange (EDI) over value-added networks and has now evolved adopting Internet protocols and encompassing intranets, extranets, etc. This is a relatively well-developed segment currently representing the bulk of all electronic commerce. Analysts estimate that business-to-business trade may already exceed \$150 billion.

### Business-to-consumer

Business-to-consumer e-commerce, which can be further segmented by main category of tangible and intangible products as follows:

- *tangible*: Computers/electronics, books, clothing, food/drink; and
- *intangible*: entertainment, software, travel, newspapers/

magazines, financial services, e-mail.

To date, the largest segments of e-commerce activity involve intangibles (most importantly entertainment, software, financial services).

In particular, financial services (stock trading, banking, insurance) have seen an explosive growth on the net over the last year. Nowadays, one out of seven share trades are taking place on the Internet with 6.3 million households, in the US alone, trading their shares over the Internet.

Internet discount brokerage houses were the first to exploit the advantage of the Internet and, as a result, have now excelled to a position to challenge established financial institutions by offering the full spectrum of financial services. Furthermore they are making plans to establish their own markets that could soon become competitors to the existing stock exchanges.

One of the tangible product categories generating a lot of sales on the net is computers but other products are seeing their Internet sales increasing rapidly too.

There are many factors that have proven to influence growth in business-to-consumer electronic commerce. A non-exhaustive list of the main drivers includes convenience, personalisation, choice, amusement and savings, while legal and psychological barriers are the most common inhibitors.

## Competitive Strategies for E-Commerce

The emergence of e-commerce has serious implications on the competitive strategy of firms. E-commerce has been used as a strategic weapon in order to gain competitive advantage either

through cost reductions or through differentiation. New, non-industry entrants have appeared in many sectors due to e-commerce while existing players have used it to diversify their product offerings, and enter new markets (usually addressing the global market). In this pursuit of a global market, localisation has remained important and as a result a combination of global services highly customised to the needs of local/niche markets have prevailed. As typical in a market which is at its introductory stage, product innovation has been the basis for initial entry and early success. However, as the sector has evolved and competition intensified other requirements for success have emerged: investment/financial resources, marketing, advertising and distribution strengths (as in the case of Netscape versus Microsoft). Thus, many actors have moved from introducing and exploiting their own technological standard to competing on issues such as acquiring customer information, exploiting first mover advantage to become niche/category leaders, or building strategic alliances.

In the paragraphs below, some of these competitive strategy issues are analysed in more detail.

From a company's standpoint the main strategy motives for doing business on-line seem to be:

### **Reduce costs**

E-commerce technologies can be used throughout the value chain to reduce costs. More specifically e-commerce has proven to be a significant cost saver in the following activities:

#### ***Purchasing of production inputs***

Companies using EDI over value-added networks (VANs) have been reported to save commonly 5–10% in procurement costs. This cost saving is even higher with Internet technologies, given their considerably lower investment and operating expense.

#### ***Inventory***

The long-time 'zero inventory' target of production managers seems to be finally approachable with the use of e-commerce technologies. These technologies have enabled an unprecedented level of integration between marketing and production operations and abundant information on detailed customer needs and purchasing habits to be used for inventory management. Lower inventory means lower materials handling, warehousing and general

administrative costs and more efficient utilisation of production capacity with subsequent reductions in the need for plant and equipment. For intangible content-based products (for example, newspapers and magazines) the inventory is completely eliminated as the paper-based editions are being replaced by 'bits-and-bytes' sent upon request.

#### ***Production***

Again, the intangible products are the ones benefited more as e-commerce offers unparalleled economies of scale. Increases in output do not require proportionate increases in input. An e-commerce product can be profitable no matter how many units are produced—there is no extra unit cost while there is ample possibility for customisation addressing the individual consumer needs at no extra cost. In addition, manufacturers of tangible products can reduce their production costs by exploiting location advantages as they source production inputs from the lowest cost location worldwide in a seamless way. Through intranet/extranet applications they can link together resources in the model of a *virtual corporation* and spread throughout a possibly global organisation the costs of expertise available at even the most remote location, thus generating rare economies of scale.

#### ***Sales***

This is an activity at which electronic commerce has already proven its efficiency and effectiveness. As the Internet users' base expands, enterprises can exploit their relatively much lower cost Web store to complement or even replace the real world alternatives (physical store, sales representatives visits, print catalogues, telephone sales, tele-shopping). In the advantages of a Web-based point of sales one should add the little or no additional cost to add a new customer, the potential to pursue a global clientele at relatively lower costs than compared to the physical world alternatives, as well as the extra efficiency in order placement and execution.

#### ***Marketing/advertising***

As with the sales activity, marketing has benefited a lot from the introduction of the Web due to the superior value-for-money it offers. Most importantly it is a unique means of collecting marketing information, executing highly-targeted promotions,

or interacting with the customers in the direction of one-to-one marketing.

#### ***Product distribution***

The potential for cutting distribution costs through improved coordination/organisation (particularly for intangible goods) is already being exploited by many organisations throughout the world. Furthermore, the potential of e-commerce to alter the cost structure of this activity is responsible for many ventures that have succeeded in transforming the industry structure by introducing a radical 'dis-intermediation' which has outplaced intermediaries such as traditional wholesalers or retailers.

#### ***Customer support/after-sales service***

Companies such as Dell and Cisco have reported an increase in their customer support productivity by 200%–300% and savings of over \$100 million in customer service costs. According to Forrester Research data, it generally costs \$500–\$700 to send a service representative into the field, \$15–\$20 to handle the request over the telephone, and about \$7 to do the same over the Internet. As an indication of the cost-savings potential, Federal Express has reported that its on-line customer service system represented savings of about 20 000 new hires—almost 14% of its total staff. (Source: US Department of Commerce report.)

#### ***Personnel***

The introduction of e-commerce technologies can reduce or eliminate organisational slack and improve efficiency in traditionally labour intensive activities such as sales, inventory management, customer service etc. E-commerce ventures require in general far fewer, but better-skilled staff. As an indication, Amazon.com the largest Internet bookstore has less than 700 employees while Barnes & Nobles, the largest physical US bookstore more than 27 000!

Furthermore, the introduction of e-commerce may alter a firm's cost structure in particular with regard to its linkages to other actors, most commonly wholesalers, retailers, subcontractors, raw material suppliers etc.

#### ***Differentiate***

The Web offers numerous possibilities for differentiation. It enables

product expansion either through new product features or through the combination of related product/service offerings. It offers ample opportunities for new product development. Most retailers on-line have soon discovered the potential to expand their role as merchants to community organisers attracting an audience of existing and potential clients to their site which becomes more of a forum where trading operations are blended with content, after-sales services and opportunities to interact with producers and other product users. Service providers such as banks and brokerage houses have been able to add ancillary services in a way that could not be done in the physical world.

*Perceived differentiation* is also an important contribution of the Web, with customers seeking more convenience, personalisation and choice. However, with technology issues being mastered by more and more actors and competition intensifying, image differentiation requires increasingly more resources.

*The ability to differentiate through the Web has been an opportunity for new industry entrants or smaller participants to gain competitive advantage.*

This was the case for Amazon.com, and for auction sites that became leading e-commerce actors winning traditional players.

### Enter new markets

Global by nature, e-commerce has enabled many commercial enterprises to overcome the boundaries of their limited geographic markets and expand worldwide. Small companies located in obscure areas of the world have managed to create a global brand and, usually through alliances with global distribution mechanisms, sell their wares worldwide. It should be noted that with technology not being an entry barrier anymore, advertising and brand development becomes the most significant obstacle. Another significant barrier is overcoming consumers' security considerations when involved in commercial transactions on the net and, thus, the need to build the necessary level of trust.

### Other strategic implications

*The great importance of strategic alliances has been profound in the e-commerce era.*

Banks are allying with technology providers to develop facilities for secure

transactions, media and retailers are joining forces to attract advertising revenues, groups of commercial sites are syndicating *banner space* to increase their bargaining power with advertisers and agencies, producers and distributors are collaborating to replace intermediaries and increase their margins etc.

The prime motives for strategic alliances in the e-commerce arena seem to be: economies of scale (in advertising, research and development, product development, etc.), access to resources and capabilities not available internally, improvement of margins through restructuring of the value chain.

Despite intense activity in both directions (forward and backward) of vertical integration, there is no common understanding yet as to the optimal degree of internalisation of transaction costs. At the same time that some actors opt for vertical integration others transform to virtual corporations where the primary function of the company is coordinating the activities of a network of suppliers while owning only one activity in the value chain (such as production, distribution, brand/advertising and sales).

A final note on the competitive strategy implications of the electronic commerce is the intense mergers and acquisitions (M&As) activity in the e-commerce sector.

According to Securities Data Corp. the biggest 1998 Net M&As were: AOL/Netscape (\$4 billion), Ticketmaster/CitySearch (\$700 million), Disney/Infoseek (\$465 million), AOL/Mirabilis (\$287 million), Verio/Hiway Technologies (\$256 million), Microsoft/LinkExchange (\$250 million), Cisco/Nextspeed (\$233 million), Amazon/Junglee (\$173 million) and Lycos/WhoWhere (\$128 million).

There is a clear trend away from the *fragmentation* at the early stage of the market's development and towards an *oligopolistic structure*. This trend is indicated by the high concentration of revenues in the top 3–4 players in every product category and is reinforced by the increasing difficulty to compete for the consumers' 'mind-share' in highly congested sectors.

### E-Commerce Firm Valuations

The Internet stock fad of 1998–1999 is clearly the most extreme stock market frenzy in the history of global financial markets. The investors'

enthusiasm about almost any company with a '.com' in its name is unprecedented even compared to other infamous periods of overheated stock markets such as the tulip bulb craze in 17<sup>th</sup> century Holland, the 19<sup>th</sup> century railways stock surge, the 1980s software mania etc. A series of phenomenally successful initial public offerings (IPOs) of Internet-related companies, the stock price explosion of listed e-commerce companies, and a rapidly growing number of individual shareholders using the net and electronic brokerages to trade their own shares are aspects of this phenomenon.

Statistics are revealing: In 1998, Amazon's share price rose 638% reaching a market capitalisation of \$18.9 billion, more than six times that of Barnes & Noble, the world's biggest bookseller. Amazon is not expecting profits before 2004 and it is not the exception in a financial world that is not scared by the losses of e-commerce/Internet related ventures. Other high-profile stock market successes of the e-commerce sector are: Yahoo who saw its share rising 452% to a market capitalisation of \$11.7 billion in 1998, AOL 294% (market cap. \$40.9 billion), eBay 252% (market cap. \$7.6 billion), Excite 227% (market cap. \$2.5 billion) and Lycos 153% (market cap. \$2.3 billion) (*source: Yahoo Finance*). Reflecting the success of its on-line trading site, the market capitalisation of Charles Schwab, the discount brokerage, had exceeded that of the financial conglomerate of Merrill Lynch by the end of 1998!

Highly reputable US venture capitals and investment banks have secured hundreds of millions of dollars venture financing for e-commerce companies with non-existent profits and sometimes even revenues! As reported by the magazine *The Industry Standard* (Jan 1999), StarMedia, a Spanish-language portal for the Latin American market, has raised \$80 million, Buy.com (an Internet department store) \$60 million, Priceline.com (an auction site) \$55 million, Realtor.com, (a real estate site) \$50 million and Talk City (a network of Net chat sites) \$34 million.

Even the most faithful believers in the potential of e-commerce market cannot explain current valuations at these levels. In the absence of a track record of revenues, visible future profits, hard assets, or even (sometimes) experienced management

teams, what drives these unprecedented valuations remains an enigma—according to conventional analysis.

There are many people who tend to believe that a new set of net-economy tools should replace mainstream economic analysis when assessing investments in the e-commerce sector.

### **E-Commerce in Europe and Implications for European Telecommunications Operators**

Europe is clearly lagging behind in e-commerce activity. Sales estimates suggest that US is credited with about 80% of the total e-commerce activity with a potential decline to 65%–75% by 2002. With the possible exception of Scandinavia, the adoption of e-commerce practices is still sluggish in Europe.

IDC forecasts that Western European revenues from e-commerce will rise from 900 million ECU in 1997 to 26 billion ECUs in 2001. According to another estimate by Datamonitor, on-line shopping at European Web sites will rise from ECU 95 billion in 1997 to ECU 4.3 billion by 2002.

The key factors still limiting the growth of e-commerce in Europe seem to be the following:

- bandwidth comes at relatively higher cost and lower quality/capacity;
- liberalisation of the telecommunications sector is lagging behind;
- European consumers are not used to buy through mail order/catalogue/ distance schemes;
- penetration of PCs/modems in households and enterprises is lower;
- societal awareness about the benefits of e-commerce is lower;
- European national markets are still relatively fragmented;
- European citizens are not comfortable entering cross-border commercial transactions by distance; and
- linguistic diversity becomes a barrier in developing content which can attract communities of users and stimulate e-commerce activities.

However, despite a slow start, Europe is catching up fast. According to a survey presented in the 1999 report of the European Information

Technology Observatory (EITO) most European businesses believe that electronic commerce will become the norm for sales, post-sales, purchasing and marketing functions before the end of 2001. This fast growth is also demonstrated by research data which indicate that at the end of 1998 29% of European business were using Internet-based e-commerce applications—up from only 6% in 1996—while, by the end of 1999 an estimated 47% of European firms will be using e-commerce.

The state of e-commerce in Europe and, more importantly the mid-term outlook of its growth present very significant implications to European telecommunications operators. This impact can be analysed as follows:

#### **Telecommunications companies as enablers of e-commerce**

Telecommunications operators as infrastructure providers (access, backbone etc.) are key enablers of e-commerce.

The continuing expansion of the Internet and the diffusion of e-commerce practices suggest a serious need for an upgrade of the European telecommunications infrastructure including both access and bandwidth resources. With more than 45 million hosts and more than 30 000 Internet service providers operating worldwide, costs and capacity bottlenecks in European local loop, switching/routing and backbone infrastructures may inhibit the growth of electronic commerce unless a lot of additional investment takes place in the next 2–3 years.

When estimating the viability of their investments in this area and taking into account the above analysis, telecommunications operators should take for granted the insatiable demand for bandwidth-intensive services and commit resources to the expansion of their basic telecommunications infrastructure in Europe.

#### **Telecommunication operators as e-commerce industry participants**

European telecommunications operators are also actors themselves in the e-commerce sector. In most European countries, Internet service providers owned or controlled by incumbent PTTs are holding leading positions in their domestic Internet markets. These ISPs should build and utilise strategic alliances with

other actors as described previously to generate more value as pivotal players in the e-commerce market. Taking advantage of the financial markets' endorsement of e-commerce ventures, ISPs may reach significant market capitalisations enhancing shareholder value for controlling telecommunications operators.

#### **Telecommunications operators as adopters of e-commerce facilities**

Telecommunications operators should learn from the competitive strategies for e-commerce described above to re-engineer their own operations, saving costs throughout their value chain. In an increasingly commoditised market in which telecommunications operators fight against churn, e-commerce offers them opportunities to differentiate themselves, deliver more and enhanced services to their customers and excel to one-stop centres for their clients. Accessing detailed, customised billing information over the Web, paying telecommunication bills electronically, offering customised services to businesses and niche audiences are indicative examples in this direction.

### *Biography*



**Paschalis Bouchoris**  
European Dynamics  
S.A.

Paschalis Bouchoris is an Assistant Managing Director at European Dynamics S.A., a fast-growing European systems integrator headquartered in Athens, Greece. The company's affiliate, Telecom Dynamics, is Greece's leading private telecommunications operator developing a state-of-the-art alternative telecommunications network throughout Southern Europe. He is an electrical and computer engineer and an MBA graduate from Rotterdam School of Management, the Netherlands. He has also worked as a management consultant and industry analyst. His main areas of professional expertise are: business strategy, investments and international business development.