



White Paper

The Internet Economy in Europe—From Revolution to Evolution

Abstract: *Commissioned by Cisco Systems, this White Paper shows that the Internet Economy in Western Europe is evolving rapidly. It highlights that the attention given to the fortunes of dot.coms may have masked the fundamental and irreversible changes taking place in the attitudes and behaviour of mainstream businesses. These will result in the dramatic growth of the Internet Economy in Western Europe to more than \$1 trillion in 2004. This paper reviews significant variations in the size and maturity of the Internet Economy in the different Western European countries. It contrasts the slower development in Eastern Europe and the Middle East with that of Western Europe. The paper concludes that the European Internet Economy is here to stay.*

By Nick Smith, VP GartnerConsulting

Introduction

Following the market-led re-adjustment of dot.com valuations—so called "Black Tuesday", we have entered a period of heightened public and press debate on the future of Internet commerce. Contrasting opinions have been expressed as to its viability, the relative Internet strength of European nations, and the size of what we have come to call 'the Internet Economy'.

This White Paper aims to provide an objective assessment of the status of the Internet Economy in Western Europe today, how it compares to Eastern Europe and the Middle East, and how Gartner expects it to evolve over the next few years. It will show that:

- The Internet Economy in Europe is alive and well, and will grow from \$53 billion in 1999, to be worth \$1.2 trillion by 2004
- The association of the Internet Economy with dot.com is false; the real Internet Economy is multi-faceted, ranging from infrastructure providers to traditional businesses using the Internet as another channel to market
- The Internet Economy in Western Europe is building critical mass, moving mainstream, and on a path to maturity. However...
-the attitude and behaviour of Western European companies in relation to the Internet does vary, principally by region and industry group, but also, to a lesser extent, by size – revealing some unexpected patterns
- Although the Internet Economy in Eastern Europe and the Middle East is significantly less advanced, there are definite signs of progress among the leading nations, such as the Czech Republic and UAE
- National e-business development has been plotted on a Gartner E-business Opportunity index, which provides a measure of maturity attained.

Methodology

Commissioned by Cisco Systems, Gartner Consulting conducted extensive primary research during the summer of 2000, specifically to support the development of this White Paper. The cornerstone of the research comprised a programme of telephone interviews (of 30 minutes duration) with the managers responsible for Internet commerce activity in 805 companies with operational Web sites. These ranged in size from very small start-ups to major multinational corporations, in 14 countries in Western Europe (772 interviews) and South Africa (33 interviews). Gartner also carried out 116 qualitative interviews in the Middle East and Eastern Europe with a variety of organisations involved in the Internet Economy – users, ISPs, government officials etc—and had detailed discussions with 15 venture capital companies in Western Europe.

In addition, the White Paper draws on the extensive research data from Gartner's continuous research programmes covering the telecommunications, Internet, and e-business market sectors, together with the knowledge and expertise of our e-business analysts and consultants.

Definitions

Gartner classified the companies spoken to into the following broad types:

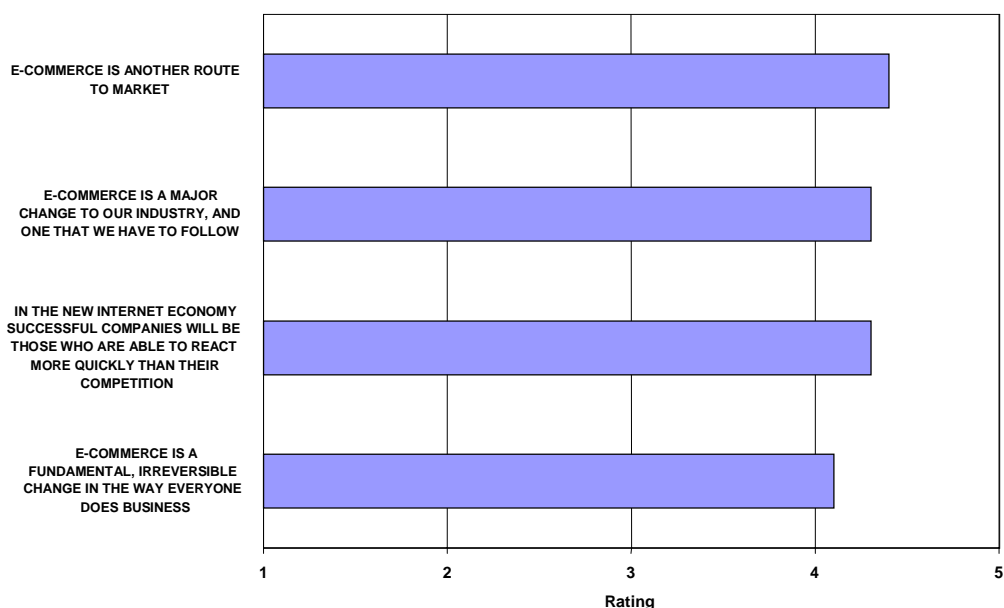
- **Dot.coms**—companies that would not exist without the Internet, and which challenge conventional business models
- **Hybrids**—traditional businesses that are using the Internet as another channel to market, with order and/or payment capabilities via their Web site
- **Brochurewares**—companies that are using the Internet to provide information about their company and its products or services, with no order and/or payment capabilities.

Many Hybrid and some Brochureware companies are, of course, already using the Internet to support other e-business activities such as logistics.

The Internet is here to stay

The companies Gartner interviewed were asked ten questions designed to gauge their overall attitude to the Internet's importance and relevance. Figures 1 and 2 give the overall responses.

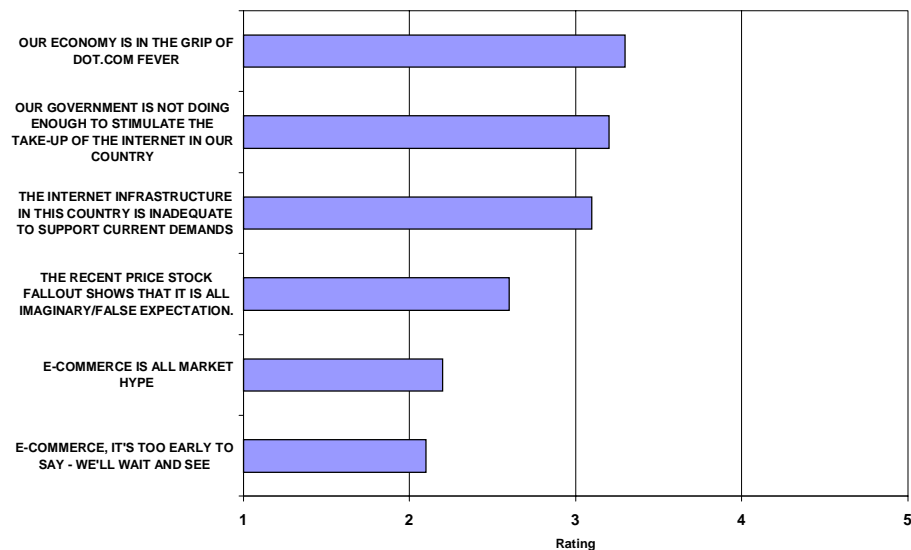
Figure 1. Attitude to E-commerce: 1—Level of agreement with 'progressive' statements



Note: 5=strongly agree, 1=strongly disagree; Sample size=772.

Source: GartnerConsulting

Figure 2. Attitude to E-commerce: 2 – Level of agreement with 'conservative' statements



Note: 5=strongly agree, 1=strongly disagree; Sample size=772

Source: GartnerConsulting

Even a cursory inspection of the above figures reveals a picture of confidence that the Internet is a real and lasting phenomenon:

- 75 percent of respondents agreed with the statement that *'the Internet is a fundamental and irreversible change to the way everyone does business'*
- 85 percent agreed with *'e-commerce is a major change to our industry, and one that we have to follow'*
- Only 12 percent thought that *'it is too early to say, we'll wait and see'*.

This positive attitude was represented throughout the sample. Large financial institutions fully reflected the mood, as did manufacturing companies (which one may have thought would be less convinced of the Internet's permanent place in the wider economy).

The European opportunity is big...

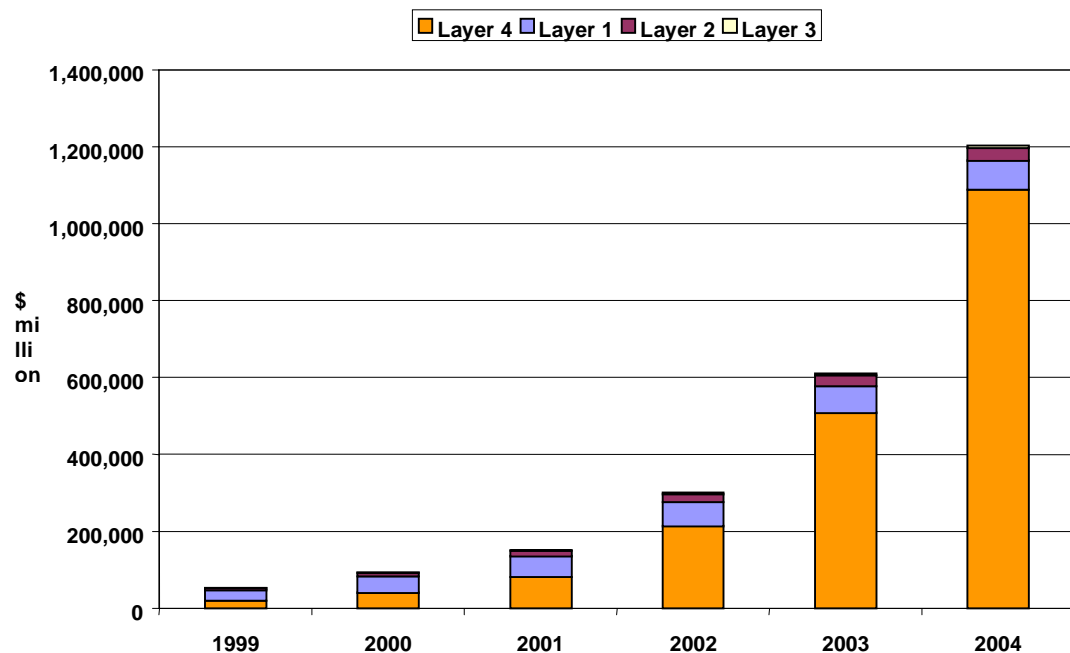
Independently of the end-user research project, Gartner has been evaluating the size of the Internet Economy in Europe. Since a figure for 'the Internet Economy' would mean no more than say, 'the value of the retail industry', (i.e. it would not distinguish between investment in retail outlets, the profitability of the retail operators, or the value of goods traded), Gartner has used a four layer model, representing the different types of opportunity.

- Layer 1—infrastructure (revenues relating to the network, ISPs etc)

- Layer 2—applications (revenues from software applications which 'make it happen')
- Layer 3—intermediary layer (revenues of companies acting as intermediaries for goods and services via the Internet)
- Layer 4—commerce layer (the value of what actually gets sold on the Internet).

...Very big

Figure 3. The Internet Economy in Europe, 1999 to 2004

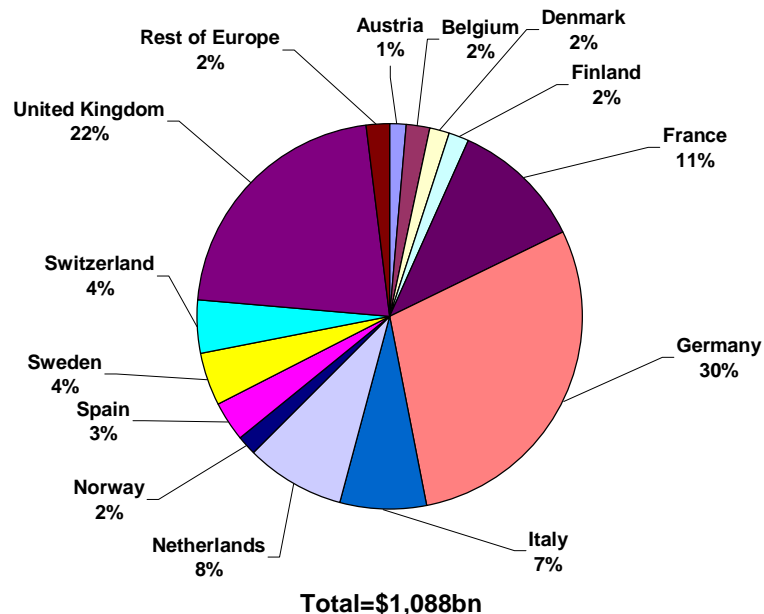


Note: Layer 3 numbers included in Figure 3 but are small relative to the other layers. See appendix for actual numbers for each layer

Source: GartnerConsulting

The European Internet Economy is forecast to grow from \$53 billion in 1999 to \$1,204 billion in 2004, a compound annual growth rate (CAGR) of 87 percent. Gartner expects that Internet commerce (Layer 4) will be the fastest growing layer, at 123 percent CAGR, as the Internet Economy moves from "build" to "build and use".

Figure 4. Layer four of the European Internet Economy by country, 2004



Note: See Appendix for Layer 4 forecasts (US\$) for each country

Source: GartnerConsulting

Figure 4 above shows the make-up of the Layer 4 (the measure of the extent to which the Internet is being used for commerce) by country in 2004. It shows that the four largest countries will account for 70 percent of the total, with Germany the largest market, with 30 percent of the total.

Table 1. European Internet Economy Growth Rates, 1999 to 2004

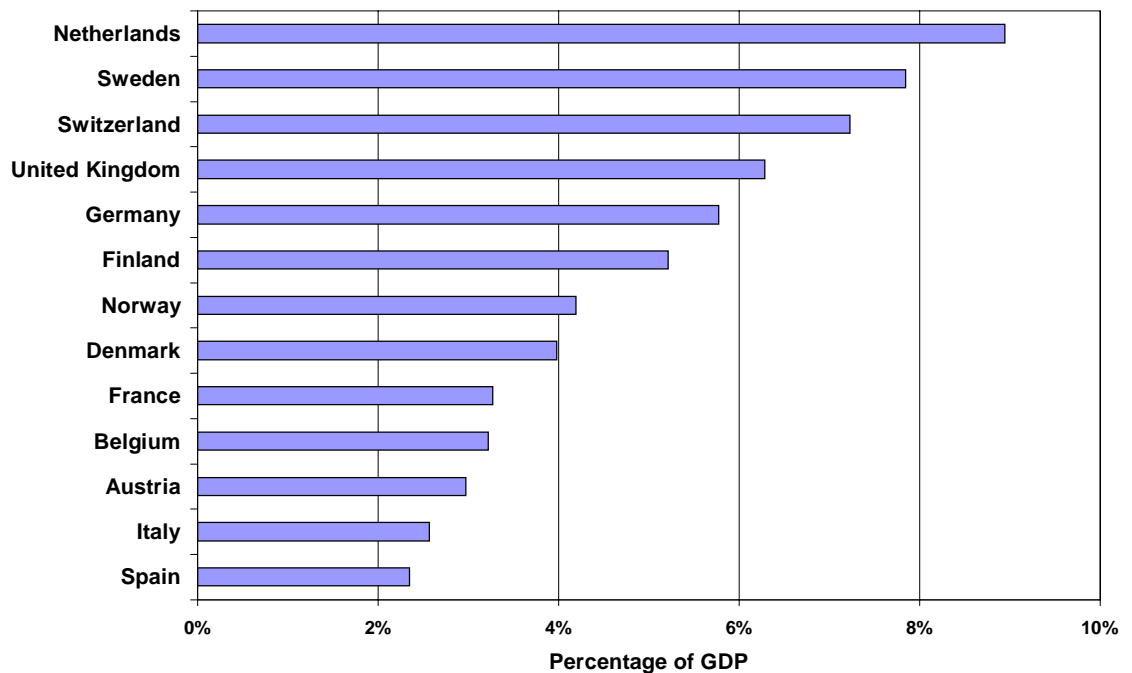
Country	CAGR
France	99%
Germany	88%
Italy	95%
United Kingdom	82%
Europe	87%

Source: GartnerConsulting

Table 1 shows that, of the four largest economies in Europe, Gartner expects that France will have the fastest growing Internet Economy, followed by Italy, Germany, and the United Kingdom.

The high volume, high growth countries are in line with expectation. Another way of looking at the value of the Internet Economy, however, is to compare it to national GDP. This provides a perspective on the significant proportion of the overall economy that is accounted for by the Internet Economy and delivers some surprising results.

Figure 5. E-commerce transactions in 2004 expressed as percentages of 1999 GDP



Note:

1. Gartner estimates of B2B and B2C E-commerce transactions adjusted to include only the added value at each transaction. See Appendix for more details
2. Based on GDP data for 1999 (source: OECD)—see appendix for more details

Source: GartnerConsulting

Figure 5 shows the widely differing percentages of 1999 GDP, that Layer 4 of the Internet Economy will represent for each of the major countries of Europe in 2004—from about 2 percent in Spain and Italy, to four times that figure in the Netherlands. Growth rates also vary, and some countries are slower than others in their take-up of e-commerce. Why such marked differences? Individual circumstances apply to many countries, for example:

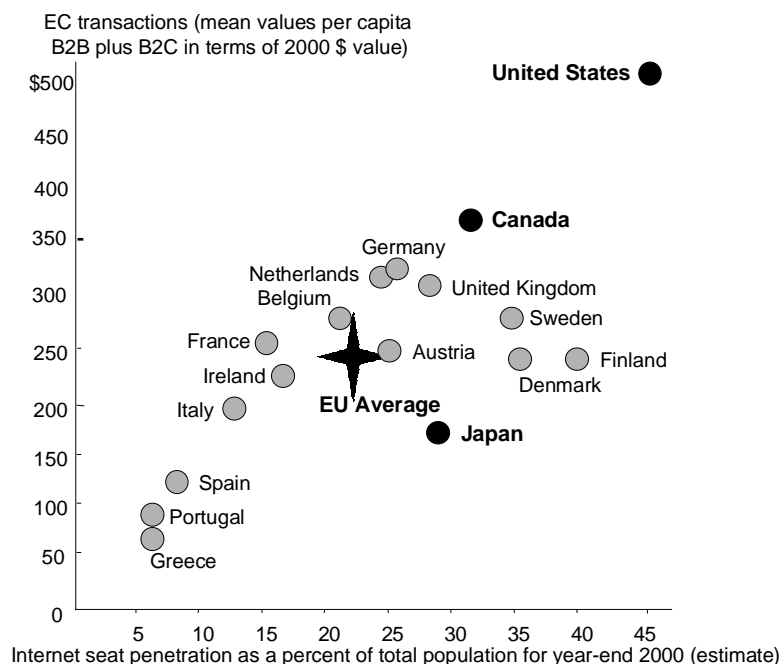
Netherlands	The Netherlands saw early Internet adoption and its historical role as (arguably) the leading distribution centre of Europe has encouraged many multinational companies to locate their e-commerce activity there, optimising their linkages with the physical distribution system. It has also benefited from the presence of IT manufacturing operations (the IT industry being an early B2B implementer).
United Kingdom	Take-up of Internet in the United Kingdom happened early and quickly, with the result that a slow-down in the growth rate will occur before other, 'later-developer' countries. Like the Netherlands it has significant IT manufacturing presence, and it has also benefited from its geographic role as a natural 'beachhead' for US businesses entering Europe.
Germany	Germany, too, was a relatively early Internet adopter. B2B has been boosted both by IT manufacturing and a number of large multinationals driving e-procurement (including in the automotive sector). Its large medium sized manufacturing sector is proving slower to adopt B2B.
France	A high growth Internet Economy that lags the leaders by about one year, primarily because Minitel functionality provided a forerunner of the B2C Internet experience, and delayed the need for Internet
Switzerland	Switzerland has been very fast to develop its Internet Economy, with major e-marketplaces bringing together buyers and sellers of pharmaceuticals and chemicals. Major initiatives in telecoms and air travel are also significant in driving B2B.
Italy	The low percentage of GDP in Italy is partly attributable to the demographics of its industry—a high percentage of very small companies that are, at present, not heavy investors in IT.

It is clear that straightforward valuations of transactions cannot tell us the whole story. A more sophisticated scheme is needed if we are to be able to compare progress between countries.

The E-Business Opportunity Index – measuring maturity

The Gartner e-business opportunity index has been developed by our analysts in order to compare the level of Internet business activity among different countries. It plots two measures; first, the number of people with access to the Internet, and second, the value of commercial transactions on a per-capita basis.

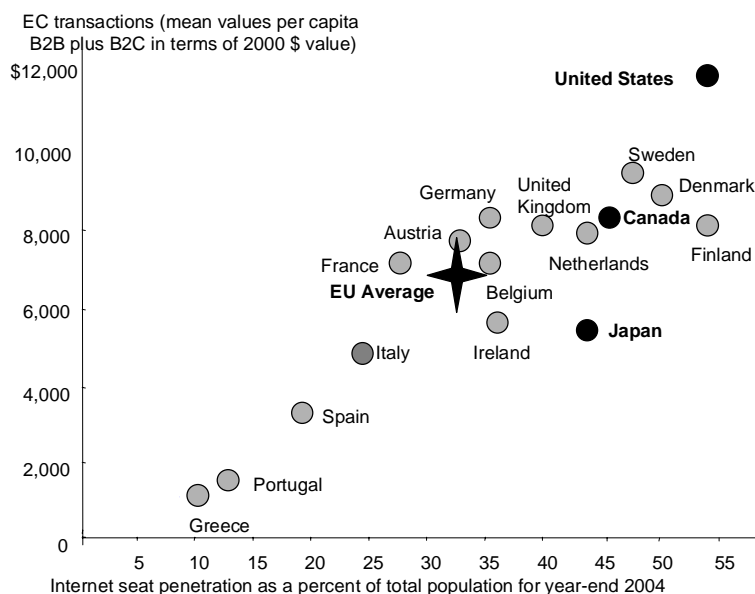
Figure 6. Gartner's E-Business Country Opportunity Index: 2000 (projected)



Note: The x-axis represents the percent of the adult population that has access to the Internet. The y-axis is an average value projection of total B2B and B2C E-commerce transactions, divided by the total number of people in the country. Non-Internet based consumer-oriented transactions — for example, Minitel transactions in France — are excluded. Equally, VAN-based financial clearing, money transfer and other traditional EDI transactions are excluded.

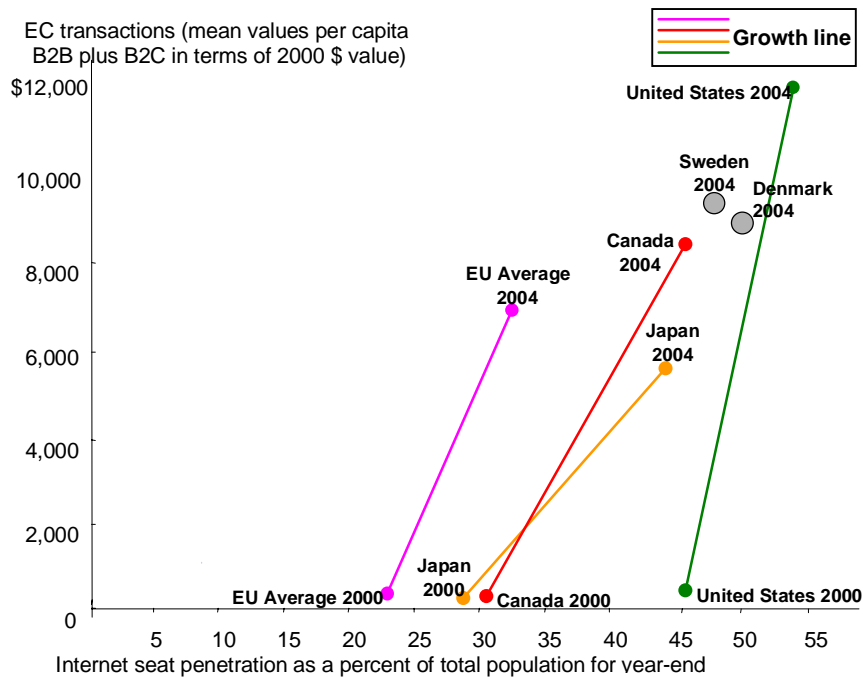
Source: Gartner Research

Figure 7. Gartner's E-Business Country Opportunity Index 2004 (projected)



Source: Gartner Research

Figure 8 Growth in E-Commerce Transaction Values, 2000 to 2004



Comments:

- (1) The similarity in layout between Figures 6 and 7 chart can easily **mask the scale of the growth** in commerce value over the period, as illustrated in Figure 8. Thus, the maximum Y-axis value grows from \$500 in 2000 to \$12,000 in 2004
- (2) EU growth will be such that per capita transactions in the leading EU country markets of Sweden and Denmark will accelerate past Canada to approach US levels by 2004

Source: GartnerConsulting

In 2000, the foundation is laid for explosive growth in Europe. Most European Union (EU) economies currently rank significantly below the United States on the e-business opportunity index. Only the Nordic economies have Web penetration near U.S. levels. E-commerce transactional values are only about 60 percent of U.S. levels in the United Kingdom, Germany and the Netherlands, the highest areas measured on a per-capita basis. E-commerce is in a nascent phase in the Mediterranean economies, keeping the overall EU average down. Overall B2B and B2C revenues in the EU are projected to be about 66 percent of U.S. levels.

However, the EU is fast catching the United States as a major e-business centre. EU member economies will achieve near-parity with the United States (80 percent or over) in total Internet-generated B2B and B2C E-commerce revenues by 2004. The shape of E-commerce in Europe will take on a slightly different form from that of the United States. Reflecting relative penetrations of PCs, mobile phones and TVs, proportionally more transactions in Europe will be conducted on non-PC devices such as mobile phones, other portable devices and Web-connected television.

On a per capita basis, the leading EU countries will approach US transaction levels by 2004, with less advanced countries by no means standing still – the increase in per capita transaction values for all EU countries over the next five years in all countries will be dramatic.

A tool for assessing national E-business maturity

Gartner's e-business opportunity index provides us with probably the first realistic assessment of the relative maturities of the Internet economies in Western Europe—a maturity index. It provides a valuable yardstick for national governments as they set policy and develop programmes to ensure their economies are not left behind by the Internet. For businesses (especially multinational companies) it provides a tool to assess the maturity of the Internet Economy in the territories in which they operate, and the opportunities and threats associated with other countries.

Why is this important?

Figure 5 has shown us why by 2004, the value of E-commerce transactions will represent a significant proportion of GDP. Governments will need to ensure that public policy takes account of this—the Internet Economy will be a major determinant of future economic growth. Gartner believes that, increasingly, the 2000 largest organisations will look to locate in 'net-friendly' environments, in order to take full advantage of the opportunities presented by the Internet. National governments implementing public policy that promotes workforce mobility and high Internet penetration will have a much better chance of attracting the net-liberated organisation of the future.

In Europe's Internet Economy, one size does not fit all

The survey demonstrated an overwhelming attitude of confidence towards the Internet across national, industry sector and company size boundaries. While there were variations by these segments they were slight. The survey did, however, reveal more significant differences in the behaviour of the companies surveyed.

Gartner found that the most consistent and useful observations came from combining companies into groups, rather than by individual country or industry. The country groupings, based on survey responses, aligned with Gartner's e-business opportunity index. The industry groups were defined as sharing a fundamental operational mode. These groups are shown in Table 2 below.

Table 2. Country and sector groupings

Grouping	Countries/sectors
Country	
Northern Europe	Nordic Countries, Netherlands, United Kingdom
Central Europe	France, Germany, Austria, Belgium
Mediterranean Europe	Italy, Greece, Spain, Portugal
Industry	
Plant Intensive	Process & Discrete Manufacturing
Money Intensive	Banking, Insurance, Wholesale
People Intensive	Service industries, Healthcare
Retail	Retail

Source: GartnerConsulting

Industry Variations

The survey revealed important differences in behaviour among respondent industries in their choice of Business Model (Figures 9 and 10 overleaf):

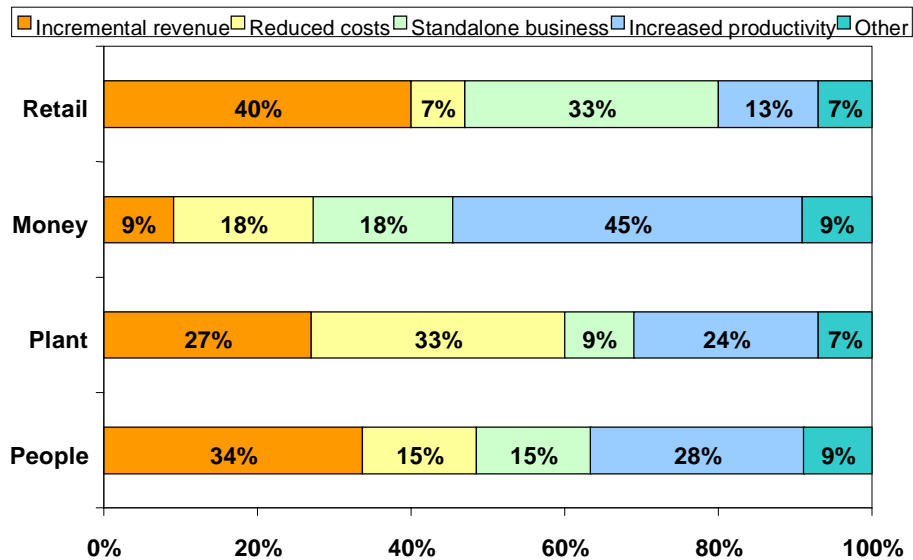
- Overall, 33 percent of financial services companies quoted 'improving customer services' (and through a more cost-efficient contact mechanism), as their key motivating driver for Internet activity compared with 23 percent for retailers.
- The position was reversed when retailers (44 percent) named 'increased sales' as their key driver, compared with 26 percent of financial services customers.

Money-intensive companies are less likely to use Internet for procurement (31 percent), but dot.coms are much keener (67 percent, against an average of 50 percent).

Plant-intensive companies are more focused on B2B marketing activity (particularly to larger business), and People-intensive organisations are looking to the Internet for a mix of incremental revenues and better customer service.

Financial Services companies are the biggest spenders on Web operations, whether they be brochureware or transactional. Dot.com companies are surprisingly frugal—nearly one third had spent less than \$50,000 on their Web operations.

Figure 9. Business Model Adopted For E-commerce by Industry Group, Brochureware



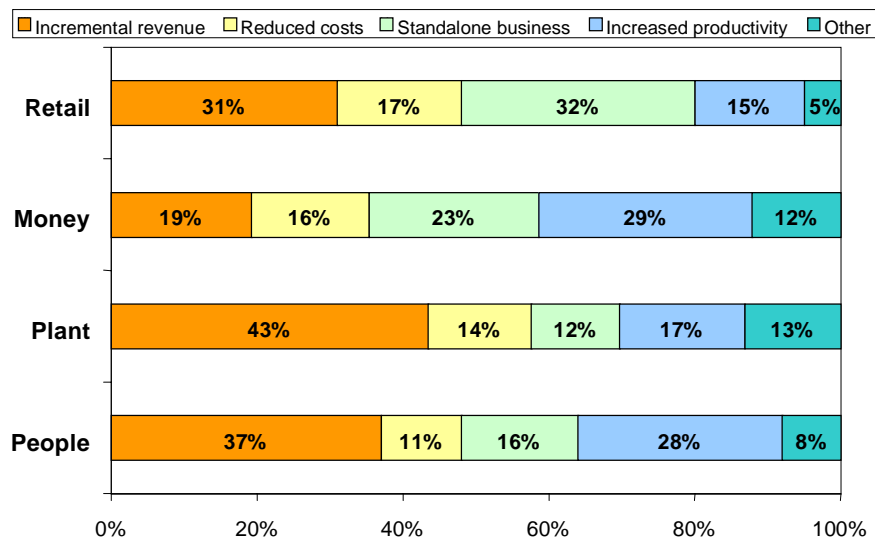
Note:

1. This figure shows the underlying business model for brochureware companies planning E-commerce operations. For example, 40 percent of retail companies identified incremental revenue as the underlying model, 7 percent said the model was reduced costs, and so on

2. Sample size=132

Source: GartnerConsulting

Figure 10. Business Model Adopted for E-commerce by Industry Group, Hybrids



Note:

1. This figure shows the underlying business model for the E-commerce operations of hybrids. For example, 31 percent of retail companies identified incremental revenue as the underlying model, 17 percent said the model was reduced costs, and so on

2. Sample size=443

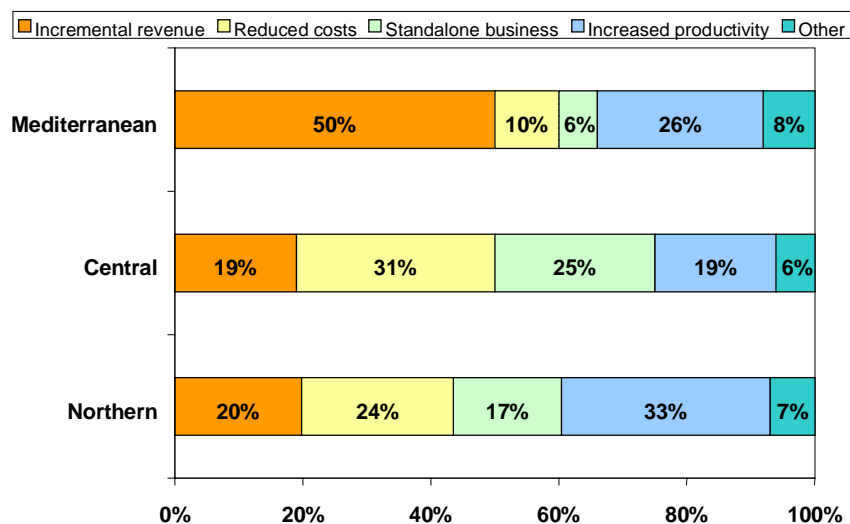
Source: GartnerConsulting.

Regional Variations

Mediterranean countries are more focused on B2C activity (63 percent of respondents in those countries compared with a 52 percent overall average), and more driven by increasing sales volume than customer service (34 percent vs 20 percent). They also have a greater propensity to outsource elements of their Web site.

Companies in Northern Europe are mainly driven by the desire to gain incremental revenues, and those in Central Europe by improving levels of customer service. Figures 11 and 12 below show the variation in the choice of business model elected by Brochureware and Hybrid respondents in the three sub-regions:

Figure 11. Business Model Adopted for E-commerce by Regional Group, Brochureware

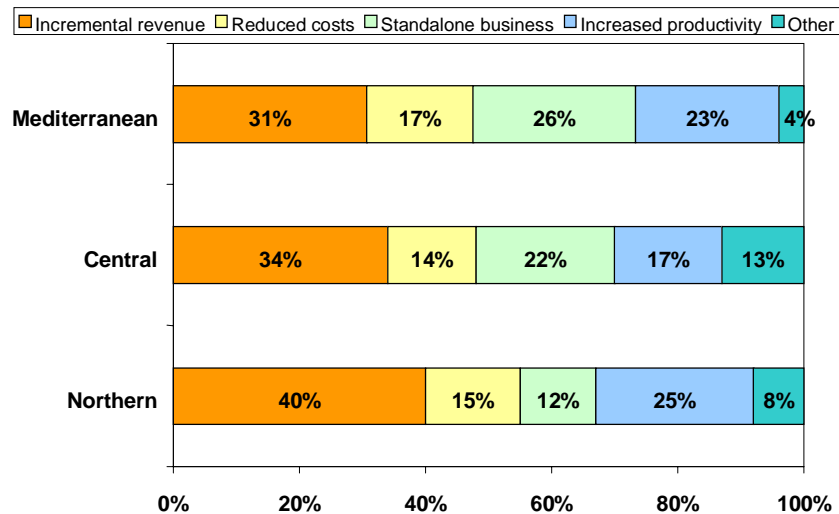


Note:

1. This figure shows the underlying business model for brochureware companies planning E-commerce operations. For example, 50 percent of Mediterranean companies identified incremental revenue as the underlying model, 10 percent said the model was reduced costs, and so on
2. Sample size=132

Source: GartnerConsulting

Figure 12. Business Model Adopted for E-commerce by Regional Group, Hybrids



Note:

1. This figure shows the underlying business model for the E-commerce operations of hybrids. For example, 40 percent of Northern companies identified incremental revenue as the underlying model, 15 percent said the model was reduced costs, and so on
2. Sample size=443

Source: GartnerConsulting

A pattern of growing maturity

The survey highlighted the speed at which the Internet Economy is maturing. A key indicator was that the majority of Brochureware companies interviewed had formal plans to offer transactional facilities, the timescale for most being less than 3 months from the date of interview. Retailers are the most likely to have firm plans for a transactional Web site (71 percent against 49 percent average).

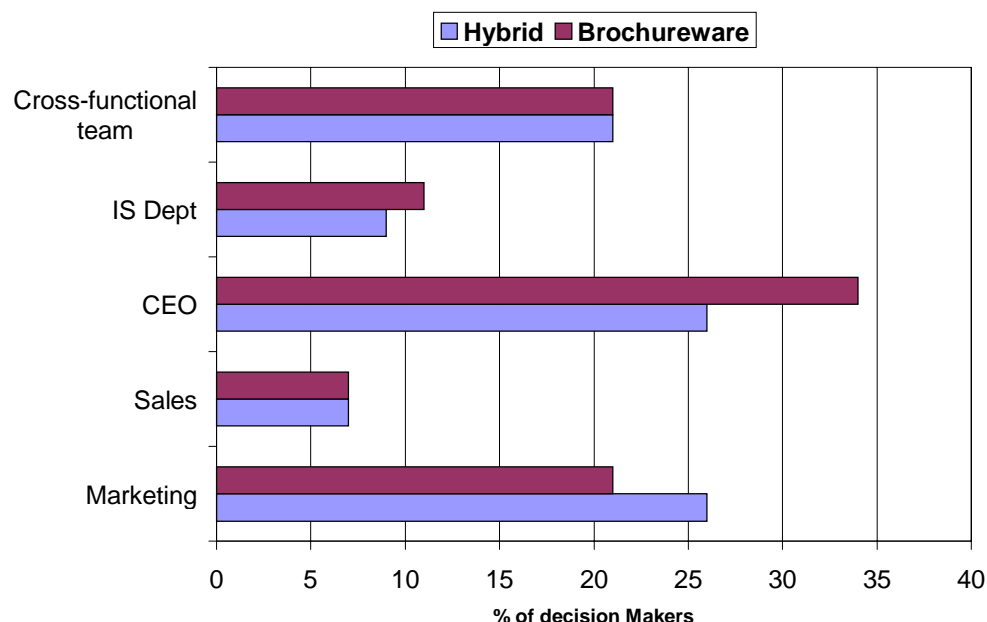
Of those claiming that they had no such plans (46 percent of brochureware companies), the majority (61 percent) cited 'no business justification' as the reason. Gartner interprets this as representing uncertainty as to when to take action, rather than overt hostility toward the concept.

The survey shows, too, that brochureware companies understand what they have to do. The plans they described for transactional sites, and the expectations they had of them, aligned to a very high degree with the actual operations of those already carrying out transactions (the hybrids). For example, this is evident in the high degree of correspondence in Web site functionality, the applications integrated with the Web site, and propensity to outsourcing.

Growing maturity is also illustrated by the degree to which Internet activity is now business-driven, rather than IT-driven. Most respondent companies named 'the person responsible for Internet activity' as the CEO, Marketing Director, or (more common in larger companies), a cross-functional team reporting to the

CEO. For example, only 9 percent of Hybrid companies reported that their IT department was the primary Internet decision maker. The chart below demonstrates the consistency of decision-maker between Brochureware and Hybrid companies.

Figure 13. Internet Decision Makers



Note: sample size=575

Source: GartnerConsulting

Common attitudes – variations in behaviour

To summarise, therefore, the survey shows a common picture, with only very minor variation, in the attitudes of respondents, recognising that the Internet Economy is here to stay. There are differences in behaviour, however, by particularly by geography and industry sector, showing themselves in factors such as the primary business model drivers associated with Internet adoption. One size does not fit all in Europe's evolving Internet Economy. It is also clear that Brochureware companies are following a similar path to maturity as those businesses that are already operating as hybrids.

Dot.com—not the only fruit

Media discussion of the Internet can sometimes appear to be focused on the fortunes of the dot.com companies (and, in a slightly different sense, those of their founders).

Gartner is convinced that this is a misleading picture of the *real* Internet Economy. The Internet operations of 'bricks and clicks' or hybrid companies, appear to attract the same level of buyer interest and activity as the dot.coms, but being built on an existing business infrastructure, can contribute to the business earlier and

more significantly. The bulk of B2B commerce (layer 4 B2B of \$980 billion in 2004) is driven by hybrid businesses, not dot.coms (74 percent of dot.coms surveyed claimed consumers as their primary audience). Gartner would like to see more focus on the successful Internet activity of conventional businesses. While we wait for the dot.coms to return a profit, others are quietly getting a good return on their Internet investment.

What does the investment community think?

Our discussions with venture capital companies revealed that they too are still convinced of the Internet's longevity. Post Black Tuesday, plans are being assessed and investments still being made. Indeed, as one company put it, *"Money is not a problem—funds are abundant at the moment"*.

Venture capital companies are increasingly investing in all aspects of the Internet Economy, not just dot.com. In 1999, investments in the communications sector alone exceeded \$2 billion, an increase of 12 percent on the previous year (Source: European Venture Capital Association). Indeed, the majority of the companies claimed not to focus on particular dot.com segments, although Gartner believes there is a growing preference for investments in B2B over B2C.

Venture capital companies are assessing dot.com investment opportunities using a range of criteria, the most important of which is the quality of the management. They will assess the proposed team against a number of factors including:

- Previous experience of starting a company and taking it to IPO
- Relevant sector experience; clarity of vision
- Credibility
- A willingness to listen and take advice.

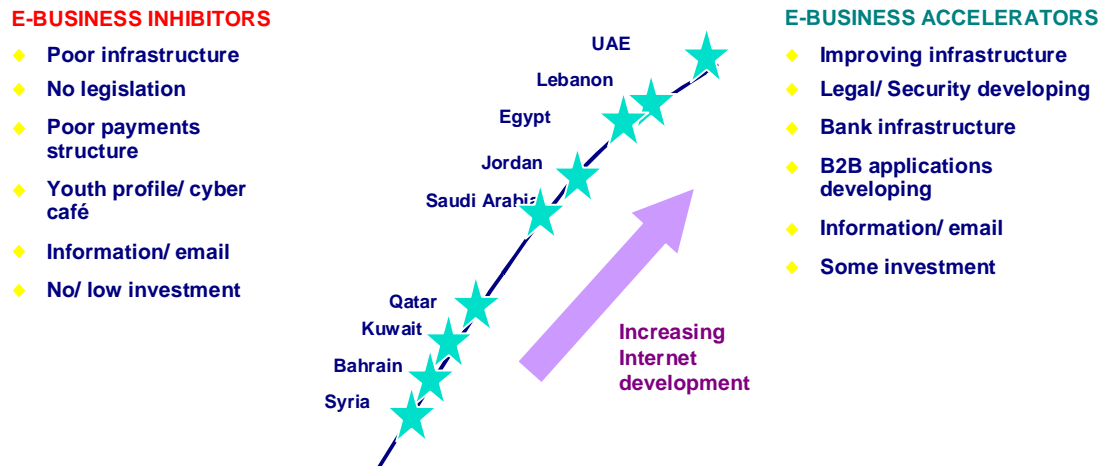
Of course, other criteria (such as, the quality of the business plan, the size of the market opportunity, and the uniqueness of the product/service) are also important. Ultimately, however, the decision to invest can rest on other, softer, factors. As one company put it, *"It comes down to a gut feel of whether the chemistry is right between us"*.

So, the enthusiasm of companies engaged in Internet commerce, and of the venture capitalists, belies the negative publicity that the Internet has been attracting.

The fringes are different

Middle East

Figure 14. E-business Adoption in the Middle East



Source: GartnerConsulting

The Middle East can be divided into two distinct regions—the Gulf States (including Saudi Arabia), and the other Arab Nations. Overall, the other Arab Nations are probably at a higher stage of maturity although still significantly behind both Western (and indeed, Eastern) Europe. Figure 14 shows the two sets of key drivers at work in each sub-region.

In each region there are leaders and laggards determined by the regions' key drivers, namely the strength of Government and business involvement as well as the quality of the Telecommunications infrastructure.

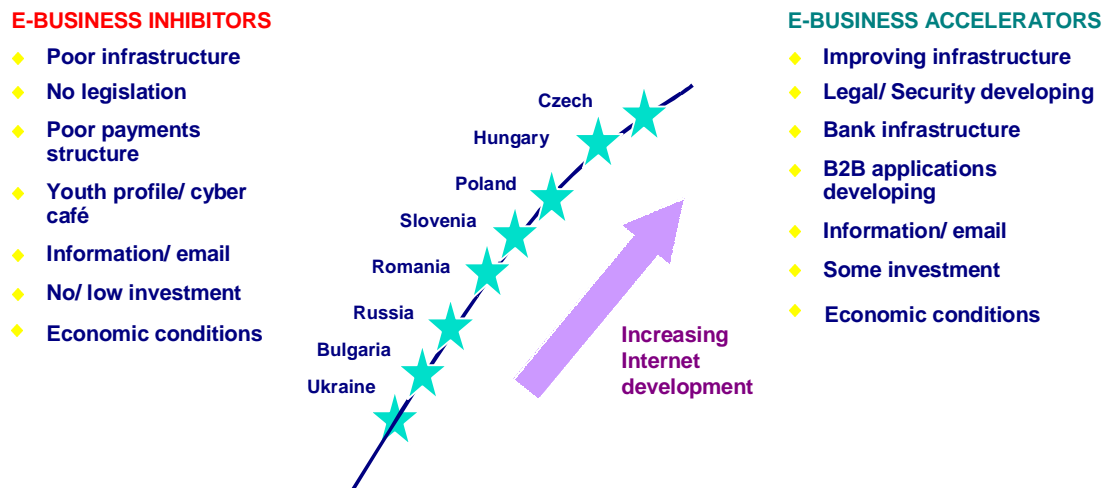
Internet in the Middle East is developing, albeit slowly. In comparison to Western Europe, the region is constrained by strong political and cultural barriers that are manifested in what respondents described to us as censorship and a fragmented pattern of market deregulation. This is particularly the case within the Gulf States. In all cases development is constrained by the ISP and Telecommunications monopolies and the variable quality of the Telecommunications infrastructure, and in some cases by the wealth of the country.

Unlike Western Europe, the business and commercial drivers are less apparent with access in the Gulf States consumer-dominated. Indeed, business access is confined to defined, predominately foreign-owned companies, and even then it is mostly used for information gathering and communication rather than for transactional services.

In the other Arab nations, a more entrepreneurial approach is driving awareness and dot.com activity, which we see in turn as likely to deliver additional stimulus to the overall development of the Internet Economy in the region.

Eastern Europe

Figure 15. E-business Adoption in Eastern Europe



Source: GartnerConsulting

In each of the three regions surveyed (i.e. CIS, East Europe & Balkans), as in the Middle East, there are leaders and laggards determined by the regions' key drivers (see Fig 15 above), namely the general state of the economy, and the quality of the Telecommunications and Banking infrastructures.

The leaders are the Eastern European States - Czech Republic, Hungary and Poland - and Slovenia within the Balkan Republics. In addition, there is some indication of regionalisation with the main cities of the CIS, Moscow and Kiev, at a higher stage of maturity. By contrast the laggards are the CIS States (Russia and the Ukraine) and the Balkan republics (Bulgaria, Romania).

Overall, the region is going through a period of variegated development at a medium or slow pace, rather than the fast-moving evolution of Western Europe. There is also a clear disparity between the comparatively faster-moving Eastern European States and the less developed Balkan and CIS regions. In some cases there are indications that this is a platform for revolutionary expansion as has been seen in Western Europe (e.g. Czech Republic) but there are still significant barriers to overcome before this growth pattern is obtained.

In the leading regions the main barriers include the monopolistic conditions leading to high call charges and the lack of an effective regulatory regime, even though the Telecommunications infrastructure is adequate.

As in Western Europe, commercial drivers are to the fore with business access more significant than consumer, over all regions. Indeed, the leading Eastern European states have already attracted investment funds to develop the

commercial environment. A further key driver is the health of the general economy which has significantly reduced the laggards ability to grow and attract investment.

As a result of its less mature state of development the Internet is used for information gathering and communication rather than for transactional services in the laggard states. By contrast the leading states increasingly display similar characteristics to Western Europe, with the Internet used for both information and order/payments.

South Africa

The survey also interviewed businesses in South Africa. Responses highlighted the impact of the current telecommunications regime, which has yet to make the transition to an open competitive market that has largely taken place in Western Europe. Thus, compared to survey averages, there was a higher level of agreement with the 'conservative' statements that the government was not yet doing enough and that the telecommunications infrastructure was inadequate.

Similarly, the greater emphasis placed by respondents on the role of wireless telephony Internet access (now) and interactive television (in future) as channels to market are indicative of the lower relative overall levels of PC penetration and PC-based Internet access compared to Western Europe. In other responses (e.g. in the emphasis on a standalone model for Internet business), South African interviewees aligned with a number of the characteristics of the Mediterranean nations – indicating a lower level of Internet Economy development than average for Western Europe.

Conclusions

What is fuelling the Internet Economy in Western Europe?

Building on the results of this survey and its ongoing research, Gartner believes that nations need to encourage and develop six key factors in order to provide the groundwork for a fast-growing and viable Internet Economy.

Awareness & Education

A high and sustained level of interest in the Internet, and the degree of computer literacy of the population, not just that of the *school* population, are clear prerequisites for a burgeoning Internet Economy.

Market economy

Internet commerce promotes and promises choice, and fulfillment of choice generally requires a market-based economy, i.e. one that features fair competition, limited government intervention and the free passage of goods and services across borders.

Legislative & Regulatory framework

A legal framework that allows unfettered access to the Internet, and that enacts laws which recognise the status of on-line commerce, is a key driver.

Telecoms Infrastructure

In order to make the Internet widely accessible, acceptable level of access cost must be achieved. In most cases, this will require a deregulated and competitive telecommunications industry, ensuring (for example) local loop unbundling, and transparent interconnect arrangements. Quality and reliability of access are key factors.

Access equipment penetration

Low-cost devices such as TV and telephone are now all that is needed to access Internet, and this will accelerate growth. Likewise, the rapid adoption rates of mobile telephony that are apparent in many countries will also have a positive influence on Internet commerce.

Appropriate Payment Systems

Internet commerce cannot use cash, and so debit & credit cards, electronic wallets etc all need to be available and to be trusted. Banks can do a great deal to persuade potential users to use the Internet, by limiting user liability to fraud.

What's holding it back?

Countries where Internet is still in its infancy can generally look to a failure or unwillingness to address one or more of the factors listed above. The reasons for that failure or unwillingness are generally to be associated with one or more of the following factors; a low level of distributed wealth, a culture that is suspicious of the Internet and its perceived impact, and something as simple as an inefficient telephone system.

The "Net" effect is...

Gartner has observed the countries of Western Europe moving (at different rates, but still irreversibly moving) towards an Internet Economy that will serve to act as a mechanism for conducting a significant portion of national GDP within the next five years (over 9 percent in Netherlands in 2004).

The Internet Economy is now a fact of life. It is here to stay. It is already large and growing at very, very rapid rate. The Internet revolution is now steadily giving way to Internet evolution.

Such a force deserves careful treatment. It must be calibrated and monitored by governments, and by major corporations, to ensure that they are not being left behind. Gartner's E-business opportunity index provides a way of analysing the net effect of the drivers and barriers described above. Countries that were slow in building ports, airports, road systems were not as successful as those that did so quickly. An Internet infrastructure is just that—an infrastructure and one that deserves to attract as much attention as the more tangible ones.

Finally, as the Internet Economy continues to take shape across Europe, the challenge for business today seems clear. With rapid adoption in the mainstream, European businesses need to engage rapidly or risk being displaced – most likely not by dot.coms but by faster moving existing competitors. In other words, they need to stop worrying about being “Amazoned” and start worrying about being “Schwabed”.

Appendix

Internet Economy Sizing

This appendix describes the approach used by Gartner to size the Internet Economy.

Layer 1: Infrastructure

Layer 1 is hardware and telecommunications infrastructure for the Internet Economy. Specifically, it includes:

- National and regional backbone revenues
- ISP revenues
- Network equipment revenues
- Server and client hardware revenues.

As such, it includes the European Internet-derived revenues of companies such as BT, PSI, Cisco, Dell, and Compaq in the relevant areas.

The numbers for layer one have been derived by synthesising statistics/forecasts from a range of Gartner services, specifically:

- Gartner's e-Business Resource Center- Market Intelligence and Dataquest Programs
- Gartner Telecoms Programs
- Gartner PC Programs
- Gartner Internet and PC Tracking Programs
- Gartner Server Programs
- Gartner Services Programs.

In each case, Gartner analysts have employed evidence from research and their judgement to estimate the percentage of revenues from equipment (e.g. home PCs) that should be allocated to the Internet Economy. The approach adopted has been that unless the primary use of the equipment is Internet related, revenues relating to it have been excluded.

Gartner has looked at revenues earned in Europe, regardless of the country of origin of the vendor.

Layer 2: Applications

Layer 2 is Internet-related software and services, specifically including:

- Internet consulting revenues
- Internet commerce application software revenues
- Multimedia applications software revenues

- Web development software revenues
- Web hosting and support services revenues.

As such, this will include the relevant revenues of companies such as Scient, Ariba, Real Networks, BEA and telcos/ISPs. Revenues associated with search engine software, on-line training, Web-enabled databases, network operating systems software, and transaction processing companies, are excluded.

As with Layer 1, the numbers have been derived from existing Gartner programmes (as above), and sizing and forecasting have been limited to software and services specifically related to Internet use.

Layer 3: Intermediaries

Layer 3 comprises Internet intermediaries, specifically including:

- E-market makers
- On-line travel agencies and on-line brokerages
- Content aggregators
- Portals/content providers
- Internet advertising brokers
- Internet advertising
- Web virtual malls.

Thus, this layer includes businesses such as the BT Commerce One Marketsite, Travelocity, Yahoo, and Egg's mall.

Numbers are derived from existing Gartner programmes and additional surveying which will be fed into a range of individual programmes.

Layer 4: Internet Commerce

Layer 4 is commerce conducted over the Internet, specifically including:

- E-tailing transactions
- Manufacturers selling direct
- Transportation service providers sales over the Web
- On-line entertainment and professional services
- Shipping services.

As such, this includes transactions carried out over the Web by companies such as Amazon, Cisco, and UPS. Two points are important to note, however:

- There is some overlap between this layer and others, as Internet-related products and services transacted over the Web in Layers 1 and 2 will be included both in that layer and in this.

- Gartner has taken the full value of each transaction conducted over the Internet. This means that as components move up a supply chain, each time they are involved in a transaction, the full value of that transaction is captured. Thus, the Gartner approach would include, for example, the full value of the transactions involved in the online sales of rubber to a wiper blade manufacturer; the blade to the wiper manufacturer; the wiper assembly to the car OEM; and the car over the Web to the consumer.

An alternative approach is to include only the value added at each transaction. This makes it easier to compare the scale of the Internet Economy to other sectors or to national GDP that would be measured in the same way. On the other hand, it masks the true scale of transactions being carried out. Gartner uses a factor 2.6 (the 'kerching' factor) as indicative of difference in scale between the two approaches

The numbers for this layer have been derived from survey work for UK, France, Germany, Italy, Spain, Netherlands, Sweden; from demographics for Finland, Norway, Denmark, Austria, Belgium, Switzerland; and from modeling for Portugal, Greece, Ireland, Luxembourg. They are shown in the table below.

Table A-1. Layer 4—value of E-commerce sales transactions in Europe, 1999 to 2004 (US\$ billions)

Country	1999	2000	2001	2002	2003	2004
Austria	0.23	0.40	0.72	1.86	5.49	16.09
Belgium	0.11	0.25	0.67	2.11	6.79	20.81
Denmark	0.25	0.52	1.08	2.84	7.78	18.04
Finland	0.23	0.43	0.91	2.82	7.58	17.59
France	1.24	2.71	5.95	18.39	50.06	121.75
Germany	6.20	12.61	24.73	64.23	153.81	317.07
Italy	0.27	0.72	2.06	7.19	27.56	78.23
Netherlands	2.80	5.69	10.40	24.20	48.49	91.59
Norway	0.22	0.41	0.82	2.15	6.40	16.67
Spain	0.24	0.61	1.57	4.60	12.70	36.39
Sweden	1.13	2.17	4.06	10.06	23.39	48.70
Switzerland	1.05	2.23	4.46	11.39	24.37	48.67
United Kingdom	5.68	11.78	23.27	59.6	127.53	235.56
Rest of Western Europe	0.08	0.18	0.48	1.09	2.47	6.77
Central & Eastern Europe	0.13	0.26	0.55	1.37	4.52	14.65
Total Europe	19.70	40.79	81.57	213.75	508.80	1,088.43

Note:

1. Figures are the total of B2B and B2C sales transactions
2. Figures are in billions, to convert to millions, multiply by 1000 e.g. Layer 4 value for Austria in 1999 is 230 million

Source: Gartner

Table A-2. Layers 1 to 4—The Internet Economy in Europe, 1999 to 2004 (US\$ billions)

Country	1999	2000	2001	2002	2003	2004
France	4.42	8.4	14.29	29.22	63.09	136.75
Germany	14.65	25.99	42.09	85.42	178.27	344.09
Italy	3.19	5.80	8.99	15.95	38.02	90.25
United Kingdom	12.75	22.94	37.34	76.68	147.24	257.49
Europe	52.52	93.34	151.82	301.16	611.45	1,203.83

Source: Gartner

Table A-3. GDP, 1999 (US\$ bn)

Country	1999
Austria	208.2
Belgium	248.4
Denmark	174.3
Finland	129.7
France	1432.3
Germany	2112.0
Italy	1171.0
Netherlands	393.7
Norway	152.9
Spain	595.9
Sweden	238.7
Switzerland	259.1
United Kingdom	1441.8

Source: OECD