eMarketer...

Europe E-Commerce: B2B & B2C July 2003



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	Methodology	7
	The eMarketer Difference	8
	The Benefits of eMarketer's Aggregation Approach	9
	"Benchmarking" and Projections	9
I	Technology Infrastructure	11
	A. Europe in the Global Context	12
	IT Spending	12
	IT Hardware	16
	IT Software	19
	IT Services	22
	Telecommunications Spending	25
	E-business	29
	B. IT Spending Forecasts: Europe	30
	C. IT Spending Growth Rates: Europe	33
II	Internet Usage	37
	A. Internet Users in Europe	38
	Central and Eastern Europe	39
	Western Europe	42
	Total E-Commerce	49
IV	B2C E-Commerce	53
	A. General Trends	54
	B. Revenue Projections	56
	European Forecast	57
	C. Online Shoppers and Buyers	60
	Online Shoppers	60
	Barriers to Shopping Online	64
	Online Buyers	66
	Category Review	70
	Other Retail Categories	76

D. Non-Internet E-Commerce	84
Mobile Commerce	84
Television Commerce	86
V B2B E-Commerce	89
A. Revenue Forecasts	90
B. Stage of E-Business Development	92
C. Use of E-Business Software and Services	98
Revenue Forecasts	98
Adoption Rates	99
Integration	102
D. Buy- and Sell-Side E-Business Initiatives	104
Buy-Side	104
Sell-Side	109
E. Participation in Online Exchanges	111
Leading European Exchanges	117
Index of Charts	121



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July 2003

Welcome to eMarketer

Dear Reader:

The July 2003 *Europe E-Commerce: B2B & B2C*TM report continues eMarketer's focus on the major trends and projections for one of the most robust Internet markets in the world.

Along with its companion report, *Europe Online: Access, Demographics & Usage*, released in March 2003, *Europe E-Commerce* provides readers with top-level data and comparative estimates about both the maturing Western European and developing Eastern European markets. The four major sections cover Internet usage, business-to-consumer and business-to-business e-commerce and IT spending.

The *Europe E-Commerce* report is a critical tool for those decision-makers who have an interest in monitoring the current and future performance of online shopping and procurement in Europe.

If you have any questions or comments concerning eMarketer or any of the material in this report, please call, fax or e-mail us.

Ross Rubin Senior Analyst

Written by Ross Rubin

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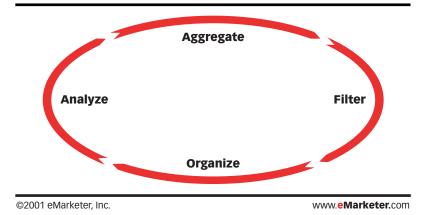
	Methodology	7
	The eMarketer Difference	8
	The Benefits of eMarketer's Aggregation Approach	9
	"Benchmarking" and Projections	9
I	Technology Infrastructure	11
II	Internet Usage	37
	Total E-Commerce	49
IV	B2C E-Commerce	53
V	B2B E-Commerce	89
	Index of Charts	121

Technology Infrastructure Internet Usage Total E-Commerce B2B E-Commerce B2B E-Commerce Index of Charts eMarketer's approach to market research is founded on a philosophy of aggregating data from as many different sources as possible. Why? Because there is no such thing as a perfect research study and no single research source can have all the answers. Moreover, a careful evaluation and weighting of multiple sources will inevitably yield a more accurate picture than any single source could possibly provide.

The eMarketer Difference

eMarketer does not conduct primary research, it therefore has no testing technique to defend, no research bias and no client contracts to protect.

eMarketer prepares each market report using a four-step process of aggregating, filtering, organizing and analyzing data from leading research sources worldwide.



Using the Internet and accessing a library of electronically-filed research reports and studies, the eMarketer research team first aggregates publicly available e-business data from hundreds of global research and consultancy firms. This comparative source information is then filtered and organized into tables, charts and graphs. Finally, eMarketer analysts provide concise and insightful analysis of the facts and figures along with their own estimates and projections. As a result, each set of findings reflects the collected wisdom of numerous research firms and industry analysts.

"I think eMarketer reports are extremely useful and set the highest standards for high quality, objective compilation of often wildly disparate sources of data. I rely on eMarketer's research reports as a solid and trusted source."

- Professor Donna L. Hoffman, Co-Director, eLab, Vanderbilt University

Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts

The Benefits of eMarketer's Aggregation Approach

Objective: information is more objective than that provided by any single research source Comprehensive: gathered from the world's leading research firms, consultancies and news organizations Authoritative: quoted in leading news publications, academic studies and government reports All in one place: easy to locate, evaluate and compare Readily accessible: so you can make quick, better-informed business decisions

Above the hype: accurate projections that business people can use with confidence

Time saving: there's no faster way to find Internet and e-business stats, online or off

Money saving: more information, for less, than any other source in the world

"Benchmarking" and Projections

Until recently, anyone trying to determine which researcher was most accurate in predicting the future of any particular aspect of the Internet did not have a definitive source with which to do this. For instance, over 10 firms predicted e-commerce revenues for the fourth quarter 1998 online holiday shopping season, and yet no single source could be identified after the fact as having the "correct" number. In the Spring of 1999, however, the US Commerce Department finally began measuring e-commerce B2C activity so business people and others could have a benchmark with which they could compare and evaluate projections.

eMarketer has adapted its methodology to recognize that certain government and other respected, impartial sources are beginning to provide reliable numbers that can be consistently tracked over time. Most of these established sources, however, only measure past results; typically, they do not make predictions.

Technology Infrastructure Internet Usage Total E-Commerce B2B E-Commerce B2B E-Commerce Index of Charts Today, eMarketer formulates its essential e-business numbers by first identifying the most established, reputable source for a given sector being measured and then adopting that organization's figures as *benchmarks* for the historical/current period. For instance, eMarketer's US Internet user figures will be based on a combination of the most recent data from the US Census Bureau and the International Telecommunication Union. Using this data as the benchmark for 2000 and 2001, eMarketer will make projections for subsequent years based on the following factors:

- a comparative analysis of user growth rates compiled from other research firms
- additional benchmark data from Internet rating firms, e.g., Nielsen//NetRatings, comScore Media Metrix, which use panels to measure Internet user activity on a weekly and monthly basis
- an analysis of broader economic, cultural and technological trends in the US

Similarly, US e-commerce revenues are being "benchmarked" using historical data from the US Department of Commerce, and broadband household and penetration rate forecasts are being built off baseline data from the Organization for Economic Cooperation and Development (OECD).

Through this benchmarking process, eMarketer will be holding itself – and its projections – accountable.

"When I need the latest trends and stats on e-business, I turn to eMarketer. eMarketer cuts through the hype and turns an overabundance of data into concise information that is sound and dependable."

- Mark Selleck, Business Unit Executive, DISU e-business Solutions, IBM

Methodology	7
I Technology Infrastructure	11
A. Europe in the Global Context	12
B. IT Spending Forecasts: Europe	30
C. IT Spending Growth Rates: Europe	33
II Internet Usage	37
III Total E-Commerce	49
IV B2C E-Commerce	53
V B2B E-Commerce	89
Index of Charts	121

Methodology Technology Infrastructure

Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts

IT spending information is valuable for two reasons. First, it provides insight into an important market sector for the region. Second, it also serves as an indicator of the overall health and direction of the tech economy.

"The EU accession countries start off with low credit card penetration, low home PC penetration, and a high fear level about fraud and limited online tenure. It will take these countries some years to get close to the levels of online activity we see among current EU members."

- Michele Poliziani, analyst, Aqute Research

A. Europe in the Global Context

IT Spending

The Aberdeen Group projects worldwide IT spending of \$1.23 trillion for 2002 and \$1.29 trillion for 2003. Between 2001 and 2005, the Aberdeen Group estimates that worldwide IT spending will increase by a compound annual growth rate (CAGR) of 4.3%. Europe is expected to account for 29% of this expenditure, trailing only North America.

Worldwide IT Spending, by Region, 2000-2005 (in billions)

	2000	2001	2002	2003	2004	2005
Africa/Middle East	\$30.9	\$32.0	\$34.1	\$35.9	\$37.8	\$39.8
Asia-Pacific	\$250.6	\$251.8	\$258.1	\$274.5	\$292.4	\$310.9
Europe	\$375.6	\$377.4	\$384.6	\$393.1	\$402.0	\$410.5
Latin America	\$65.6	\$65.7	\$68.4	\$72.9	\$78.2	\$83.5
North America	\$477.4	\$475.7	\$494.6	\$522.3	\$550.2	\$578.2
Worldwide total	\$1,200.1	\$1,202.6	\$1,239.8	\$1,298.7	\$1,360.6,	\$1,422.9

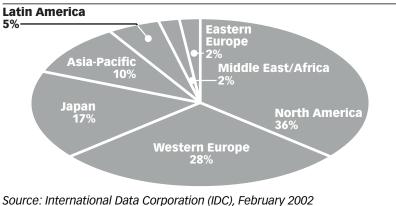
Source: Aberdeen Group, August 2002

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Methodology Technology Infrastructure Internet Usage Total E-Commerce B22 E-Commerce B2B E-Commerce Index of Charts

According to the International Data Corporation (IDC), Europe accounted for 30% of worldwide IT spending in 2001, ranking it as the second largest regional market. The World Information Technology and Services Alliance (WITSA), a consortium of 50 IT industry associations from around the world, has noted that North America has lost 1% of its global market share between 1999 and 2001, as the Asia-Pacific region and Eastern Europe have increased their spending on information technology.

Worldwide IT Spending, by Region, 2001 (as a % of total IT spending)



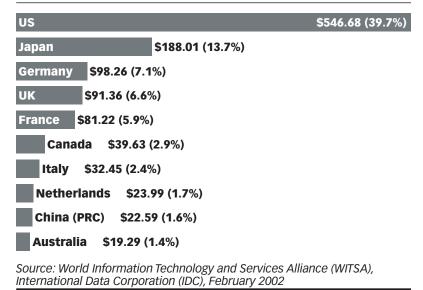
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Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce

Index of Charts

Germany, the United Kingdom and France are among the top five national markets for information technology in the world. The top 10 countries accounted for 83% of the estimated \$1.38 trillion in IT spending worldwide in 2001.

Worldwide Information Technology Spending, by Country, 2001 (in billions and as a % of spending worldwide)

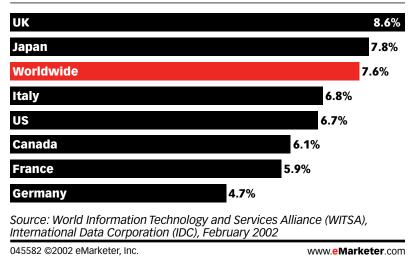


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Among the G-7 countries, growth in information and communication technology (ICT) spending ranged from 4.7% in Germany to 8.6% in the United Kingdom between 1993 and 2001, with Japan posting healthy growth of 7.8%.

Growth in Information and Communication Technology Spending among the G-7 Countries, 1993-2001 (ranked by CAGR)

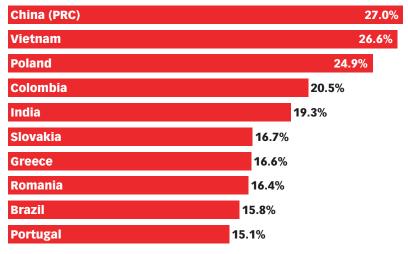


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Methodology Technology Infrastructure Internet Usage Total E-Commerce B2B E-Commerce Index of Charts

WITSA estimates that ICT spending increased by a CAGR of more than 14% in Eastern Europe between 1993 and 2001, outpacing growth in both Asia-Pacific and Latin America, which came in at approximately 12% and 11%, respectively. ICT spending in Eastern Europe has accelerated during the past two years in particular, with the Czech Republic, Poland and Hungary showing the largest jumps in technology spending.

Fastest Growing Information and Communications (ICT) Technology Markets Worldwide, by Country, 1993-2001 (ranked by CAGR)



Source: World Information Technology and Services Alliance (WITSA), International Data Corporation (IDC), February 2002

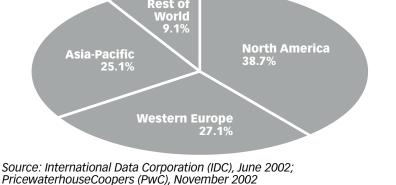
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Methodology
Technology Infrastructure
Internet Usage
Total E-Commerce
B2C E-Commerce
B2B E-Commerce
Index of Charts

IT Hardware

Broken down by world region, PricewaterhouseCoopers (PwC) and IDC estimate that Western Europe accounts for a slightly larger portion of global IT hardware spending than Asia-Pacific, making it the second biggest market behind North America. Driven largely by the United States, North America accounted for a 38.7% share of the global spending in 2002.





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Western Europe saw its IT hardware spending fall more sharply than the Asia-Pacific region, but both regions held up better than North America, which declined 8.7% in 2002.

Change in Worldwide IT Hardware Spending, by Region, 2002 (as a % decrease vs. prior year)

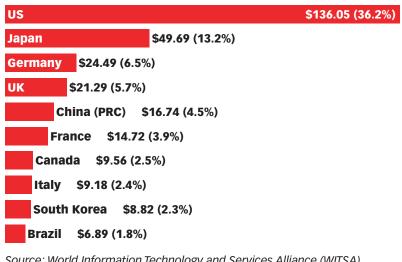
-8.7%			North America
	-2.89	6	Nestern Europe
	-1.3%	Asia-P	acific
Source: International Data Corpo PricewaterhouseCoopers (PwC),		2002;	
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Methodology	
Technology In	frastructure
Internet Usage	
Total E-Commerce	2
B2C E-Commerce	
B2B E-Commerce	
Index of Charts	

Among the leading national markets for IT hardware spending, the United States was by far the largest in 2001, accounting for more than 36% of global spending, compared with a combined 18.5% share of global IT hardware sales held by Germany, the United Kingdom, France and Italy. According to WITSA's calculations, the top 10 countries accounted for 79% of worldwide IT hardware spending in 2001.

Worldwide IT Hardware Spending, by Country, 2001 (in billions and as a % of spending worldwide)



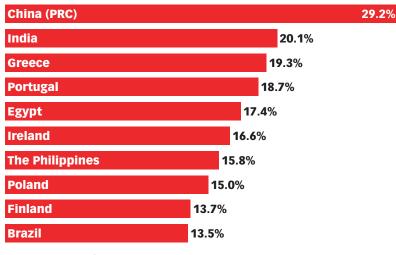
Source: World Information Technology and Services Alliance (WITSA), International Data Corporation (IDC), February 2002

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Eastern European countries did not perform quite as strongly among the fastest growing IT hardware companies as they did among the fastest growing telecom companies, but Europe had the most countries in the top 10, Greece was among the top three, with a CAGR of 19.3%. Other nations in the top 10 included Portugal, Ireland, Poland and Finland.

Fastest Growing IT Hardware Markets Worldwide, by Country, 1993-2001 (ranked by CAGR)



Source: World Information Technology and Services Alliance (WITSA), International Data Corporation (IDC), February 2002

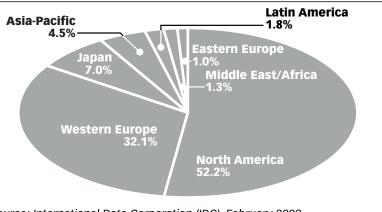
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Methodology
Technology Infrastructure
Internet Usage
Total E-Commerce
B2C E-Commerce
B2B E-Commerce
Index of Charts

IT Software

According to IDC, the gap between Europe and North America is even wider for software spending, with the latter outspending the former by 58%. However, Western Europe was the only other region to approach the leader's market. Asia-Pacific and Japan combined accounted for only 11.5% of global IT software spending.





Source: International Data Corporation (IDC), February 2002

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A WITSA estimate found that the US accounted for nearly 50% of all sales worldwide. Taken together, the top 10 countries were responsible for more than 85% of worldwide software spending in 2001, while Germany, the United Kingdom, France and Italy accounted for 22.3% of worldwide sales combined.

Worldwide Software Spending, by Country, 2001 (in billions and as a % of spending worldwide)

US \$96.56 (49.2%)
Germany \$14.70 (7.5%)
UK \$13.80 (7.0%)
Japan \$13.73 (7.0%)
France \$10.52 (5.4%)
Canada \$5.96 (3.0%)
italy \$4.65 (2.4%)
Netherlands \$4.44 (2.3%)
Australia \$2.73 (1.4%)
Switzerland \$2.56 (1.3%)
Source: World Information Technology and Services Alliance (WITSA),

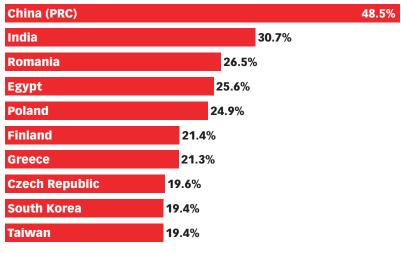
Source: World Information Technology and Services Alliance (WITSA), International Data Corporation (IDC), February 2002

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In addition, WITSA found that several European countries ranked among the fastest growing markets around the world. These included Romania, Poland and the Czech Republic. Other European countries to appear in the top 10 included Greece and Finland, both of which grew at more than 21.6%.

Fastest Growing Software Markets Worldwide, by Country, 1993-2001 (ranked by CAGR)



Source: World Information Technology and Services Alliance (WITSA), International Data Corporation (IDC), February 2002

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eMarketer's "IT Spending" report provides in-depth analysis and statistics, reinforced by comparative survey data, on IT spending in 2002 and 2003, by region and key technology market segments. Find out more at:

http://www.emarketer.com/products/report.php?it_spending_jan03

Methodology
Technology Infrastructure
Internet Usage
Total E-Commerce
B2C E-Commerce
B2B E-Commerce
Index of Charts

IT Services

In breaking down its worldwide IT services forecast by region, Gartner estimates that Western Europe has grown 7.1% from 2001 to 2003. The Western European total for 2003 is a little more than half of the total for North America.

Worldwide IT Services Market Revenues, by Region, 2001-2003 (in billions)

	2001	2002	2003
Asia-Pacific	\$27.60	\$30.07	\$33.44
Eastern Europe	\$6.98	\$7.36	\$7.82
Japan	\$64.81	\$64.78	\$70.31
Latin America	\$19.71	\$20.18	\$21.22
Middle East and Africa	\$9.09	\$9.47	\$10.03
North America	\$267.04	\$274.81	\$291.53
Western Europe	\$146.71	\$150.18	\$157.06
Worldwide total	\$541.93	\$556.83	\$591.40

Note: numbers may not add to total due to rounding Source: Gartner Dataquest, November 2002

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Among the top 10 national markets for IT services, WITSA estimates that the United States accounted for 46.8% of the worldwide IT services market in 2001, followed by Japan at 12.3%. Taken together, the top 10 countries were responsible for 87.2% of worldwide IT services spending in 2001, while the United Kingdom, Germany, France and Italy comprised a combined 21.1% of global sales.

Worldwide IT Services Spending, by Country, 2001 (in billions and as a % of spending worldwide)

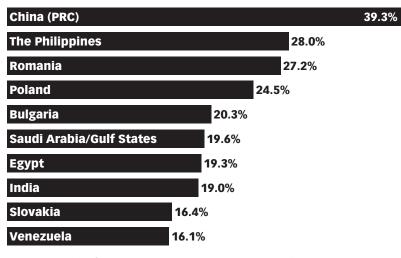
US		\$199.20 (46.8%)
Japan	\$52.32 (12.3%)	
UK \$27.35	5 (6.4%)	
Germa	any \$27.02 (6.3%)	
France \$24.87	(5.8%)	
Canada S	\$12.39 (2.9%)	
Italy \$11.	08 (2.6%)	
Netherlands	\$6.20 (1 .5%)	
Sweden \$5	.49 (1.3%)	
Australia \$	5.49 (1.3%)	
	ormation Technology and Services A a Corporation (IDC), February 2002	Alliance (WITSA),

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Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts

Eastern European countries also made a strong showing among the fastest growing worldwide IT services markets from 1993 to 2001. Romania, Poland, and Bulgaria all fell among the top five countries, with greater than 20% growth over the period. Slovakia also landed in the top 10 with a 16.4% growth rate.

Fastest Growing IT Services Markets Worldwide, by Country, 1993-2001 (ranked by CAGR)



Source: World Information Technology and Services Alliance (WITSA), International Data Corporation (IDC), February 2002

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Methodology	
Technology Infrastructur	е
Internet Usage	
Total E-Commerce	
B2C E-Commerce	
B2B E-Commerce	
Index of Charts	

Telecommunications Spending

Broken down by world region, the Telecommunications Industry Association (TIA) estimates that as it matures, the telecommunications market in Western Europe will decline in relative size, from a 19.9% share of global telecom spending in 2000 to a 16.2% share in 2004. On the other hand, substantial growth is expected for the Asia-Pacific region, where telecommunications spending is projected to increase from its 19.5% share of the world market in 2000 to a 23.4% share by 2004.

Worldwide Telecommunications Spending, by Region, 2000 & 2004 (in billions)

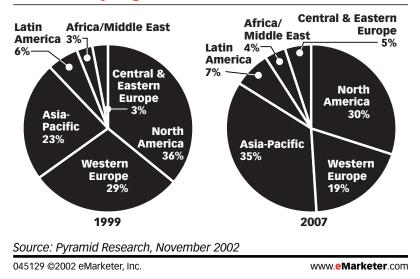
	2000	2004
US	\$609.2	\$954.0
Western Europe	\$351.7	\$496.0
Asia-Pacific	\$345.4	\$717.0
Eastern Europe	\$102.5	\$167.1
Latin America	\$79.0	\$157.1
Canada and Mexico	\$51.1	\$77.6
Total (not US)	\$1,155.0	\$2,099.0
Worldwide total	\$1,764.2	\$3,052.7
Source: Telecommunications	Industry Association, 2001	

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The TIA findings are supported by more recent forecast data from Pyramid Research, which expects telecom spending in North America and Western Europe to decline as a share of global spending over the next four years. The Asia-Pacific region, meanwhile, is expected to account for the largest portion of worldwide telecommunications spending by 2007, at 35% of the global market.

Breakdown of Worldwide Telecommunications Revenues, by Region, 1999 & 2007



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Tech	nology Ir	ifrastructure
Interr	iet Usage	
Total	E-Commerce	e
B2C E	-Commerce	
B2B E	-Commerce	
Index	of Charts	

"While European telecom remains in the dumps, telecom-related services will outperform the overall technology market, even in the bleakest scenario. Even while telcos struggle with debt mountains and flat revenues, mobile subscribers will increase by 6% in Europe in 2003."

- Charles Homs, senior analyst, Forrester Research

Pyramid Research has also noted that European countries continue to invest in telecommunications. Germany and the UK are contributing a greater percentage of worldwide telecom spending than China, which at 4.2% ranks higher than France and Italy.

Worldwide Telecommunications Spending, by Country, 2001 (in billions and as a % of spending worldwide)

US	\$265.95 (25.6%)
Japan	\$225.76 (21.8%)
Germany \$56.39 (5.4%)	
UK \$46.37 (4.5%)	
China (PRC) \$44.02 (4.2%)	
France \$39.35 (3.8%)	
Italy \$32.10 (3.1%)	
Brazil \$31.70 (3.1%)	
Canada \$21.27 (2.0%)	
Australia \$18.38 (1.8%)	

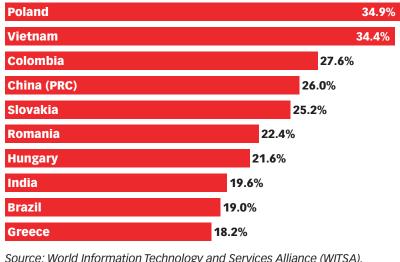
Source: World Information Technology and Services Alliance (WITSA), International Data Corporation (IDC), February 2002

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Methodology
Technology Infrastructure
Internet Usage
Total E-Commerce
B2C E-Commerce
B2B E-Commerce
Index of Charts

As for the fastest growing markets for telecommunications technology and related services, WITSA found that members of the former Soviet bloc are now among the global leaders. Poland, at 34.9%, leads the world in telecom spending. Other Eastern European countries rank among the leaders, including Slovakia, Romania, and Hungary, along with Greece.

Fastest Growing Telecommunications Markets Worldwide, by Country, 1993-2001 (ranked by CAGR)



Source: World Information Technology and Services Alliance (WITSA), International Data Corporation (IDC), February 2002

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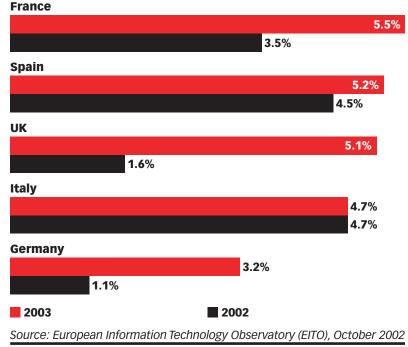
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In Western Europe, the TIA estimates that telecommunications infrastructure and enterprise equipment spending fell by 11.5% in 2001, with public network equipment spending falling by a substantial 19.2%. As of April 2002, the TIA was predicting that enterprise equipment spending would stabilize by the end of 2002, after falling 9.0% in 2001, and then go on to increase by a CAGR of 5.4% between 2001 and 2005.

Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts

By comparison, a more recent forecast from the European Information Technology Observatory (EITO) predicts that telecommunications spending in Western Europe will grow by 4.4% in 2003, up from growth of just 2% in 2002. Leading markets include France, Spain and the United Kingdom, which are expected to post growth of more than 5% in 2003.

Estimated Growth in Communications Technology Spending in Western Europe, by Country, 2002 & 2003



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As for Eastern Europe, the TIA predicts that enterprise telecommunications spending will increase by a compound annual growth rate of 10.4% between 2001 and 2005, while public network equipment spending will experience a compound annual growth rate of 9.2% over the same period.

Enterprise and Public Network Telecommunications Equipment Spending in Eastern Europe, 2005 (in billions)



Methodology Technology Infrastructure Internet Usage Total E-Commerce B2D E-Commerce B2B E-Commerce Index of Charts

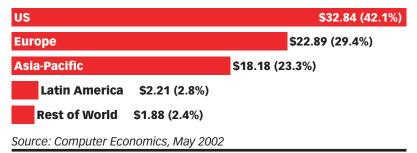
"While there is an absence of a driving killer application and a catalyst to incite an end user spending spree, the temporal expanse of depressed spending is creating pent-up demand. Spending will be more at corporations' discretion, but there are competitive elements that could exert pressure on corporations once the wave starts."

— Klaus Rinnen, analyst, Gartner

E-business

As in other categories, Europe accounted for roughly a third of spending in e-business, followed by the Asia-Pacific region at 23.3% of worldwide e-business spending.

Worldwide E-Business Technology Spending, by Region, 2002 (in billions and as a % of total spending)



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29

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"The most important issue in 2003 is to change how budgets are spent. The reality is that businesses will still be operating with budgets at the same level as in 2000. While business priorities are still on cutting costs, IT departments must find a way to divert focus from pure cost-cutting to continued cost-optimisation, and to make investments that deliver business value from IT."

- Peter Sondergaard, head of European research, Gartner

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Technology Infrastructure
Internet Usage
Total E-Commerce
B2C E-Commerce
B2B E-Commerce
Index of Charts
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B. IT Spending Forecasts: Europe

According to the Aberdeen Group's technology spending estimates for Europe, IT spending will reach \$384.6 billion by the end of 2002, and will grow to \$393.1 billion in 2003.

IT Spending in Europe, 2000-2005 (in billions)

\$375.6
\$377.4
\$384.6
\$393.1
\$402.0
\$410.5

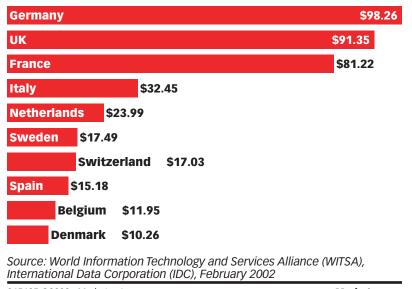
Source: Aberdeen Group, August 2002

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By comparison, Computer Economics estimates that IT spending in Europe will total \$325.6 billion by the end of 2002, while Gartner Dataquest estimates that Western European IT spending alone will reach \$584.4 billion by the end of 2002 and grow to \$615.8 billion in 2003. Among the leading national markets in Western Europe, Germany, the United Kingdom and France are the largest, with Italy and the Netherlands rounding out the top five countries in 2001, according to WITSA. Other countries of note include Austria and Norway, which spent \$8.9 billion and \$7.6 billion on information technology in 2001, respectively.

Leading IT Markets in Western Europe, 2001 (in billions)

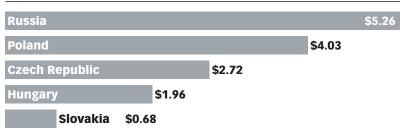


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Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts

With their highly educated and computer literate populations, the emerging markets of Eastern Europe have begun to significantly increase their spending on information technology in recent years, with Russia and Poland coming out on top as the two largest national markets. Slovenia, Romania and Bulgaria are among the smallest IT markets in the world, with spending of \$490 million, \$416 million and \$269 million, respectively, in 2001.

Leading IT Markets in Eastern Europe, 2001 (in billions)

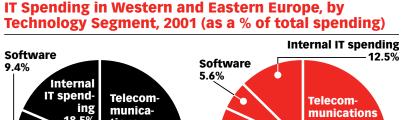


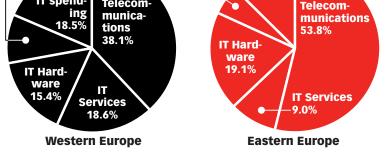
Source: World Information Technology and Services Alliance (WITSA), International Data Corporation (IDC), February 2002

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When comparisons are made between the ways countries in Western Europe allocate their IT spending versus their counterparts in Eastern Europe, it is apparent that the less mature markets of Eastern Europe are still investing heavily in basic infrastructure such as telecommunications equipment and IT hardware. Compared with the United States, however, Western European countries have been spending much more on internal IT expenses such as labor and other operational costs, and slightly less on software and IT services.





Source: International Data Corporation (IDC), February 2002

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Methodology
Technology Infrastructure
Internet Usage
Total E-Commerce

B2C E-Commerce

B2B E-Commerce

According to Gartner Dataquest's estimates, Western European IT spending on telecommunications equipment will increase by 5.8%, from \$330.9 billion in 2002 to \$350.2 billion in 2003. IT services spending in Western Europe will see the highest growth in 2003, however, as it is forecast to increase by 7.1% to \$158.5 billion by the end of the year.

IT Spending in Western Europe, by Technology Segment, 2000-2003 (in billions)

2000	2001	2002	2003
\$92.84	\$85.12	\$81.99	\$82.01
\$23.65	\$23.07	\$23.61	\$25.11
\$136.67	\$144.62	\$148.01	\$158.48
\$319.49	\$321.94	\$330.91	\$350.22
\$572.64	\$574.74	\$584.52	\$615.82
	\$92.84 \$23.65 \$136.67 \$319.49	\$92.84 \$85.12 \$23.65 \$23.07 \$136.67 \$144.62 \$319.49 \$321.94	\$92.84 \$85.12 \$81.99 \$23.65 \$23.07 \$23.61 \$136.67 \$144.62 \$148.01 \$319.49 \$321.94 \$330.91

Source: Gartner Dataquest, October 2002

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Methodology	
Technology Infrastructure	-
Internet Usage	1
Total E-Commerce	I
B2C E-Commerce	
B2B E-Commerce	
Index of Charts	5
	ş

C. IT Spending Growth Rates: Europe

According to Gartner Dataquest's October 2002 IT spending forecast for Western Europe, IT spending is set to see growth of 5.4% in 2003, up from 1.7% growth in 2002. By comparison, in July 2002, IDC estimated that IT spending in Western Europe would grow by 6.3%, after experiencing growth of 4.4% in 2002.

IT Spending Growth in Western Europe 2001-2003

2001	3.4%
2002	4.4%
2003	6.2
Source: International D	ta Corporation (IDC), July 2002
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IDC forecast Sweden to lead Western European IT spending growth, with an 8% increase in 2002. Finland, France, Italy and the Netherlands were expected to follow closely, with growth rates of 6%.

"...A return to healthy IT investment will be hindered until business profitability ameliorates and the restrictions on corporate IT budgets are subsequently relaxed."

- Vicky Hawksworth, IDC European IT Markets Center

Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts

However, as a result of sluggish economic growth in Europe during the second half of 2002, IDC lowered its IT spending forecast for Western Europe in November 2002. The research firm now estimates growth of 5.4% in 2003. Similarly, Giga Information Group expects IT spending in Europe to see moderate IT spending growth of between 2% and 4% in 2003, up from an increase of just 1% in 2002. A fourth comparative estimate from EITO, released in October 2002, estimates that IT and telecommunications spending will grow by just 3.2% in 2003, after experiencing growth of 1.1% in 2002.

Estimated Growth in Information and Communications Technology Spending in Western Europe, 2002 & 2003

2002	1.1%
2003	3.2%
Source: European Inform	ation Technology Observatory (EITO), October 2002

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However, when telecommunications technology is excluded, EITO predicts that IT spending in Western Europe will actually remain stagnant in 2002, increasing by only 0.1%, and will see slight growth of just 1.9% in 2003. Among the bright spots in the Western European technology market, AMR Research predicts that spending on e-business applications will increase by a compound annual growth rate of 24% between 2001 and 2005. Computer Economics estimates that spending on e-business applications and infrastructure will reach \$22.9 billion in Europe by the end of 2002.

Methodology Technology Infrastructure Internet Usage Total E-Commerce B2D E-Commerce B2B E-Commerce Index of Charts

In a September 2002 survey of IT professionals in Western Europe, Gartner Dataquest found that respondents in the Benelux countries were rather optimistic about their IT spending in 2003, with 19.2% of IT respondents indicating that they expected their companies' IT budgets to increase by more than 10%. IT managers in Italy were the most positive however, with 46% of respondents saying that they plan to increase their IT spending by at least 3% in 2003. Respondents in the United Kingdom and Ireland were similarly optimistic, with 37.7% expecting to see a notable increase in their IT spending.

IT Spending Intentions of CIOs in Selected Countries in Western Europe, 2003 (as a % of respondents)

	Benelux	Scan- dinavia	France	Germany	UK & Ireland	Italy	Others
Increase by more than 10%	19.2%	5.1%	4.4%	4.5%	8.2%	16.0%	5.0%
Increase by 3%-10%	5.8%	17.9%	20.0%	13.6%	29.5%	30.0%	40.0%
No change (-3% to +3%)	55.8%	53.8%	64.4%	54.5%	39.3%	38.0%	30.0%
Decrease by 3%-10%	5.8%	10.3%	6.7%	15.9%	14.8%	14.0%	20.0%
Decrease more than 10%	13.5%	12.8%	4.4%	11.4%	8.2%	2.0%	5.0%
Source: Gartner	Dataquest	, October	2002				

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35

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In total, 78.4% of Western European IT managers said that they expected that their IT budgets would stay flat or increase, while 21.4% believed that their IT budgets would decrease in 2003.

	Methodology	7
I	Technology Infrastructure	11
	Internet Usage	37
	A. Internet Users in Europe	38
111	Total E-Commerce	49
IV	B2C E-Commerce	53
V	B2B E-Commerce	89
	Index of Charts	121

Methodology

Technology Infrastructure

Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts To get a sense of the state and potential for e-commerce in Europe, it is helpful to look at metrics that detail how European consumers are using the Web. Details such as Internet penetration and tenure serve as a foundation for determining the rate of e-commerce adoption.

"The countries where the Internet penetration is greatest and has been longer established, like the UK and Germany, have become used to dial-up connections, and broadband is being sold as an upgrade. But in France and Spain users have leapfrogged the technology and first-time Internet surfers are getting connected via broadband, bypassing the slower dial-up completely."

- Tom Ewing, European market analyst, Nielsen//NetRatings

A. Internet Users in Europe

Data from the International Telecommunications Union, which eMarketer uses as its benchmark for Internet population measures, shows consistent growth across all surveyed European countries except Poland from 2000 to 2002. The four European countries with the largest Internet populations are Germany, the UK, France, and Italy. Since 2000, the number of Internet users in France has grown more quickly than in Italy. Neither country, however, is adding as many new Internet users as Germany, which saw more than 10 million people come online from 2000 to 2002.

Internet Users in Select Countries in Europe, 2000-2002 (in thousands)

	2000	2001	2002
Denmark	2,090	2,300	2,500
Finland	1,927	2,235	2,650
France	8,460	15,653	18,716
Germany	24,800	30,800	35,000
Italy	13,200	15,600	17,000
Netherlands	7,000	7,900	8,590
Norway	1,950	2,100	2,300
Poland	2,800	3,800	3,800
Russia	2,900	4,300	6,000
Spain	5,486	7,388	7,856
Sweden	4,048	4,600	5,125
UK	15,800	19,800	24,000

Note: Internet users ages 2 years and older, who have accessed the Internet within the previous 30 days Source: International Telecommunication Union (ITU), April 2003

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Methodology

Technology Infrastructure Internet Usage

Total E-Commerce B2C E-Commerce B2B E-Commerce

Index of Charts

Jupiter Research predicts that over half (51%) of all Europeans will be online by 2007. However, the research firm sees disparity across the region. For example, Internet user growth will average 68% in the Nordic countries, compared to an average of 41% in Southern Europe.

Internet Users in Western Europe, by Country, 2001-2007 (in millions)

	2001	2002	2003	2004	2005	2006	2007
Austria	2.9	3.3	3.5	3.8	4.0	4.1	4.2
Belgium	2.8	3.3	3.7	4.1	4.4	4.6	4.8
Denmark	2.8	3.0	3.2	3.4	3.5	3.6	3.7
Finland	2.2	2.4	2.6	2.7	2.9	3.0	3.1
France	13.2	16.5	19.8	22.9	25.6	27.9	29.6
Germany	29.0	33.7	37.7	40.8	43.0	44.5	45.5
Ireland	1.2	1.4	1.5	1.7	1.8	1.9	2.0
Italy	13.9	17.4	20.5	22.9	24.6	25.7	26.4
Luxembourg	0.2	0.2	0.2	0.2	0.2	0.2	0.3
Netherlands	7.5	8.2	8.9	9.4	9.8	10.1	10.3
Norway	2.7	2.9	3.0	3.1	3.2	3.3	3.4
Portugal	2.0	2.6	3.2	3.7	4.1	4.4	4.7
Spain	7.0	8.4	9.8	11.2	12.5	13.7	14.7
Sweden	5.5	5.8	6.1	6.3	6.5	6.7	6.8
Switzerland	3.0	3.3	3.6	3.8	3.9	4.1	4.2
United Kingdom	22.7	25.8	28.3	30.4	31.9	33.1	33.9
Source: Jupiter Re	esearch,	Novemb	er 2002				

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Central and Eastern Europe

According to the ITU, the largest Internet user populations in Eastern Europe are found in the following countries:

- Czech Republic (1.4 million users, or 13.6% of the population)
- Hungary (1.5 million users, or 15% of the population)
- Poland (3.8 million users, or 9.8% of the population)
- Romania (1 million users, or 4.4% of the population)
- Russia (4.3 million users, or 2.9% of the population)

Internet penetration is even higher in parts of the Baltic region, notably Slovenia and Estonia, but the small overall populations of these countries limit the market size.

Methodology

Technology Infrastructure

Internet Usage

Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts "Estonia and Slovenia stand out as leaders in the region, as both countries have Internet penetration levels on par with Western Europe. This can be attributed to government efforts to promote Internet usage in schools and public access points, as well as to private initiatives among businesses to promote the Internet."

— Joshua Budd, senior analyst with IDC CEMA's Telecoms and Internet group

The significant growth in the number of Internet users in the leading Eastern European nations seen in 2001 and 2002 is expected to continue this year as well, according to a study by PwC and Wilkofsky Gruen Associates. While gains in Internet usage rates will begin to slow, the number of Internet users in these five countries is still expected to increase to 62 million by 2006, up from less than 25 million in 2001. The report notes that current initiatives in Russia and Poland to restructure local telecommunications carriers should help to generate increased investment in Internet infrastructure and further boost online usage.

Internet Users in Eastern Europe, 2001-2006 (in millions and as a % change vs. prior year)

2001	24.9 (36.8%)
2002	31.4 (26.1%)
2003	41.2 (31.2%)
2004	48.7 (18.2%)
2005	55.6 (14.2%)
2006	62.0 (11.5%)

Note: CAGR (2002-2006)=20.0%

Source: PricewaterhouseCoopers (PwC), Wilkofsky Gruen Associates, May 2002

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Methodology

Technology Infrastructure

Internet Usage

Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts Russia's vast size and population gives it an edge in terms of eastern European Internet users. The only other country that is expected to reach 10 million users by 2006 is Poland, which will see relatively slow linear growth over the next few years.

Internet Users in Eastern Europe, by Country, 2001-2006 (in millions)

	2001	2002	2003	2004	2005	2006
Czech Republic	1.5	2.0	2.5	2.7	2.9	3.1
Hungary	1.9	2.4	2.7	3.0	3.2	3.4
Poland	6.5	7.0	8.0	9.0	9.5	10.0
Romania	1.0	2.0	3.0	4.0	5.0	5.5
Russia	14.0	18.0	25.0	30.0	35.0	40.0
Source: Pricewate	erhouseCo	opers (Pw	C), Wilkofs	sky Gruen	Associate	s, May

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While PwC predicted Poland to be one of the largest Internet populations in Eastern Europe by 2006, its growth is slowing compared to other formerly Communist nations. Leading the charge is Romania, which will have undergone an explosive CAGR of 40.6% between 2001 and 2006. Russia will have experienced slower, but also strong growth, 23.4%.

Internet User Growth in Eastern Europe, by Country, 2001-2006

	2001	2002	2003	2004	2005	2006	CAGR (2002-2006)
Czech Republic	50.0%	33.3%	25.0%	8.0%	7.4%	6.9%	15.6%
Hungary	26.7%	26.3%	12.5%	11.1%	6.7%	6.3%	12.3%
Poland	18.2%	7.7%	14.3%	12.5%	5.6%	5.3%	9.0%
Romania	25.0%	100.0%	50.0%	33.3%	25.0%	10.0%	40.6%
Russia	48.9%	28.6%	38.9%	20.0%	16.7%	14.3%	23.4%
Source: Pricewa 2002	terhous	seCooper	rs (PwC,), Wilkof	sky Gru	en Asso	ociates, May

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Although some small Eastern European countries such as Slovenia and Estonia have made great advances in adopting computers, cellular phones and the Internet, much of the region remains grossly underserved by information technology. As the following data from MediaResearch demonstrate, Internet user populations below 1 million prevail throughout much of the region. Methodology

Technology Infrastructure Internet Usage

Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts MediaResearch's statistics are consistent with the ITU's figures. However, it finds more widespread Internet use in Russia (8.5 million users) and Poland (4.8 million users) than the ITU does (4.3 million and 3.8 million users, respectively).

Internet Users in Selected Countries in Eastern Europe, 2001 & 2002 (in millions)

	Date of estimate	Internet users
Croatia	August 2002	0.6
Czech Republic	Q2 2002	2.3
Estonia	February 2002	0.4
Hungary	Q1 2002	1.0
Latvia	January 2002	0.3
Poland	March 2002	4.8
Russia	December 2001	8.5
Slovenia	June 2002	0.6
Source: MediaResear	rch, November 2002	
	120	

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Western Europe

While countries in Western Europe boast a far greater number of Internet users than their neighbors to the east, slowing overall growth will produce a compound annual growth rate (CAGR) of 6% between 2001 and 2006, according to the same report by PwC and Wilkofsky Gruen Associates. By contrast, these firms estimate that Internet users in Eastern European countries will show a CAGR of 20% between 2001 and 2006.

Internet Users in Western Europe, 2001-2006 (in millions and as a % change vs. prior year)

2001	123.3 (15.6%)
2002	136.6 (10.5%)
2003	148.5 (9.0%)
2004	158.1 (6.5%)
2005	164.9 (4.3%)
2006	171.2 (3.8%)

Note: CAGR (2002-2006)=6.8%

Source: PricewaterhouseCoopers (PwC), Wilkofsky Gruen Associates, May 2002

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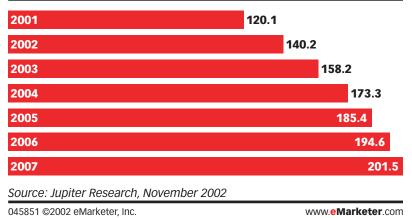
Methodology

Technology Infrastructure

Internet Usage

Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts Jupiter Research predicts that the number of Internet users in Western Europe will rise from 120.1 million in 2001 to 201.5 million in 2007. This will yield 68% growth in Internet users in Europe over that period. Jupiter further projects that the European online population will increase at a CAGR of 11% through 2006, while through 2007, the CAGR will be slightly lower, at 9%.

Internet Users in Western Europe, 2001-2007 (in millions)



IDC is slightly more optimistic in its projections of Internet users in Europe. It predicts that the number of Internet users in Western Europe will rise from 151 million in 2001 to 258 million in 2006. This represents nearly 71% growth in online users in Europe over that five-year period.

Internet Users in Western Europe, 2001-2006 (in millions and as a % of the population)

2001	151 (39%)
2002	169 (43%)
2003	194 (50%)
2004	217 (55%)
2005	238 (61%)
2006	258 (66%)
Source: International Data Corpo	oration (IDC), September 2002

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Methodology

Technology Infrastructure

Internet Usage

Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts PwC's data agrees with other sources that the UK, France, and Germany are the largest current markets for Internet access, and that they will retain this distinction through 2006, at which point all should reach approximately 30 million users. Aside from Spain, the Netherlands and Italy, other countries will struggle to break the 10 million-user mark. Ireland and Finland, although known as important regional technology centers, will have the fewest Internet users in Western Europe, along with Norway, owing to their relatively small overall populations.

Internet Users in Western Europe, by Country, 2001-2006 (in millions)

	2001	2002	2003	2004	2005	2006
Austria	3.0	3.3	3.6	3.9	4.1	4.2
Belgium	3.0	3.2	3.4	3.6	3.8	4.0
Denmark	3.0	3.3	3.5	3.7	3.8	3.9
Finland	2.9	3.1	3.3	3.5	3.6	3.7
France	19.0	22.0	24.0	26.0	27.0	28.0
Germany	23.0	24.0	26.0	28.0	29.0	30.0
Greece	2.0	2.2	2.4	2.6	2.8	2.9
Ireland	1.2	1.3	1.4	1.5	1.6	1.7
Italy	14.5	15.5	16.5	17.5	18.5	19.5
Netherlands	8.0	9.0	9.5	10.0	10.3	10.5
Norway	3.0	3.2	3.4	3.5	3.6	3.7
Portugal	2.5	3.0	3.5	3.9	4.5	5.0
Spain	8.0	9.0	10.0	11.0	12.0	13.0
Sweden	5.5	6.0	6.5	6.7	6.9	7.0
Switzerland	2.7	3.2	3.5	3.7	3.9	4.1
UK	22.0	25.0	28.0	29.0	29.5	30.0

Source: PricewaterhouseCoopers (PwC), Wilkofsky Gruen Associates, May 2002

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44

Methodology

Technology Infrastructure

Internet Usage

Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts Spain is poised to be a hot Internet market over the next several years. While it has a significant base of 10 million users today, it is poised for continued strong growth until 2006, according to PwC. Its neighbor Portugal will also experience strong growth. After a 78% spurt in 2001, Portugal is poised to grow between 11% and 17% per year through 2006.

Internet User Growth in Western Europe, by Country, 2001-2006

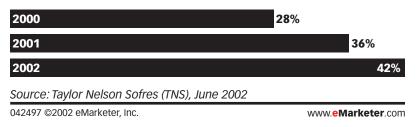
2001	2002	2003	2004	2005	2006	CAGR (2002-2006)
11.1%	10.0%	9.1%	8.3%	5.1%	2.4%	7.0%
7.1%	6.7%	6.3%	5.9%	5.6%	5.3%	5.9%
20.0%	10.0%	6.1%	5.7%	2.7%	2.6%	5.4%
26.1%	6.9%	6.5%	6.1%	2.9%	2.8%	5.0%
31.9%	15.8%	9.1%	8.3%	3.8%	3.7%	8.1%
3.1%	4.3%	8.3%	7.7%	3.6%	3.4%	5.5%
11.1%	10.0%	9.1%	8.3%	7.7%	3.6%	7.7%
9.1%	8.3%	7.7%	7.1%	6.7%	6.2%	7.2%
9.0%	6.9%	6.5%	6.1%	5.7%	5.4%	6.1%
33.3%	12.5%	5.6%	5.3%	3.0%	1.9%	5.6%
15.4%	6.7%	6.2%	2.9%	2.9%	2.8%	4.3%
78.6%	20.0%	16.7%	11.4%	15.4%	11.1%	14.9%
29.0%	12.5%	11.1%	10.0%	9.1%	8.3%	10.2%
7.8%	9.1%	8.3%	3.1%	3.0%	1.4%	4.9%
17.4%	18.5%	9.4%	5.7%	5.4%	5.1%	8.7%
10.6%	13.6%	12.0%	3.6%	1.7%	1.7%	6.4%
	7.1% 20.0% 26.1% 31.9% 3.1% 11.1% 9.1% 9.0% 33.3% 15.4% 78.6% 29.0% 7.8% 17.4%	7.1% 6.7% 20.0% 10.0% 26.1% 6.9% 31.9% 15.8% 3.1% 4.3% 11.1% 10.0% 9.1% 8.3% 9.0% 6.9% 33.3% 12.5% 15.4% 6.7% 78.6% 20.0% 29.0% 12.5% 7.8% 9.1% 17.4% 18.5%	7.1% 6.7% 6.3% 20.0% 10.0% 6.1% 26.1% 6.9% 6.5% 31.9% 15.8% 9.1% 3.1% 4.3% 8.3% 11.1% 10.0% 9.1% 9.1% 8.3% 7.7% 9.0% 6.9% 6.5% 33.3% 12.5% 5.6% 15.4% 6.7% 6.2% 78.6% 20.0% 16.7% 29.0% 12.5% 11.1% 7.8% 9.1% 8.3% 17.4% 18.5% 9.4%	7.1% 6.7% 6.3% 5.9% 20.0% 10.0% 6.1% 5.7% 26.1% 6.9% 6.5% 6.1% 31.9% 15.8% 9.1% 8.3% 3.1% 4.3% 8.3% 7.7% 11.1% 10.0% 9.1% 8.3% 9.1% 8.3% 7.7% 7.1% 9.0% 6.9% 6.5% 6.1% 33.3% 12.5% 5.6% 5.3% 15.4% 6.7% 6.2% 2.9% 78.6% 20.0% 16.7% 11.4% 29.0% 12.5% 11.1% 10.0% 7.8% 9.1% 8.3% 3.1% 17.4% 18.5% 9.4% 5.7%	7.1% 6.7% 6.3% 5.9% 5.6% 20.0% 10.0% 6.1% 5.7% 2.7% 26.1% 6.9% 6.5% 6.1% 2.9% 31.9% 15.8% 9.1% 8.3% 3.8% 3.1% 4.3% 8.3% 7.7% 3.6% 11.1% 10.0% 9.1% 8.3% 7.7% 9.1% 8.3% 7.7% 7.1% 6.7% 9.1% 8.3% 7.7% 7.1% 6.7% 9.1% 8.3% 7.7% 7.1% 6.7% 9.0% 6.9% 6.5% 6.1% 5.7% 33.3% 12.5% 5.6% 5.3% 3.0% 15.4% 6.7% 6.2% 2.9% 2.9% 78.6% 20.0% 16.7% 11.4% 15.4% 29.0% 12.5% 11.1% 10.0% 9.1% 7.8% 9.1% 8.3% 3.1% 3.0% 17.4% 18.5% 9.4% 5.7% 5.4%	7.1% $6.7%$ $6.3%$ $5.9%$ $5.6%$ $5.3%$ $20.0%$ $10.0%$ $6.1%$ $5.7%$ $2.7%$ $2.6%$ $26.1%$ $6.9%$ $6.5%$ $6.1%$ $2.9%$ $2.8%$ $31.9%$ $15.8%$ $9.1%$ $8.3%$ $3.8%$ $3.7%$ $3.1%$ $4.3%$ $8.3%$ $7.7%$ $3.6%$ $3.4%$ $11.1%$ $10.0%$ $9.1%$ $8.3%$ $7.7%$ $3.6%$ $9.1%$ $8.3%$ $7.7%$ $7.1%$ $6.7%$ $6.2%$ $9.0%$ $6.9%$ $6.5%$ $6.1%$ $5.7%$ $5.4%$ $33.3%$ $12.5%$ $5.6%$ $5.3%$ $3.0%$ $1.9%$ $15.4%$ $6.7%$ $6.2%$ $2.9%$ $2.9%$ $2.8%$ $78.6%$ $20.0%$ $16.7%$ $11.4%$ $15.4%$ $11.1%$ $29.0%$ $12.5%$ $11.1%$ $10.0%$ $9.1%$ $8.3%$ $7.8%$ $9.1%$ $8.3%$ $3.1%$ $3.0%$ $1.4%$ $17.4%$ $18.5%$ $9.4%$ $5.7%$ $5.4%$ $5.1%$

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With the largest population in Europe and a rich tradition of media consumption, Germany represents a thriving Internet economy. In 2002, 42% of the German population accessed the Internet, up from 36% in 2001, reports Taylor Nelson Sofres (TNS).

Internet Users in Germany, 2000-2002 (as a % of total population)



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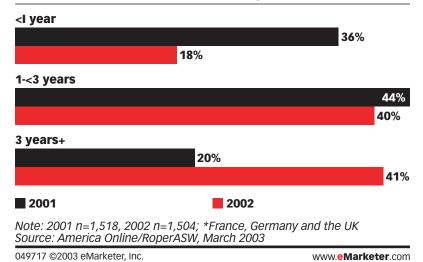
Methodology

Technology Infrastructure

Internet Usage

Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts Studies have consistently shown that online tenure is a great indicator of inclination to purchase online, especially as users become more adept at navigation and learn to trust specific Web sites. According to America Online (AOL) and RoperASW, the majority of European Internet users have been online fewer than two years. Furthermore, a significant percentage still has less than a year online. Inexperience with the Internet will continue to be an inhibitor to e-commerce in Europe for the next several years.

Home Internet Users in Europe*, by Experience Online, 2001 & 2002 (as a % of respondents)



However, the overall tenure of Europeans continues to increase. In particular, the percentage of respondents who reported they had spent less than one year online halved from its 2001 level of 36%, and the percentage reporting they have spent three or more years online increased from a year ago, more than doubling from 20% to 41%. The group with some tenure – between one and three years – increased slightly to 44%. Clearly, Europeans are quickly moving into the most experienced category and the number of Net newbies is rapidly decreasing.

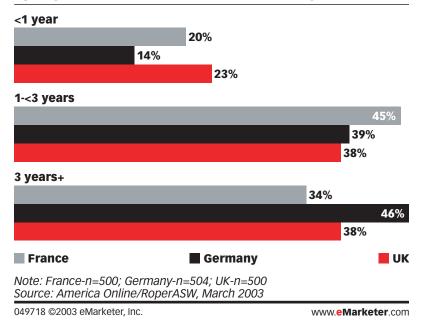
Methodology

Technology Infrastructure

Internet Usage

Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts AOL and RoperASW found some differentiation among the three largest European economies in terms of online tenure. Germany saw the largest percentage of its users in the highest tenure category, with 46% of its users reporting being online three or more years; this was in contrast to France, where only 34% of respondents reported being online for that length of time. The UK, however, saw the largest percentage of its respondents fall into the least-tenured category.

Home Internet Users in France, Germany and the UK, by Experience Online, 2002 (as a % of respondents)

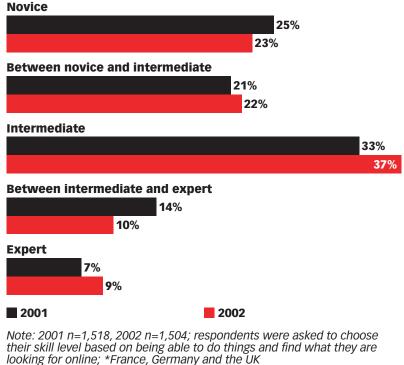


Methodology

Technology Infrastructure

Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts Even as the online populations in France, Germany, and the UK are becoming more experienced, relatively few users consider themselves "expert" Internet users. Although such self-assessment is not a prerequisite for Internet purchases, it does offer another indication of confidence. Of note, the number of users who rated themselves as having a better than intermediate level of Internet skill decreased slightly in 2002 to 19% from 2001's level of 21%, but the percentage of respondents who rated themselves as experts increased slightly. In addition, the number of respondents rating themselves as novices decreased two percentage points.

Skill Level of Home Internet Users in Europe*, 2001 & 2002 (as a % of respondents)



Source: America Online/RoperASW, March 2003

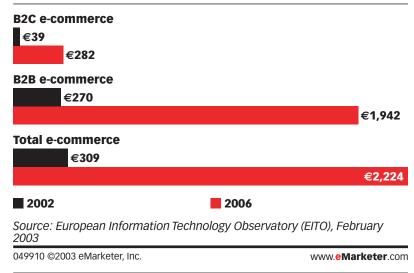
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	Methodology	7
I	Technology Infrastructure	11
II	Internet Usage	37
	Total E-Commerce	49
IV	B2C E-Commerce	53
V	B2B E-Commerce	89
	Index of Charts	121

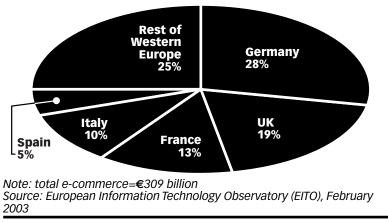
Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts As noted in eMarketer's June 2002 *Europe E-Commerce: B2B and B2C*[™] report, the number of publicly released comparative estimates for total e-commerce has dwindled, a trend that continues today. Rather than looking at Europe as a single region to target, most firms look at it in terms of sub-regions. With many Eastern European countries poised to join the European Union, this may change, as Europe will undoubtedly develop into an even stronger, more unified trading block.

For the moment, however, the UK, Germany and France dominate online commerce in Europe, representing as much as 64% of total online trade in the EU, according to Forrester Research estimates, and 60% of total e-commerce according to calculations by the European Information Technology Observatory (EITO). These three countries are also the leaders in consumer e-commerce.

E-Commerce Revenues in Western Europe, 2002 & 2006 (in billions of €)



Distribution of E-Commerce Revenues in Western Europe, by Country, 2002 (as a % of total)



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Methodology Technology Infrastructure Internet Usage **Total E-Commerce** B2B E-Commerce Index of Charts

"B2B clearly helps companies find suppliers and customers in other countries."

— Andy Kyte, analyst, Gartner Inc.

While they wait to enter the EU, the countries of Central and Eastern Europe remain a distinct market, one that is traditionally smaller than the economic leaders of Western Europe. Nonetheless, it will see considerable growth in overall e-commerce spending, with revenues increasing four-fold between 2003 and 2006, according to IDC. Note that B2B will account for 90% of the total in 2003, and will likely remain the major component through the middle of the decade, spurred by the rising availability of PCs among businesses and use of online marketplaces to procure essential items such as office supplies. IDC calculates that the Czech Republic, Hungary and Poland represent approximately 90% of the region's total e-commerce market.

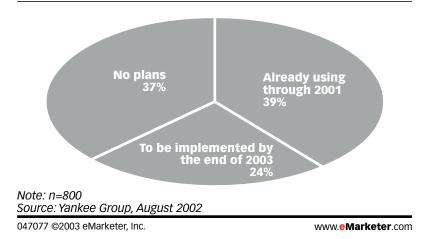
E-Commerce Spending in Central and Eastern Europe, 2003 & 2006 (in billions)

2003	\$4.4	
2006		\$17.6
spending in	les B2B and B2C. B2B will account for 2003 rnational Data Corporation (IDC), Feb	

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Methodology Technology Infrastructure Internet Usage **Total E-Commerce** B2C E-Commerce B2B E-Commerce Index of Charts Overall, EITO concluded in its most recent report on ICT and e-business, European nations must accelerate the development and deployment of new technology-based solutions, in order to accompany the region's growth as a unified market. It noted that SMEs in particular have been lagging in their use of ICT to gain efficiencies and traction in the marketplace. According to the chart below from the Yankee Group, 39% of SMEs in Europe were already using an e-commerce platform at the end of 2001, with an additional 24% planning to implement one by the end of 2003. Still, 37% of the SMEs surveyed had no plans to adopt an e-business platform at all.

European SMEs' Planned Implementation of an E-Commerce Platform, 2003 (as a % of respondents)



"E-commerce is a one-way street. Once processes move online, they stay online."

— Mikael Arnbjerg, analyst, International Data Corporation (IDC), as quoted in BusinessWeek Online, 12 May 2003

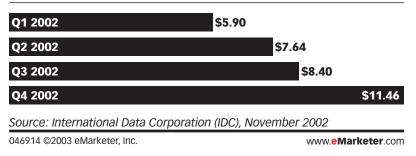
	Methodology	7
I	Technology Infrastructure	11
II	Internet Usage	37
	Total E-Commerce	49
IV	B2C E-Commerce	53
	A. General Trends	54
	B. Revenue Projections	56
	C. Online Shoppers and Buyers	60
	D. Non-Internet E-Commerce	84
V	B2B E-Commerce	89
	Index of Charts	121

Methodology
Technology Infrastructure
Internet Usage
Total E-Commerce
B2C E-Commerce
B2C E-Commerce

A. General Trends

IDC saw moderate but steady growth for e-commerce throughout Western Europe in 2002. The research group estimated that Q1 revenues were \$5.9 billion while Q4 revenues were \$11.46 billion. Very moderate growth was seen between the second and third quarters when revenue rose from \$7.64 billion to \$8.4 billion. Following a well-established pattern, fourth quarter sales comprised the largest chunk of the annual revenues due to the holiday shopping season.

B2C E-Commerce Revenues in Western Europe, by Quarter, 2002 (in billions)



Methodology Technology Infrastructure Internet Usage Total E-Commerce B2E E-Commerce Index of Charts E-commerce has emerged as one of the more popular Internet applications. Europeans cite information gathering as the leading way the Internet has made their lives better, but e-commerce was cited by 35% of those surveyed by AOL and RoperASW. Shopping and buying online was the most cited response in the category. Tasks such as purchasing airline tickets and comparison shopping ranked lower.

Reasons Why Internet Users in Europe* Say the Internet Has Made Their Life Better, 2002 (as a % of respondents)

Information gathering (net)	68 %
Good source for information	43%
Get information quickly	18%
Read the news	2%
Maps/directions	2%
E-Commerce (net)	35%
Shop/buy items online	18%
Financial information	10%
Buy airline tickets	7%
Comparison shopping	5%
Saves money	4%
Communication (net)	29 %
Convenience	19%
Communicatio with friends/relatives	11%
Faster communication	2%
Convenience (net)	24%
Saves time	10%
No need to travel	7%
Availability	2%

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Methodology
Technology Infrastructure
Internet Usage
Total E-Commerce
B2C E-Commerce
B2C E-Commerce

B. Revenue Projections

Western Europe should materialize as a robust region for e-commerce. Forrester Research expects B2C e-commerce revenues to grow from \$29.6 billion in 2002 to \$138.3 in 2006. Forrester sees Eastern European B2C ecommerce outstripping Latin America until 2006, at which point Latin America will leap ahead of Eastern Europe for the first time in the five-year growth period.

In addition to macroeconomic disadvantages, Eastern Europe will need to overcome infrastructure, PC penetration, language and cultural issues in order for Internet access to become more viable in the region. All told, by 2006, B2C revenues for Europe should total \$144.6 billion, or about 40% of the worldwide total.

B2C E-Commerce Worldwide, by Region, 2002-2006 (in billions)

	2002	2003	2004	2005	2006
North America	\$78.1	\$108.4	\$141.8	\$180.0	\$219.8
Asia-Pacific	\$23.9	\$43.6	\$76.2	\$123.6	\$185.2
Western Europe	\$29.6	\$48.0	\$72.7	\$102.6	\$138.3
Latin America	\$0.5	\$1.1	\$2.1	\$3.9	\$7.0
Eastern Europe	\$0.6	\$1.3	\$2.4	\$4.0	\$6.3
Africa and Middle East	\$0.8	\$1.4	\$2.3	\$3.6	\$5.2
Worldwide total	\$133.6	\$203.7	\$297.4	\$417.6	\$561.8

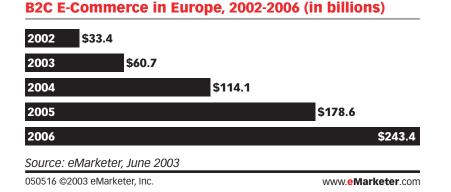
Note: numbers may not add up to total due to rounding Source: Forrester Research, December 2001

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Methodology
Technology Infrastructure
Internet Usage
Total E-Commerce
B2C E-Commerce

European Forecast

eMarketer expects European online commerce to reach \$243.4 billion in 2006. Taking into account comparative estimates, eMarketer sees online consumer commerce in Europe continuing to grow briskly as far more Europeans come online and an increased level of experience raises the number of online buyers. While eMarketer sees Eastern European e-commerce growing quickly toward the end of the forecast period, the small overall economies of these countries will limit their contribution.



In projecting European online commerce, there is no clear historical benchmark standard such as the Department of Commerce in the United States. Jupiter, Forrester and Yankee Group see relatively straight-line growth of varying rates. These forecasts are among the more conservative and top off with Forrester's estimates of \$171.3 billion by 2006.

Methodology Technology Infrastructure Internet Usage

Total E-Commerce

B2C E-Commerce B2B E-Commerce

Index of Charts

eMarketer's estimate for 2006 is significantly higher. However, eMarketer's 2005 estimate is below GartnerG2's estimate for that year.

Comparative Estimates: B2C E-Commerce Revenues in Europe, 2000-2006 (in billions)

	– \$20.0	_	_	\$114.1 –	\$178.6 \$207.8	\$243.4 –
_	\$20.0	-	-	-	\$207.8	-
_	_	¢38 U				
		ψ 30.0	\$58.8	\$90.3	\$127.4	\$171.3
_	\$57.6	\$85.0	-	-	\$225.0	-
_	_	\$33.4	-	-	-	_
_	-	\$23.5	\$33.6	\$45.3	\$59.4	\$75.6
3.1	\$12.4	\$20.1	\$30.3	\$49.5	\$73.0	\$92.1
		 8.1 \$12.4	\$23.5 8.1 \$12.4 \$20.1	\$33.4 - \$23.5 \$33.6 8.1 \$12.4 \$20.1 \$30.3	\$33.4 \$23.5 \$33.6 \$45.3 8.1 \$12.4 \$20.1 \$30.3 \$49.5	\$33.4 \$23.5 \$33.6 \$45.3 \$59.4

exchange rate of approximately 1.14 sampled during the week of 23 June 2003

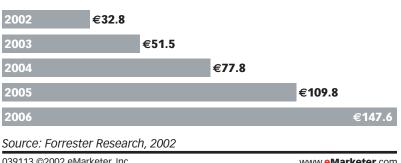
Source: eMarketer, June 2003; various, as noted, 2001-2003

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eMarketer's projected rate of B2C e-commerce growth is somewhat rosier than Forrester Research's projections for Europe's online retail sector, as the following chart illustrates. Forrester projects that online consumers will purchase 57% more online in 2003 than they did in 2002 as they begin to extend their purchases to more retail categories and bigger-ticket items.

B2C E-Commerce Spending in Europe, 2002-2006 (in billions of €)



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Methodology Technology Infrastructure Internet Usage Total E-Commerce B2B E-Commerce B2B E-Commerce Index of Charts However, eMarketer's estimates are considerably more conservative than projections by GartnerG2. The research firm estimated that European online shopping revenues would reach EUR 97.8 billion (approximately \$85 billion) in 2002, amounting to 2.3% of all retail sales.

B2C E-Commerce Sales in Europe, 2001, 2002 & 2005 (in billions)

2001	\$57.6		
2002		\$85.0	
2005			\$225.0
Source: Gar	tnerG2, March 20	002	
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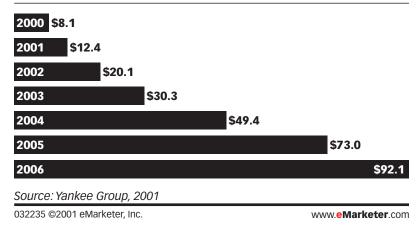
Considering that figures from the US Commerce Department show that B2C e-commerce accounts for less than 2% of total US retail purchases, the GartnerG2 figure likely overestimates the share of the market captured by e-commerce in Europe.

Online Retail Sales in Europe, 2002 & 2005 (as a % of total retail sales)

2002	2.3%	
2005		5.6%
Source: GartnerG2, 20	02	
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By contrast, a 2001 estimate by the Yankee Group – that consumers in Western Europe will spend \$20 billion online in Western Europe in 2002 – is likely to underestimate the true potential of the B2C sector. (Note that Yankee's estimates for US e-commerce are also among the most conservative.)

B2C E-Commerce Revenues in Western Europe, 2000-2006 (in billions)



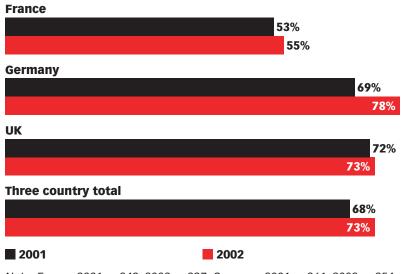
59 @2003 eMarketer, Inc. Reproduction of information sourced as eMarketer is prohibited without prior, written permission. Note: all data in this report (other than that sourced as eMarketer) was obtained from published, publicly available information. Methodology Technology Infrastructure Internet Usage Total E-Commerce B2B E-Commerce B2B E-Commerce Index of Charts

C. Online Shoppers and Buyers

Online Shoppers

Researching products online is often a popular activity in countries with experienced Internet poacross-the-board growth for online shopping in Europe's three major markets. Overall, the percentage of Europeans in three leading countries who were research products online jumped from 68% to 73%. Germany continued to lead the surveyed countries in this area.

Online Buyers in France, Germany and the UK Who Get Information Online about Products to Buy, 2001 & 2002 (as a % of respondents)



Note: France-2001 n=249, 2002 n=237; Germany-2001 n=261, 2002 n=254; UK-2001 n=252, 2002 n=256; Total-2001 n=762, 2002 n=747 Source: America Online/RoperASW, March 2003

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60

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"Although growth in the online population as a whole in Europe is slowing, growth in the number of online shoppers remains strong. As their online tenure increases and as well-known high-street brands invest heavily online, European Internet users feel increasingly comfortable in shopping online."

- Michele Poliziani, associate analyst, Jupiter Research

Methodology Technology Infrastructure Internet Usage Total E-Commerce B2B E-Commerce B2B E-Commerce Index of Charts According to RoperASW, a significant percentage of consumers in the three largest Western Europe economies research products online and purchase them offline. The research company found that the UK leads in this behavior with 64% of consumers switching channels as they completed their purchases. Nearly as high a percentage of surveyed Germans reported this kind of cross-channel purchases, while France trailed its neighbors in "channel-hopping."

Home Internet Users in France, Germany and the UK Who Research a Product Online and Purchase Offline*, 2002 (as a % of respondents)

United Kingdom	64%
Germany	57%
France	40%
Note: France-n=263; Germany-n=250; UK-n=24 at a store or through a catalog" Source: RoperASW, March 2003	4; *offline defined as "like
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As in the US, online consumers in Europe value the convenience that online shopping offers. For example, nearly three in 10 online consumers (28%) say they have shopped online while in their pajamas.

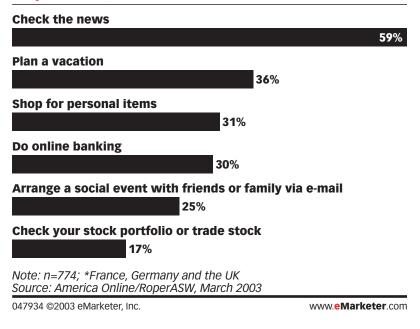
Online Buyers in France, Germany and the UK Who Have Shopped in Their Pajamas, 2002 (as a % of respondents)

France		28%
Germany	25%	
ик		33%
Note: France-n=263; Germany-n=250; UK-n=244 Source: America Online/RoperASW, March 2003		

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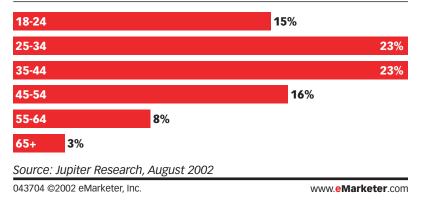
Methodology Technology Infrastructure Internet Usage Total E-Commerce B2E E-Commerce B2B E-Commerce Index of Charts Shopping remains a popular activity for consumers at work as well as at home. While checking news was the most popular personal online activity cited by respondents in France, Germany and the UK, the online shopping activities of planning a vacation and shopping for personal items each garnered a response from more than 30% of those surveyed.

Personal Activities Conducted Online at Work among Internet Users in Europe*, 2002 (as a % of respondents)



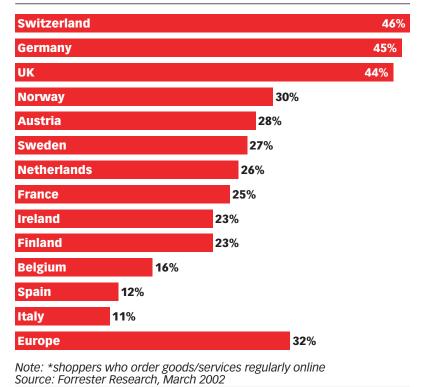
Jupiter Research estimates that Western Europeans aged 25 to 44 constitute the largest segment of online shoppers, representing 46% of the total. Shoppers aged 55 and older comprised only 11% of online shoppers, and those 65 and older accounted for only 3% of the total.

Western European Visitors to European Retail Web Sites, by Age, April 2002 (as a % of online visitors)



Methodology Technology Infrastructure Internet Usage Total E-Commerce B2B E-Commerce B2B E-Commerce Index of Charts According to Forrester Research, the fourth quarter of 2001 saw a wide variety in the percentage of those shopping online in various European countries. The three leading countries – Switzerland, Germany, and the UK, saw 44% or more of their population shopping online – a gap of at least 14 percentage points over Norway, the next highest-ranked country. France, the third-largest economy in Europe, saw only one-fourth of its population shop online in the quarter. Bringing up the rear were Belgium, Spain, and Italy, where only 11% of the population shopped online in the fourth quarter of 2003.

Percent of Population Shoppping Online in Selected Countries in Europe, Q4 2001



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Methodology
Technology Infrastructure
Internet Usage
Total E-Commerce
B2C E-Commerce
B2B E-Commerce
Index of Charts

Barriers to Shopping Online

In attempting to discover the reasons why Europeans who have not yet shopped online have abstained, RoperASW found that concerns about credit card security led the pack, with 61% of respondents stating they were worried about the unauthorized use of their financial information. Over half of respondents expressed a desire for a satisfaction guarantee. Half of the respondents sought free shipping, the ability to pick up and return goods at a local store and deeper discounts online.

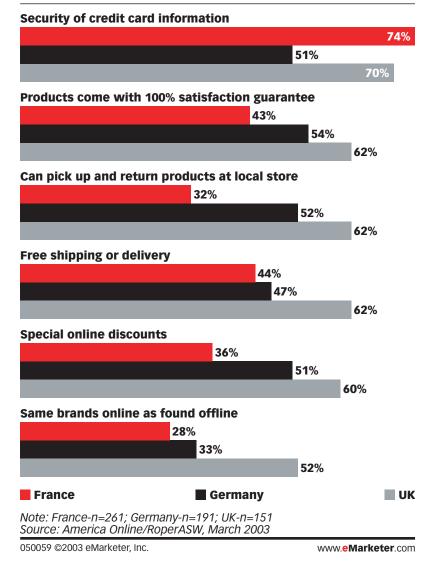
Factors that Would Motivate Non-Online Shoppers in Europe* to Shop Online, 2002 (as a % of respondents)

Security of credit card information	619
Products come with 100% satisfaction guarantee	54%
Can pick up and return products at local store	50%
Free shipping or delivery	50%
Special online discounts	50%
Same brands online as found offline 37%	
<i>Note: n=602; *France, Germany and the UK Source: America Online/RoperASW, March 2003</i>	

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Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts With a few exceptions, barriers to online shopping adoption were fairly consistent among German, French and British respondents. Germans cited the desire for a satisfaction guarantee as the most popular inhibitor to online shopping, while French respondents ranked the ability to pick up and return goods at a store with a relatively low priority. In addition, French and British respondents were exceptionally concerned about credit card security, with 70% or more respondents expressing worry about security.

Factors that Would Motivate Non-Online Shoppers in France, Germany and the UK to Shop Online, 2002 (as a % of Internet users)



Methodology Technology Infrastructure Internet Usage Total E-Commerce B2E E-Commerce B2B E-Commerce Index of Charts "Europeans are less likely to have credit cards, which are the easiest way to shop online, and the regulations impede the extent to which online retailers can offer discounts and promotions in many countries."

- Jed Kolko, analyst, Forrester Research

Online Buyers

AOL and RoperASW have found that the number of online buyers increased significantly between 2001 and 2002 in each of Europe's three largest economies, leading to an overall growth of 15%. While the UK remains slightly ahead of Germany in terms of the number of online buyers, France posted the strongest growth rate at 41%.

Online Buyers* in France, Germany and the UK, 2001 & 2002 (as a % of respondents)

	2001	2002
France	34%	48%
Germany	54%	68%
UK	62%	70%
Three country total	54%	62 %

Note: France-2001 n=502, 2002 n=500; Germany-2001 n=514, 2002 n=504; UK-2001 n=502, 2002 n=500; Total-2001 n=1,518, 2002 n=1,504; *ever made a purchase online Source: America Online/RoperASW, March 2003

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According to RoperASW, 62% of Europeans have made a purchase online, a 14% increase from the previous year when little more than half of users had made a purchase online. France, which has seen fewer people purchase online, made a larger percentage jump, going from a third of its population buying online to nearly half. By contrast, the UK, which has seen higher penetration of online purchases, grew at a slower rate, edging to 70% from a 62% level in 2001.

Online Buyers* in France, Germany and the UK, 2001 & 2002 (as a % of respondents)

	2001	2002
France	34%	48%
Germany	54%	68%
UK	62%	70%
Three country total	54 %	62%

Note: France-2001 n=502, 2002 n=500; Germany-2001 n=514, 2002 n=504; UK-2001 n=502, 2002 n=500; Total-2001 n=1,518, 2002 n=1,504; *ever made a purchase online Source: America Online/RoperASW, March 2003

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Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts Not surprisingly, when AOL and RoperASW narrowed the scope of the question to ask which respondents regularly or frequently shopped online, the percentage dropped somewhat, but not dramatically. The three surveyed countries each showed a marked increase in regular or occasional shoppers, as did Europe as a whole, which saw its number of frequent shoppers rise 18%. By far, those who ever shop online are likely to shop online again.

Frequent Online Buyers* in France, Germany and the UK, 2001 & 2002 (as a % of respondents)

	2001	2002
France	24%	34%
Germany	39%	50%
UK	55%	63%
Three country total	43%	51%

Note: France-2001 n=502, 2002 n=500; Germany-2001 n=514, 2002 n=504; UK-2001 n=502, 2002 n=500; Total-2001 n=1,518, 2002 n=1,504; *regularly or occasionally make purchases online Source: America Online/RoperASW, March 2003

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On average, Europeans spent EUR 430 online in a three-month span, according to RoperASW. The total was higher than that for France or Germany, where respondents reported spending only EUR 315 online in the same time period. In the UK, however, the average amount spent was EUR 605, far ahead of the other surveyed countries. Taken with other RoperASW data, it appears that while overall fewer French consumers are buying online than Germans, they are spending more per capita.

Average Amount Spent Online in the Last Three Months by Home Internet Users in France, Germany and the UK, 2002



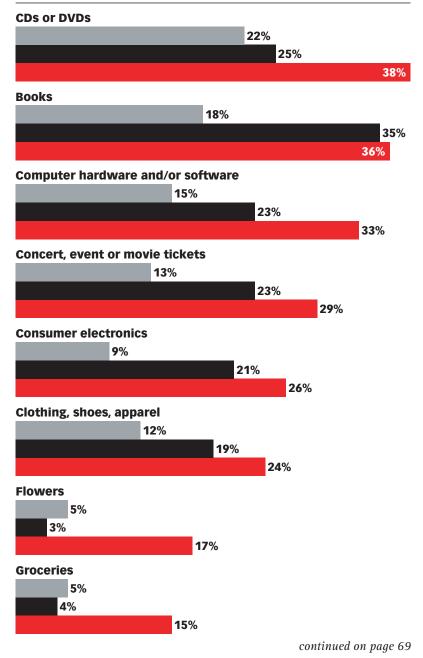
Source: America Online/RoperASW, March 2003

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Germany's reputation for being a country of voracious readers was evidenced by German consumers nearly matching the UK in online books purchased, and France came close to matching Germany in the number of CDs and DVDs purchased. Germany trailed France in some of the least popular categories, such as pet food and stamps, but this may be partly due to a low sample size of people purchasing these items online.

Products Purchased Online by Internet Users in France, Germany and the UK, 2002 (as a % of respondents who regularly or occasionally purchase each item)





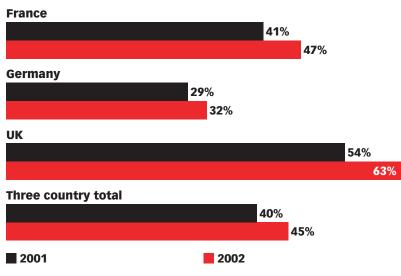
Note: France-n=500; Germany-n=504; UK-n=500 Source: America Online/RoperASW, March 2003

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Across Europe, the percentage of Europeans who expect to make more purchases online increased in 2002 to 45%, up from 40% in 2001. Not only were Germans the least inclined to buy more online, but they also exhibited the smallest increase from 2001. In contrast, respondents in the UK led all respondents both in absolute percentage (63%) and percent increase (16.7%) from 2001.

Online Buyers in France, Germany and the UK Who Expect to Increase Their Number of Online Purchases in the Next Few Years, 2001 & 2002 (as a % of respondents)



Note: France-2001 n=253, 2002 n=263; Germany-2001 n=253, 2002 n=250; UK-2001 n=250, 2002 n=244; Total-2001 n=756, 2002 n=757 Source: America Online/RoperASW, March 2003

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What's happening across the pond? Gain a better global sense by reading eMarketer's "North America E-Commerce: B2B & B2C" report, with broad coverage of the e-commerce landscapes in both the US and Canada:

http://www.emarketer.com/products/report.php?b2b_b2c_noam_may03

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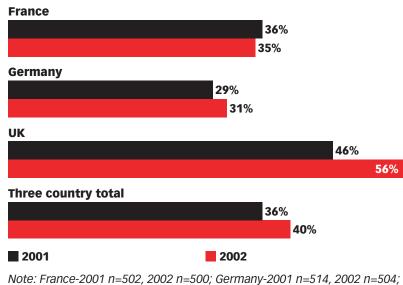
Methodology
Technology Infrastructure
Internet Usage
Total E-Commerce
B2C E-Commerce
B2C E-Commerce

Category Review

Travel

Online travel booking is significantly more popular in the UK than other major European economies. In 2002, 56% of UK respondents reported booking travel online. The next closest percentage was France with only 35% booking online, a percentage that saw a slight decrease from 2001.

Internet Users in France, Germany and the UK Who Book Travel Reservations or Tickets Online, 2001 & 2002 (as a % of respondents)



Note: France-2001 n=502, 2002 n=500; Germany-2001 n=514, 2002 n=504; UK-2001 n=502, 2002 n=500; Total-2001 n=1,518, 2002 n=1,504 Source: America Online/RoperASW, March 2003

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"There are fewer travel-oriented Web sites in Europe relative to the hundreds of Web sites, consumer portals, and auction-style sites that are available and frequented by US-based Internet users. That helps to boost traffic numbers to individual niche travel sites in European markets."

— Paul Ritter, Internet business strategies analyst, Yankee Group

Methodology Technology Infrastructure Internet Usage Total E-Commerce B2E E-Commerce Index of Charts One phenomenon in the online travel market has been the more direct involvement of travel companies. An example of this is Opodo, a venture supported by many of Europe's top airlines – an idea similar to its North American counterpart, Orbitz. The Centre for Regional and Tourism Research has seen online travel direct sales increased significantly from 1998 to 2002. Only in 2003 has the balance shifted slightly in favor of travel intermediaries.

Online Travel Sales in Western Europe, by Channel, 1998-2003

1998		
	51%	49 %
1999		
	52%	48%
2000		
	60 %	40%
2001		
	63%	37%
2002		
	64%	36%
2003		
	<mark>63</mark> %	37%
Direct sales	Intermediaries	
Source: Centre for Regior	nal and Tourism Research - Denma	rk, March 2003

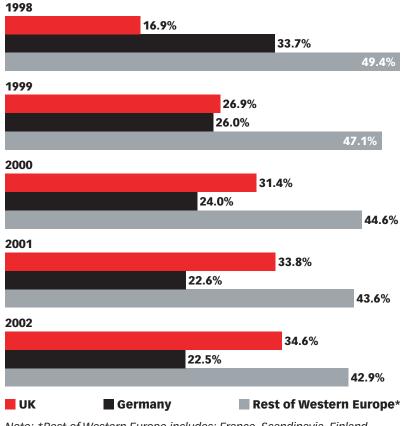
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The Centre has also seen the UK pick up significant share from 1998 to 2002 at the expense of Germany and other Western European countries. The UK share has more than doubled in the five-year time span, while the German share has decreased by 33%; other Western European countries have lost relatively less of the market.

Online Travel Revenue Share in Western Europe, by Country, 1998-2002 (as a % of total)



Note: *Rest of Western Europe includes: France, Scandinavia, Finland, Iceland, Benelux, Austria, Switzerland, Ireland, Spain, Portugal and Greece Source: Centre for Regional and Tourism Research - Denmark, March 2003

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While air travel continues to dominate the consumer e-commerce landscape in Western Europe, the Centre for Regional and Tourism Research has seen little change between 2002 and 2003. Hotels and packaged tours managed to gain over 10% of revenue share in both years while car rentals remained steady at only 2.4% of online travel revenue share.

Online Travel Market Share in Western Europe, by Channel, 2000 & 2003 (as a % of total)

		61.9 %
		61.8%
Hotels		
12.2%		
11.9%		
Packaged tours		
11.6%		
11.1%		
Rail		
9.5%		
10.6%		
Rental cars		
2.6%		
2.4%		
Other services		
2.3%		
2.2%		
2002	2003	
Source: Centre for Regional ar	nd Tourism Research - Denm	ark, March 2003
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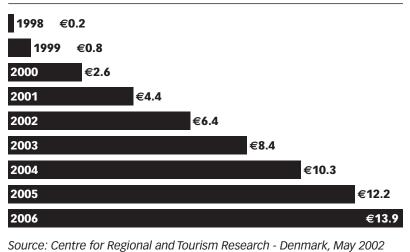
PhocusWright sees online travel continuing to grow at a rapid pace in Europe. The travel research firm has projected that revenues from online travel will grow from EUR 7.6 billion in 2002 to EUR 27.9 billion in 2007.

Online Travel Revenues in Europe, 2002 & 2007 (in billions of €) 2002 €7.6 2007 €27.9 Source: PhoCusWright Inc., May 2003 049629 ©2003 eMarketer, Inc. www.eMarketer.com

73

Methodology Technology Infrastructure Internet Usage Total E-Commerce B22 E-Commerce B2B E-Commerce Index of Charts The Centre for Regional and Tourism Research expects revenue growth to be fairly linear for the next three years, topping off at nearly EUR 14 billion by 2006. For the period from 1998 to 2006, the Centre expects online travel revenue to grow at a CAGR of 70%,

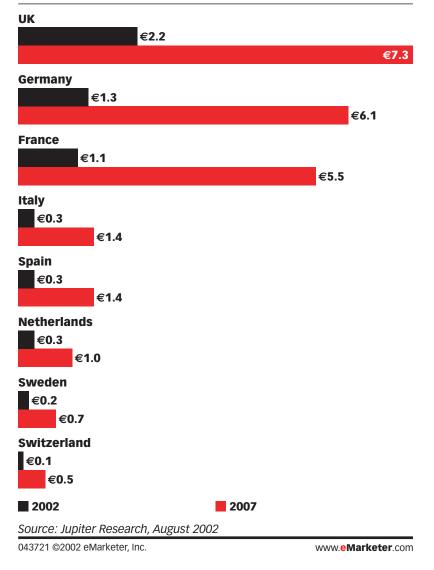
Online Travel Revenues in Western Europe, 1998-2006 (in billions of €)



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Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts Jupiter Research expects Europe's three largest economies to experience tremendous growth in online travel from 2002 to 2007. The UK is expected to lead the charge, spending EUR 7.3 billion, up from its 2002 marketleading number of EUR 2.2 billion. Germany and France are expected to narrow the gap somewhat. Both countries will grow from 2002 sales of under EUR 1.3 billion and EUR 1.1 billion to EUR 6.1 billion and EUR 5.5 billion, respectively. Online travel sales in Germany will grow at 370% in the five-year time frame while in France they will exactly quadruple. Sweden and Switzerland will continue to remain under the EUR 1 billion mark, according to the market research firm.

Online Travel Sales for Select Countries in Western Europe, 2002 & 2007 (in billions of €)



Other Retail Categories

According to Visa International, e-commerce sales across a variety of retail services enjoyed very strong growth between the fourth quarters of 2001 and 2002. Even the slowest improving retail categories grew 47%, while online sales for computing and sports more than doubled, bringing the total retail category growth to 112%. However, even that growth was dwarfed by some of the astounding increases seen in the travel sector. Car rentals increased nearly tenfold while airline e-commerce grew an incredible 1,326%. Online hotel sales lagged far behind at 125%, which is a number more in line with other e-commerce growth categories in Western Europe.

"Almost 50% [of Europeans] expect to increase their level of purchasing in the next few years. Shopping online is emerging as a truly mainstream activity in Europe."

- Philip Rowley, president, AOL Europe

Services also saw strong growth, but with rates that were more in line with retail than the hot tourism and entertainment (T&E) sector. Services such as insurance and utilities grew more than 110%, which was close to the total retail growth rate.

Growth of B2C E-Commerce Sales via Visa in the EU, by Sector, Q4 2001 & Q4 2002 (as a % increase/decrease vs. prior year)

Retail - general	91%
Retail - computing	149%
Retail - electronics	47%
Retail - sports	164%
Retail - books	74%
Retail - supermarkets and other foods	98%
Total retail	112%
Services - insurance	114%
Services - utilities	119%
Total services	57%
T&E* - airlines	1,326%
T&E - hotels	125%
T&E - car rentals	947%
Total T&E	531%
Note: *Tourism and Entertainment Source: Visa International, February 2003	

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The London Business School has utilized the Future Media Expert Panel to predict the percentage of purchases conducted across various categories online in Continental Europe. Among the leading categories the panel evaluated were music, with nearly half of all revenues predicted to come from the Internet by 2007. However, this may be attributed more to a decline in traditional CD sales than anything else. Second was financial services, with 27% of purchases moving online, and a number of other categories hovering around the 20% mark, including travel, tickets and car sales. Clothing trailed the categories included, but the category has been picking up some steam recently in the United States after a slow start.

Percent of Purchases Conducted Online in Continental Europe, by Category, 2002, 2004 & 2007 (as a % of total category revenues)

	2002	2004	2007
Music retailing	15%	27%	47%
Travel sales	6%	12%	20%
Financial services	12%	19%	27%
Books	14%	15%	20%
Ticket sales	6%	14%	22%
Electronic goods	4%	7%	13%
Car sales	5%	10%	18%
Clothing	3%	5%	8%
Gambling	4%	9%	14%
Newspapers	5%	8%	13%
Groceries	2%	5%	10%

Note: n=60; based on the Future Media Expert Panel consisting of experts chosen because they had regularly been cited by the media on the issue of new media or because they were recommended by other experts Source: London Business School, September 2002

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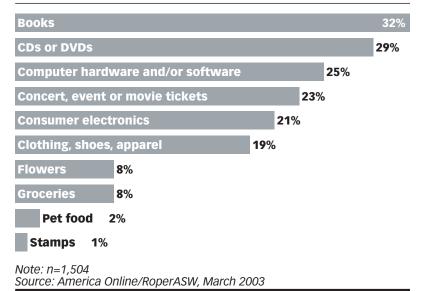
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77

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Commodity entertainment products, the goods that have fueled the growth of leading e-tailers like Amazon.com, are also popular in Europe. Books and CDs/DVDs led the pack with roughly three out of every 10 Europeans purchasing these items. Close behind were PC hardware and software, event tickets, and consumer electronics. Meanwhile, the least popular categories were pet food and stamps; both of which attracted much investment in the Web's venture capital investment heyday. Groceries, however, which were purchased by 8% of Europeans, have fared better in Europe than in the US.

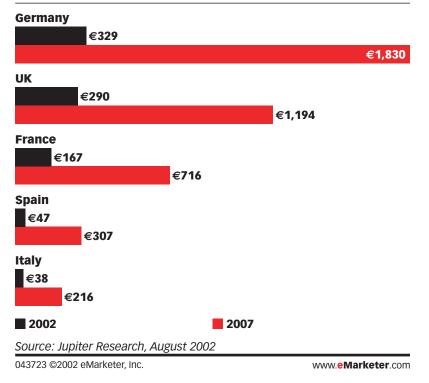
Products Purchased Online by Internet Users in Europe, 2002 (as a % of respondents who regularly or occasionally purchase each item)



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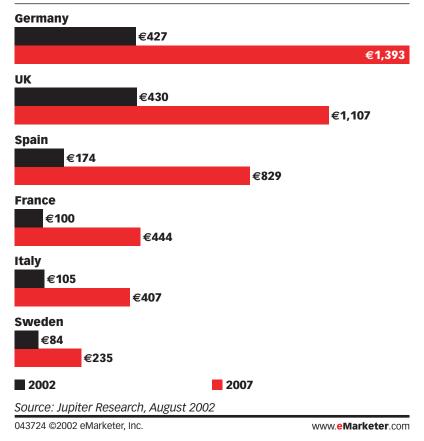
Methodology Technology Infrastructure Internet Usage Total E-Commerce B2E E-Commerce B2B E-Commerce Index of Charts Jupiter sees the online apparel market growing faster than the online book market in the UK and Germany. In Germany, Online apparel is expected to reach over EUR 1.8 billion by 2007 in Germany alone.

Online Apparel Sales for Select Countries in Western Europe, 2002 & 2007 (in millions of €)



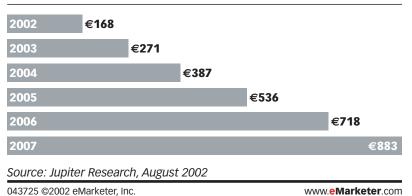
Methodology Technology Infrastructure Internet Usage Total E-Commerce B2E E-Commerce B2B E-Commerce Index of Charts Jupiter also sees strong growth for the Western European online book market, which is expected to reach well in excess of EUR 1 billion in both Germany and the UK. Online book sales should reach EUR 829 million in Spain, where the market size will be more than twice as large as that of Italy.

Online Book Sales for Select Countries in Western Europe, 2002 & 2007 (in millions of \in)



Methodology Technology Infrastructure Internet Usage Total E-Commerce B2B E-Commerce B2B E-Commerce Index of Charts Jupiter Research predicts strong five-year growth for online entertainment. The research group sees accelerating growth of online video sales until 2006, after which the market will continue to grow but at a slower clip from 2005. In contrast, the road for online ticket events is expected to see only a slight increase in 2004 before resuming stronger growth in 2005. At over EUR 1.4 billion by 2007, online sales of event tickets in Western Europe will eclipse sales of video, which are expected to reach EUR 883 million in the same year.

Online Video Sales in Western Europe, 2002-2007 (in millions of €)



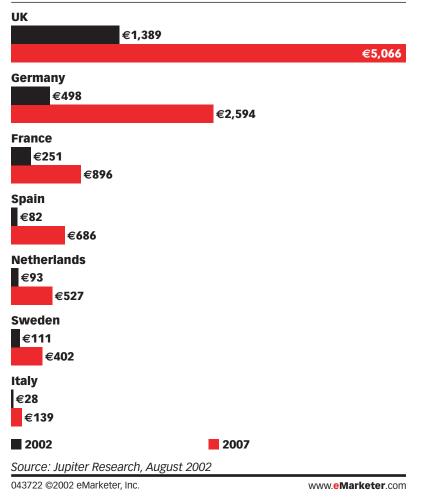
Online Event Ticket Sales in Western Europe, 2002-2007 (in millions of €)

2002	€316			
2003		€483		
2004		€533		
2005			€848	
2006				€1,117
2007				€1,446
Source: Jup	iter Research,	, August 2002		

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Methodology Technology Infrastructure Internet Usage Total E-Commerce B2B E-Commerce B2B E-Commerce Index of Charts Despite enjoying a modest renaissance in the US, the online grocery market in Western Europe has limited potential, according to Jupiter. The UK has the largest potential market, which is expected to grow from nearly EUR 1.4 billion in 2002 to just over EUR 5 billion in 2007. The only other market that is expected to top EUR 1 billion is Germany, no doubt in part due to its large population.

Online Grocery Sales for Select Countries in Western Europe, 2002 & 2007 (in millions of \in)



Looking at gift-giving in select European economies, 47% of UK respondents occasionally or regularly purchased online for others. In contrast, 25% of French respondents reported such behavior, as did approximately one-fourth of German respondents.

Frequency with Which Online Buyers in France, Germany, and the UK Shop Online for Others, 2002 (as a % of online buyers)

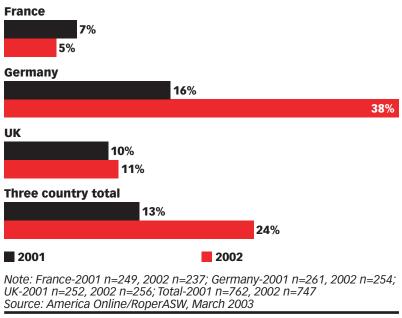
France		36%
Germany	26%	
ИК		47%
Note: France-n=239; Germany-n=313; UK- Source: America Online/RoperASW, March	n=349 1 2003	

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Online consumers in Germany, France, and the UK have been slower to participate in auctions (which are perceived as risky) than they have in B2C e-commerce sites. However, auctions are getting more popular. The threecountry total nearly doubled in percentage from 13% to 24%, while the number of Germans reporting participation in online auctions soared. In contrast, the percentage of UK respondents grew only slightly, and the number of French respondents actually decreased to 5% from 7% in 2001.

Online Buyers in France, Germany and the UK Who Take Part in Online Auctions, 2001 & 2002 (as a % of respondnets)



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83

D. Non-Internet E-Commerce

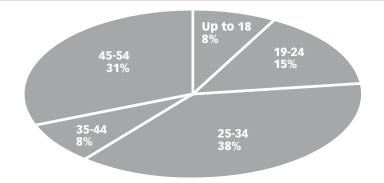
"What Europe needs is to replicate the business model established in Japan by DoCoMo, where the operator acts as the distributor of content, not the content provider."

— Declan Lonergan, analyst, Yankee Group

Mobile Commerce

The Judge Institute of Technology has found that the two largest groups of m-commerce users are in the age ranges of 45-54 and 25-34. Oddly, the 35-44 age range tied for the lowest percentage of users, accounting only for 8% of usage, far below the bordering age ranges, which, combined, accounted for nearly 70% of usage. Those under 25 constitute nearly a quarter of the percentage of m-commerce users.

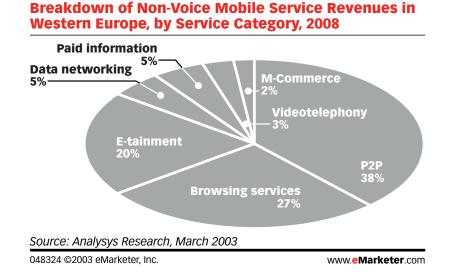
Use of M-Commerce among Internet-Enabled Phone Users in Europe*, by Age Group, June 2002 (as a % of respondents)



Note: *includes France, Germany, Italy, Spain, Sweden and the UK Source: A. T. Kearney/University of Cambridge - Judge Institute of Management, August 2002

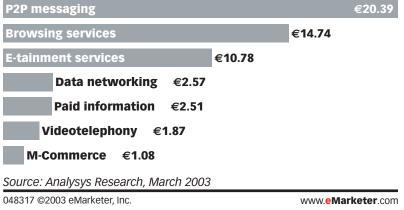
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Methodology Technology Infrastructure Internet Usage Total E-Commerce B22 E-Commerce B2B E-Commerce Index of Charts Western European carriers have been capitalizing on a broad array of data services. The largest category of data-driven revenue is expected to continue coming from users contacting each other via technologies such as SMS and MMS. These technologies capitalize on the same value proposition established with voice – that of keeping in touch. Analysys Research projects that while other kinds of data transactions – particularly browsing and entertainment services –will grow to rival these peer-to-peer applications by 2008, m-commerce at this point accounts for only 2% of revenue.



While m-commerce is expected to be the least significant data-driven revenue stream, it will still account to account for over EUR 1 billion, significantly less than the next highest category, videoconferencing.

Non-Voice Mobile Service Revenues in Western Europe, by Service Category, 2008 (in billions of €)

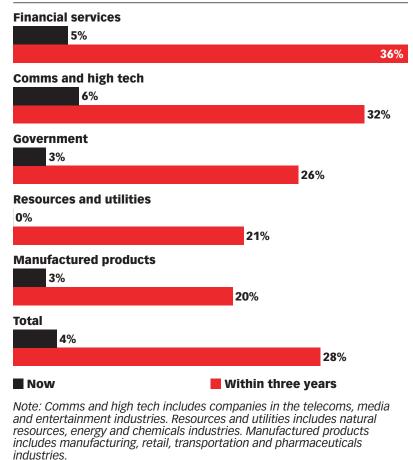


Methodology
Technology Infrastructure
Internet Usage
Total F-Commerce
B2C E-Commerce
B2C E-Commerce B2B E-Commerce

Television Commerce

In an executive survey of European companies, Accenture found strong support for the future of t-commerce across industries, even if utilization of the medium was quite low in 2002. Not surprisingly, communications and high-tech companies led the pack, but with only 6% reporting current use of t-commerce. However, financial services companies were must bullish on t-commerce long-term, with over a third expecting to use the format in the future. Utility and manufacturing companies said they were least likely to use the television for commerce in the future, with about one in five expressing an intention to do so.

Current and Future Use of Television Commerce, by Market Segment, 2002 (as a % of executives surveyed)



Source: Accenture, 2002

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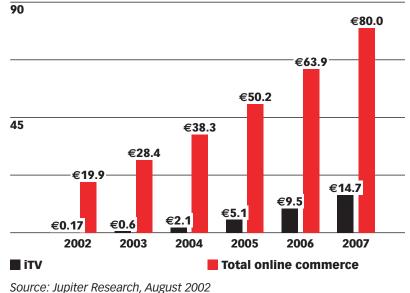
Methodology
Technology Infrastructure
Internet Usage
Total E-Commerce
B2C E-Commerce
B2B E-Commerce
Index of Charts

"Digital TV is not always the ideal medium for selling, and the limitations of the mobile phone are immediately apparent. However, each can play a vital role in improving customer relationships, branding and loyalty, resulting in greater profitability in a market where margins continue to fall."

— Gill Mander, business analyst, GartnerG2

Jupiter Research sees e-commerce revenues from interactive TV as a relatively small but growing fraction of total e-commerce revenues. The iTV revenue stream will account for less than 15% of total e-commerce revenues in 2006, but will grow to 18% in 2007, when it reaches EUR 14.7 billion. As such, it will represent a 144% CAGR from 2002 to 2007.

iTV Revenues vs. Total Online Commerce Revenues in Western Europe, 2002-2007 (in billions of €)



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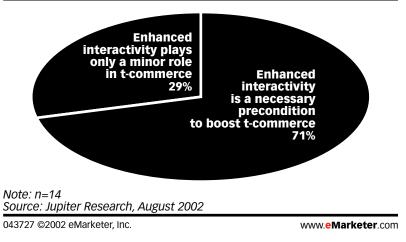
Methodology Technology Infrastructure Internet Usage Total E-Commerce B2B E-Commerce B2B E-Commerce Index of Charts The vast majority of Western European retailers are not deploying any form of e-commerce through television sets. Of the 47% that reported tcommerce efforts, an equal percentage use shopping channels and half display a shopping window that is viewable during a broadcast. The walled garden approach, often touted as the model with the most potential for interactivity by providing limited access to Web-like interactive content, has been utilized by only 5% of surveyed retailers.

T-Commerce Sales Formats Used by Western European Retailers, 2002 (as a % of respondents)

Not using TV as a sales channel	
	71%
Shopping channel	
21%	
Shopping window during broadcasting stream	
21%	
Walled garden	
5%	
Source: Jupiter Research, August 2002	
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While most retailers have not deployed t-commerce, a majority of the limited number of retailers surveyed by Jupiter identified interactivity as a necessary precondition to boost t-commerce. About one in three believed that interactivity played only a minor role in t-commerce.





88

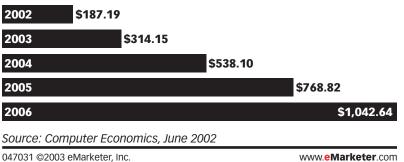
Methodology	7
I Technology Infrastructure	11
II Internet Usage	37
III Total E-Commerce	49
IV B2C E-Commerce	53
V B2B E-Commerce	89
A. Revenue Forecasts	90
B. Stage of E-Business Development	92
C. Use of E-Business Software and Services	98
D. Buy- and Sell-Side E-Business Initiatives	104
E. Participation in Online Exchanges	111
Index of Charts	121

Methodology
Technology Infrastructure
Internet Usage
Total E-Commerce
B2C E-Commerce
B2B E-Commerce
Index of Charts

A. Revenue Forecasts

Using a broad definition of e-commerce that includes online sales of business services such as digital products, books, airline tickets, office supplies, production materials, transportation services, and computer and other office equipment as well as online bill paying, Computer Economics estimates that B2B e-commerce revenues in Europe will grow by 67.8% in 2003, reaching \$314 billion by the year's end. Growth over the next three years will be brisk, with revenues spiraling upwards to more than \$1 trillion by 2006.

B2B E-Commerce in Europe, 2002-2006 (in billions)



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A comparative estimate from Forrester Research predicts that online trade in the EU will grow from EUR 77 billion (\$91.3 billion) in 2001 to reach EUR 2.2 trillion (\$2.6 trillion) by 2006. These two projections suggest that despite the fact that Europe has generally lagged behind North America in e-business adoption, there is an optimistic consensus about the region's future once new technology platforms are fully incorporated.

Online Trade in Europe, 2001 & 2006 (in billions of € and as a % of total business trade)

2001	€77 (1%)	
2006		€2,200 (22%)
Source: Fo	rrester Research, August 2002	

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One of the most optimistic projections comes from EITO, which believes Western Europe alone will produce EUR 1.9 trillion in B2B e-commerce revenues by 2006. In terms of total commercial activity, e-commerce sales still represent but a fraction – 1% in 2001, according to Forrester. However, e-commerce is expected to increase to 22% of total EU trade by 2006. This constitutes a very rapid growth horizon.

B2B E-Commerce Revenues in Western Europe, 2002 & 2006 (in billions of €)

2002	€270	
2006		€1,942
Source: 2003	European Information Technology Ob	oservatory (EITO), February
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Formatta	r prodicts that businesses in the UV	Commonses and Enon as will direct

Forrester predicts that businesses in the UK, Germany and France will direct an average 23% of their commercial activity to the Internet. However, citing EU members' relative levels of IT infrastructure investment, Forrester believes that Scandinavian countries, which have highly evolved technology infrastructures but smaller populations and economies than the three regional leaders, will lead other EU member states in the percentage of commercial activity that they will be able to channel online over the next several years. Southern European countries, on the other hand, are expected to remain laggards.

For example, Forrester estimates that e-commerce as a portion of total business spending will stay relatively low in Italy during 2003, at 2.2% of total online and offline commercial activity. By comparison, Sweden is expected to channel more than 13% of its total business-to-business trade online in 2003. Like Italy, Greece and Portugal are expected to bring relatively small portions of their total trade online as well, with neither country projected to send more than 10% of its business-to-business commercial activity online by 2006.

Taking a closer look at industry-specific trade, Forrester believes that by 2004, the European manufacturing sector will conduct EUR 945 billion (\$1.1 trillion) in online trade, or 9.9% of total business trade in the region. Of the leading verticals within this sector, the electrical equipment industry is expected to channel 11.7% of its sales online in 2003, up from 4.3% in 2002.

Methodology
Technology Infrastructure
Internet Usage
Total E-Commerce
B2C E-Commerce
B2B E-Commerce
Index of Charts

B. Stage of E-Business Development

According to the Economist Intelligence Unit's ranking of global e-business readiness, Sweden, Denmark and the Netherlands (tied with the US and UK for third place) scored the highest out of the 60 countries evaluated. Overall, Western European countries took seven of the top 10 spots.

The Economist Intelligence Unit (EIU) used an index that considered 30 variables in order to arrive at a final index score. Variables included each country's overall business and regulatory environment, the social and cultural infrastructure of each country, as well as consumer and business adoption levels of e-business and information technology.

Leading E-Business Ready Countries in Western Europe, 2003 (ranked by index score)

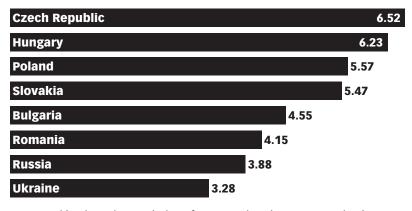
	•		•	
2003 rank in region	2002 rank in region	Country	Overall ranking (out of 60)	E-Readiness score (out of 10)
1	3 (tie)	Sweden	1	8.67
2	5	Denmark	2	8.45
3 (tie)	2	UK	3 (tie)	8.43
3 (tie)	1	Netherlands	3 (tie)	8.43
5	7	Finland	6	8.38
6	8	Norway	7	8.28
7	3 (tie)	Switzerland	8	8.26
8	6	Germany	13	8.15
9	9	Austria	14	8.09
10	10	Ireland	15	7.81
11	11	Belgium	17 (tie)	7.78
12	12	France	19	7.76
13	13	Italy	21	7.37
14	16	Portugal	22	7.18
15	14	Spain	23	7.12
16	15	Greece	26	6.83
	, ,		10 1 : 10	

Note: ranking based on an index of 1 to 10 wherein 10=most e-business ready Source: Economist Intelligence Unit, March 2003

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Russia and the nations of Eastern Europe are considerably farther behind their neighbors to the west. The Czech Republic, Hungary and Poland scored the highest, ranking 27th, 29th and 30th, respectively, out of the 60 countries that were surveyed worldwide. As part of their ascension to the EU (for those that are joining), however, their overall scores should see improvement.

Leading E-Business Ready Countries in Eastern Europe, 2003 (ranked by index score)



Note: ranking based on an index of 1 to 10 wherein 10=most e-business ready Source: Economist Intelligence Unit, March 2003

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93

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An even more comprehensive study conducted by the World Economic Forum (WEF), in partnership with INSEAD and the World Bank, listed Finland, the US and Singapore as the three most networked economies in the world. This study, which considered a total of 64 variables using three sub-indices, compared the relative technological preparedness of 82 national economies and their ability to participate in the benefits of information and communication technology (ICT). Within each sub-index, separate scores were assigned to individuals, businesses and government, the three major constituents within each country's national economy. The study employed a combination of subjective surveys and hard statistical data to examine each country's technology environment and its use of ICT.

Among the WEF's most important findings was that a high level of per capita ICT spending does not necessarily lead to extensive use of technology within any given national economy. Rather, it found that countries such as Finland, South Korea and Singapore have outperformed other economies thanks to regulatory environments and government initiatives that encourage the use of ICT among all three major constituencies within their countries.

Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts Taking a closer look at the study's Business Usage sub-index, businesses in Germany, Sweden and Finland scored the highest in terms of their current use of the Internet as of 2002. Among the factors considered for this sub-index were each country's level of business-to-consumer and business-to-business e-commerce activity, as well as the extent to which businesses were using the Internet for online marketing and other communications.

Leading Western European Economies' Business Usage of ICT, 2002-2003 (ranked by Networked Readiness Index score)

1. Germany	6.19
2. Sweden	5.96
4. Finland	5.93
5. Iceland	5.58
6. Netherlands	5.51
8. United Kingdom	5.42
9. Denmark	5.40
10. Switzerland	5.39
11. Norway	5.23
13. France	5.14

Note: based upon an index of 1 to 7, where 7 equals most networked; ranking based on 82 economies included in study Source: INSEAD, World Economic Forum, February 2003

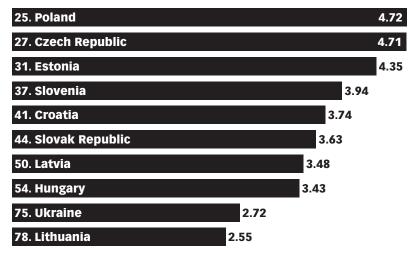
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The WEF study reached similar conclusions about Eastern Europe as the EIU survey, with the Czech Republic receiving a ranking of 28th overall within its broad Networked Readiness Index. Hungary ranked 30th out of the 82 countries that were surveyed, while Poland ranked 39th. Russia and Ukraine were at the bottom of the Networked Readiness Index, coming in at 69th and 70th overall.

Within the Business Usage sub-index, Poland, the Czech Republic and Estonia had the highest scores, with Slovenia ranking a respectable 37th overall. Business network use in Hungary was particularly low at 54th overall, especially when compared with Hungary's higher rankings for individual and government use. Ukraine ranked 75th in the Business Usage sub-index, slightly ahead of Russia, which ranked 81st out of 82 countries' business usage scores.

Leading Eastern European Economies' Business Usage of ICT, 2002-2003 (ranked by Networked Readiness Index score)



Note: based upon an index of 1 to 7, where 7 equals most networked; ranking based on 82 economies included in study Source: INSEAD, World Economic Forum, February 2003

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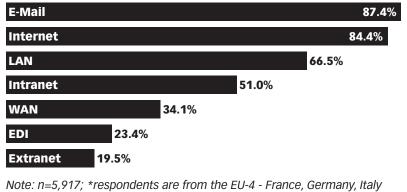
As part of the European Commission's effort to better understand how businesses in Europe are using the Internet for their day-to-day operations, E-Business Watch conducted a survey of more than 10,000 IT managers at companies across the European Union in June and July of 2002. A total of 15 industry sub-sectors were surveyed, with an average sample of 100 companies per sub-sector polled in each country.

The study's top-level results were broken out to include the EU-4 (Germany, France, Italy and the UK), which, among the industries surveyed, typically account for 60% to 70% of all trade. Note that because of the dominance of these four countries, the figures for the full EU-15, where available, tend to be similar to those for the EU-4.

Methodology Technology Infrastructure Internet Usage B2C E-Commerce B2B E-Commerce Index of Charts

E-Business Watch discovered that as of mid-2002, 84.4% of all companies in the EU-4 had Internet access, while 23.4% of respondents used EDI networks, and 19.5% used an extranet. EDI use was most common among transport equipment and chemicals manufacturers, where 50.6% and 39.5% of respondents said they used such networks, respectively. More than half of telecommunications and computer services companies used extranets, with 54.3% of respondents from that industry confirming they did so.

European* Businesses' Uses of Electronic Networks, by Channel, 2002 (as a % of respondents)



and the UK Source: e-Business W@tch, July 2002

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Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts Among those firms with access to an electronic network, 46.6% said that they were able to exchange documents with suppliers, while 45.1% of respondents said that they electronically exchanged documents with customers. Not surprisingly, for those e-business solutions that require a greater degree of integration, less than 15% of respondents said their companies were engaged in some form of electronic collaborative demand forecasting, while 20.2% said they were using an electronic collaborative design solution with their business partners.

European* Businesses' Uses of E-Business Technologies, 2002 (as a % of respondents)

Electronically exchange documents with	1 suppliers
	46.6 %
Electronically exchange documents with	n customers
	45.1%
Online collaborative design with busines products	ss partners to design
20.2%	
Online management of capacity/invento	ry
16.3%	-
Online negotiation of contracts	
15.5%	
Online collaboration to forecast product	demands
14.9%	
Note: n=5,917; *respondents are from the EU- and the UK Source: e-Business W@tch, October 2002	4 - France, Germany, Italy

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C. Use of E-Business Software and Services

Revenue Forecasts

Deployment of CRM and ASP services is currently at a modest level in Europe. For example, AMR Research found that only 23% of European businesses record sales leads electronically, while just 3% integrate their lead funnel with their sales systems. Nevertheless, IDC expects spending in both areas to increase exponentially by 2006.

Of the two, CRM services are and will remain by far the larger market. Accenture, which provides CRM implementation services, maintains that as a state of economic uncertainty persists throughout the world, more companies will be compelled to turn to and fully exploit CRM solutions (with an eye to return on investment from the start) as a means of generating value.

CRM Services Revenues in Europe, 2001 & 2006 (in billions)

2001		\$6.4	
2006			\$15.5
Source: In	ternational Dat	ta Corporation (IDC), Apr	il 2002
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00,000 020	uz elviarketer, inc.		
ASP Se	· · · · · · · · · · · · · · · · · · ·	nding in Western	
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Source: International Data Corporation (IDC), March 2002

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Need more information on CRM services? Read eMarketer's "E-Business Software" report, covering survey and forecast data on the ERP, ECM, CRM, e-sourcing and e-procurement and SCM software markets. This report is a complete overview of the current and future practices – plus notable trends – in the enterprise application market worldwide:

http://www.emarketer.com/products/report.php?software_ebus_jun03

Adoption Rates

The chart below shows that enterprise resource planning (ERP) systems are the most widely deployed e-business software solution. This is the logical result of approximately a decade of conversion from legacy systems. Customer relationship management (CRM) software is also in fairly wide use, particularly among industry segments such as banking and insurance whose operations have important customer-facing components. Likewise, in segments such as transportation equipment and electronics, where logistics are paramount, supply chain management (SCM) solutions are in the widest use.

Use of Enterprise Software Solutions among European Business, by Solution and by Industry Sector, 2002 (as a % of respondents)

	CRM	solution	SCM	solution	ERP	system
EU-4 by sector	Use	Plan to use (within next 12 mos.)	Use	Plan to use (within next 12 mos.)	Use	Plan to use (within next 12 mos
Food, beverage and tobacco	13.6%	3.1%	4.1%	6.0%	18.8%	4.9%
Media and printing	15.3%	6.3%	5.7%	3.8%	17.6%	2.8%
Chemical industries	23.3%	15.0%	12.5%	5.9%	50.1%	4.2%
Metal products	5.9%	6.2%	4.9%	2.9%	24.9%	4.7%
Machinery and equipment	17.6%	6.1%	8.4%	1.7%	36.6%	4.0%
Electronics	32.5%	8.6%	18.9%	10.9%	60.5%	2.7%
Transportation equipment	18.3%	1.2%	16.8%	5.8%	53.4%	0.6%
Retail	15.8%	8.5%	9.1%	2.3%	13.8%	2.0%
Tourism	12.9%	2.3%	4.1%	0.8%	6.5%	2.3%
Banking and leasing	39.2%	12.3%	2.3%	0.1%	11.7%	0.3%
Insurance and pension funding	30.1%	12.4%	5.6%	5.6%	11.5%	8.1%
Real estate activities	5.7%	2.8%	2.6%	1.0%	5.2%	2.4%
Business services	16.9%	5.1%	3.5%	2.2%	13.1%	2.7%
ICT services	42.0%	6.3%	8.8%	3.0%	41.1%	5.1%
Health and social services	4.1%	1.3%	1.6%	2.0%	5.1%	0.7%
EU-4 total	17.2%	5.9 %	6.5 %	2.9 %	20.2%	2.6%
EU-15 total	17.4%	6.1%	6.7%	3.3%	20.3%	2.8%

Source: e-Business W@tch, October 2002

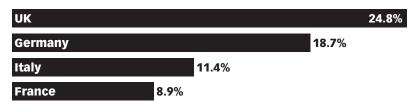
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Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts In the EU-15, large businesses have taken the lead in deploying CRM solutions, primarily due to the high fixed costs that keep the software out of reach for smaller enterprises. Among countries in the EU-4 (France, Germany, Italy and the UK), British and German firms are the leaders, while companies in France have lagged behind.

European Businesses Using an eCRM System, by Size, 2002 (as a % of respondents)

0-49 6.0%	
50-249 12.7%	
250+	32.2%
Note: n=9,264 for EU-15 Source: e-Business W@tch, October 2002	
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European* Businesses Using an eCRM System, by Country, 2002 (as a % of respondents)



Note: n=5,917; *respondents are from the EU-4 - France, Germany, Italy and the UK Source: e-Business W@tch, October 2002

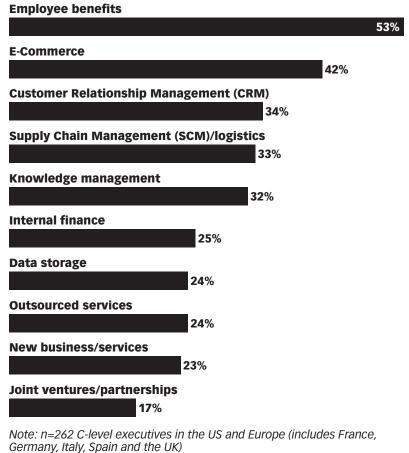
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Increasingly, European businesses (and others around the world) are turning to what is more generically termed "Web services" – Internet-based technologies that offer a standardized interface across multiple applications. As the chart below from Accenture demonstrates, companies in Europe (and the US, which was also included in the survey sample) are using Web services for a wide variety of functions, including as a substitute for some of the software solutions noted above. Although they are not inexpensive – indeed, the executives surveyed by Accenture cited cost as the biggest hurdle for adoption – Web services usually come at a fraction of the cost of stand-alone e-business applications.

Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts At this point, businesses are in the early stages of adoption. Most of the executives surveyed by Accenture stated that they believed Web services would become mainstream over the next three to 10 years.

Functional Applications for Which Web Services Are Currently Being Implemented by Companies in the US and Europe, 2003 (as a % of respondents)



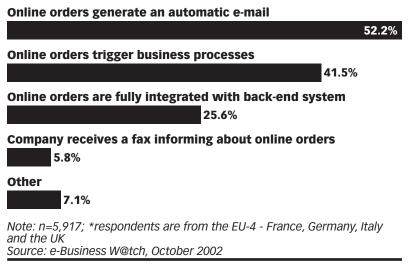
Source: Accenture, April 2003

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Integration

Only 25.6% of respondents to the European Commission survey had fully integrated their online ordering systems with their backend systems, confirming that most companies' e-commerce capabilities remain at a rather early stage of development. Instead, 52.2% of survey respondents said that online orders generate an automatic e-mail, while 41.5% of companies' online orders trigger a business process.

European* Businesses' Methods of Processing Online Orders, 2002 (as a % of respondents)



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Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts Further confirmation comes from the Benchmark Research study, which shows that despite the early lead US- and UK-based enterprises have taken in their use of various e-procurement solutions, most of these companies have not yet integrated their e-procurement solutions with back-end systems. Just 24% of US companies have connected their e-procurement systems with ERP or SCM systems, compared with 20% of UK enterprises and 4% of German enterprises.

Level of E-Procurement Solutions Integration among Enterprises in the UK and Germany, 2002 (as a % of respondents)

	UK	Germany
E-procurement solution provides an automated format for internal customers to submit requests for purchases	30%	6%
E-procurement solution receives regular price update information from suppliers to update vendor database	18%	26%
E-procurement technology is linked to extensive central database of supplier information	30%	22%
E-procurement solution issues tenders to suppliers electronically and receives bids back in standard format	22%	12%
E-procurement system is integrated with ERP/SCM	20%	4%
Note: n=50 enterprises with 5,000+ employees in the Uk enterprises with 5,000+ employees in Germany Source: Benchmark Research Ltd. for Commerce One, Ju)
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D. Buy- and Sell-Side E-Business Initiatives

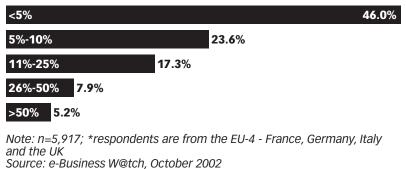
Buy-Side

"The buy-side has marked the last years' development in B2B ecommerce, and we are likely to see more of that in the coming years. It is important that the suppliers are able to comply and — even better — position themselves in this environment. While there is still a healthy growth rate in B2B ecommerce over the coming years, the days of triple-digit growth rates are now a thing of the past."

— Mikael Arnbjerg, research manager, European B2B Strategies, IDC

On the buy-side of their operations, 42.7% of European companies said that they were making some purchases online, while an additional 6.8% of businesses planned to do so within the next 12 months. However, not unlike their counterparts in the United States and Canada, of those companies that were making online purchases, nearly 70% of respondents were channeling less than 10% of their overall purchasing to the Internet. A narrow 5.2% of respondents said that they were doing more than 50% of their total purchasing online.

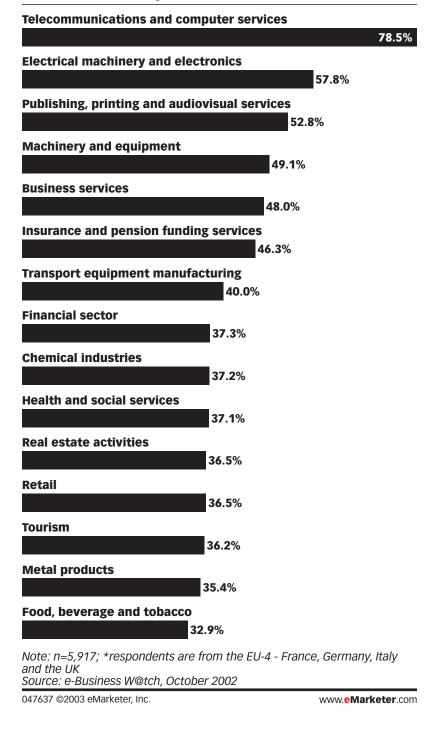
Share of European* Businesses' Total Purchasing Activity Conducted Online, 2002 (as a % of respondents)



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Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts Broken down by industry, firms in the telecommunications and computer services vertical were by far the most likely to be purchasing online, followed by businesses in the electrical machinery and electronics sector, and then the publishing, printing and audiovisual services industries.

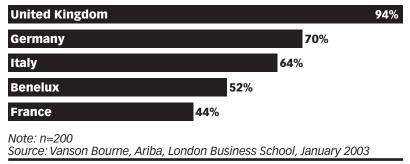
European* Businesses Purchasing Online, by Industry, 2002 (as a % of respondents)



In a separate study conducted by research firm Vanson Bourne on behalf of Ariba and the London Business School (LBS), businesses in the United Kingdom and Germany were found to be leading other European countries in their efforts to reduce costs by taking advantage of Internet-based technology. According to the *European Spend Agenda Survey*, procurement professionals in early 2003 are under continued pressure to reduce costs and find ways to become more efficient, especially as companies search for ways to strengthen their competitive position and improve their bottom line during difficult economic times.

Among the solutions to which European procurement professionals are turning, 42% said they are looking for ways to improve ways of "sourcing suppliers and conducting negotiations," while 36% are looking for "better access to and analysis of purchasing data."

Purchasing Professionals in Europe that Are Using the Internet to Reduce Costs, by Country, November 2002 (as a % of respondents)



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Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts In total, 39% of the 200 respondents to the Ariba/LBS study said that they already had an e-procurement system in place, with 45% of those companies saying that they used their e-procurement system to purchase office supplies. A narrower 32% of those 78 companies that have an e-procurement system said they were using it to purchase direct goods, while 17% said they were using their e-procurement system to purchase complex commodity products.

Use of E-Procurement Systems by Purchasing Professionals in Europe, by Spend Category, 2003 (as a % of respondents)

Office supplies	45%
IT equipment	35%
Direct goods	32%
Services	30%
Complex commodities 17%	
Capital items 16%	
All spend categories	26%
Note: n=73	

Source: Vanson Bourne, Ariba, London Business School, Janaury 2003 047029 ©2003 eMarketer, Inc. www.eMarketer.com

Among the survey's conclusions, the authors noted that heading into 2003, European purchasing managers were placing a greater emphasis on negotiating price reductions from their suppliers, rather than using technology to pursue productivity gains within their internal spend management processes. Indeed, as a result of cost cutting at their companies, purchasing professionals indicated that they were having to make do with whatever best-of-breed e-procurement technology they had available, while many admitted that they had not yet implemented a "strategic and holistic approach" to automated supply chain management.

In a similar study conducted on behalf of Commerce One, Benchmark Research surveyed 150 purchasing managers from the United States, the United Kingdom and Germany, finding that in general, British companies were not far behind their American counterparts in their use of various eprocurement solutions. On the other hand, businesses in Germany tended to rely more heavily upon traditional offline purchasing procedures. For example, 61% of American companies said that they made some purchases from suppliers' online catalogs or shopping carts, while 57% of British companies and 40% of German businesses did so as well. Large German enterprises were also the least likely to be using online auctions, at 9% of respondents, compared with 38% of American firms and 32% of British firms that are using online auctions.

Use of E-Procurement Solutions among Enterprises in the UK and Germany, 2002 (as a % of respondents)

	UK	Germany
Purchase via a supplier's online catalogue/shopping car	t 57%	40%
Purchase using e-procurement software	41%	30%
Purchase via online auctions	32%	3%
Purchase via a trading exchange	10%	9%
Note: n=50 enterprises with 5,000+ employees in the Uk enterprises with 5,000+ employees in Germany Source: Benchmark Research Ltd. for Commerce One, Ju		
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Not surprisingly, the study found German companies to be channeling a relatively small portion of their total purchasing via the Internet – about half that of British firms. Very few employees at German companies had access to online purchasing tools as well, compared with 9% of employees at American enterprises and 11% of employees who work for British firms.

Extent of the Use of E-Procurement Solutions among Enterprises in the UK and Germany, 2002

	UK	Germany
Average percent of all purchasing conducted online	13%	7%
Average percent of employees who can request a purchase online	11%	1%
Note: $n=50$ enterprises with 5.000+ employees in the	UK and 5	0

enterprises with 5,000+ employees in Germany Source: Benchmark Research Ltd. for Commerce One, July 2002

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Sell-Side

When it comes to selling online, 12% of enterprises in the EU-4, representing 17.1% of employees (note that in the chart below, the figures are weighted by employment), transact over the Internet, EDI networks or other online outlets. On an industry basis, tourism and the financial sectors have been the drivers of adoption.

European* Businesses Selling Online, by Industry Sector, 2002 (as a % of respondents)

	Sell online	Plan to sell online
Insurance and pension funding	45.9%	5.1%
Tourism	35.9%	10.6%
Banking and leasing	31.8%	17.2%
ICT services	30.6%	8.0%
Media and printing	25.6%	12.2%
Retail	21.9%	10.2%
EU-4 total	17.2 %	5.9 %
Chemical industries	15.5%	9.7%
Electronics	13.9%	12.5%
Real estate activities	13.4%	6.7%
Business services	12.5%	7.7%
Machinery and equipment	8.4%	23.6%
Food, beverage and tobacco	6.6%	15.9%
Metal products	6.2%	8.7%
Transportation equipment	5.3%	6.5%
Health and social services	5.3%	-

Note: n=5,917; *respondents are from the EU-4 - France, Germany, Italy and the UK; figures are weighed by employment Source: e-Business W@tch, October 2002

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Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts In terms of online sales channels, 82.6% of businesses in the EU-4 said that they were selling goods or services via their company Web site. However, note that in addition to those companies that sell to other businesses, this survey included businesses that sell to consumers. Indeed, among those electronic channels that are primarily intended for access by other businesses, about one-third of companies sold goods electronically through online marketplaces, while less than 15% of companies were selling products via EDI.

European* Businesses' Uses of Electronic Networks for Online Sales, by Channel, 2002 (as a % of respondents)

Company Web site	82.6%
Electronic marketplace	34.8%
EDI 14.7%	
Extranet 11.9%	
Mobile e-commerce	5.9%
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Note: n=5,917; *respondents are from the EU-4 - France, Germany, Italy and the UK Source: e-Business W@tch, October 2002

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It is reasonable to conclude from the various studies cited above that European businesses are not lagging their North American counterparts in terms of technology adoption to the degree commonly perceived. The gap is certainly less significant in Europe's largest economies, most notably in Germany and the UK.

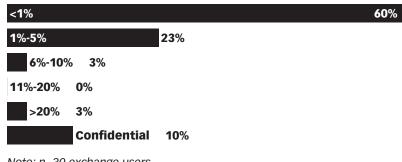
E. Participation in Online Exchanges

"The idea that the popularity of public exchanges is waning is simply untrue. However, exchanges do need to evolve to be a supportive element of the supply chain, not a replacement of it."

— Beth Barling, senior analyst, AMR Research

When it comes to European companies' participation in business-tobusiness exchanges, Forrester Research found in late 2001 that for 60% of the companies it surveyed, less than 1% of total direct spending was being channeled through online exchange networks. A further 23% of respondents said that between 1% and 5% of their spending was going through a business-to-business exchange.

Direct Purchasing Conducted through B2B Exchanges by Companies in Europe, 2001 (as a % of respondents)



Note: n=30 exchange users Source: Forrester Research, March 2002

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Exchange-based *sales* were even lower among the 30 companies surveyed by Forrester Research, with 80% of respondents saying that they directed less than 1% of their companies' sales through a business-tobusiness exchange.

Sales Conducted through B2B Exchanges by Companies in Europe, 2001 (as a % of respondents)

<1%	80%
1%-5% 10%	
6%-10% 0%	
11%-20% 3%	
>20% 0%	
Confidential 3%	
Don't know 3%	
Note: n=30 exchange users Source: Forrester Research, March 2002	

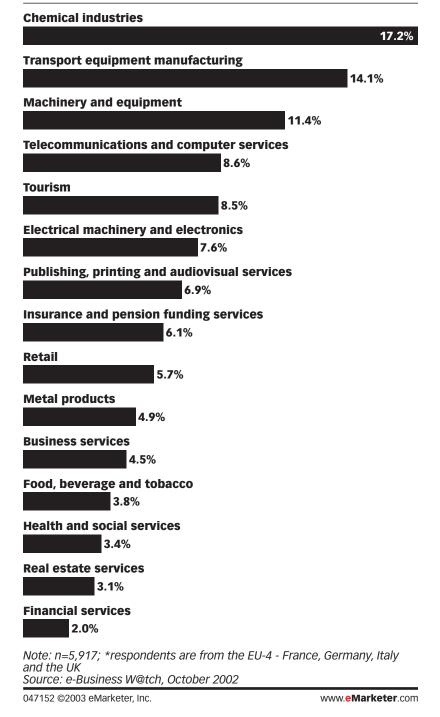
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Note that in the charts above, the survey sample is composed of just 30 companies. The results of the E-Business Watch study offer a partial explanation: it found that just 6.5% of the 5,917 European companies it surveyed were currently participating in a business-to-business exchange as of mid-2002. A further 4.6% of respondents said that they planned to participate in an exchange within the next year, bringing the total to 656 companies, or 11.1% of those businesses surveyed in the EU-4.

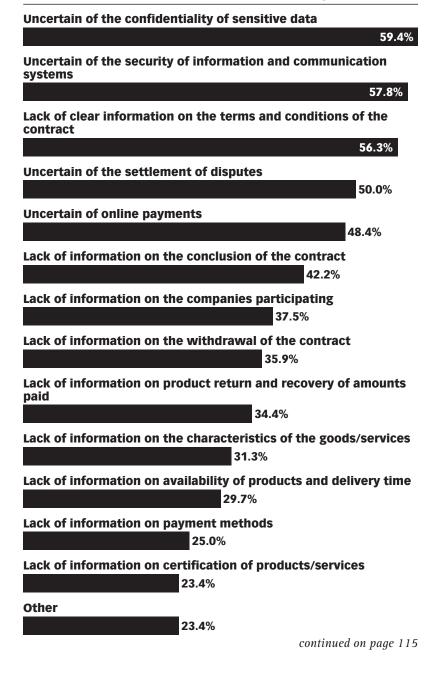
Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts Among the industry verticals that are seeing the greatest participation in business-to-business exchanges, the chemical and transport equipment industries are ahead of most others. Compared with other manufacturing verticals, the metals and food, beverage and tobacco industries saw the lowest exchange participation rates.

European* Businesses' Participation in B2B Exchanges, by Industry, 2002 (as a % of respondents)



Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts Among the leading reasons cited by European firms for not joining a business-to-business exchange, privacy and security issues were the top two concerns for well over half of respondents in a separate European Commission study. A significant number of companies also said that they lacked a proper understanding of a variety of issues relating to their potential use of exchanges, from their obligations as exchange members to contract settlement and delivery concerns.

Important "Trust Barriers for the Use of E-Marketplaces for Online Purchasing" According to Businesses* in the EU, 2002 (as a % of respondents)

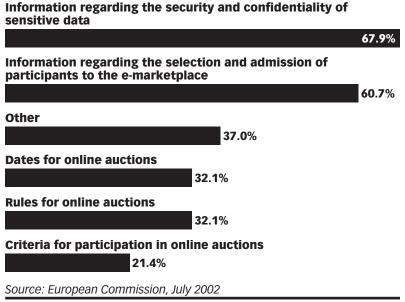


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hodology nnology Infrastructure	Lack of information on the prices of g additional charges	oods/services and
rnet Usage	20.3%	
E-Commerce	Lack of information on insurance of g	oods/services
E-Commerce	18.8%	
of Charts	Lack of information on the costs of de 15.6%	elivery of goods/services
	Lack of information on the language of 14.1%	of the transaction
	Note: *companies (48,4%),associations (40, Commerce (10,9%) Source: European Commission, July 2002	6%) and Chambers of
	042247 ©2002 eMarketer, Inc.	www.eMarketer.com
		54.7%
	Uncertainties related to settlements	50.0%
	Uncertainties related to security of in communication	formation and
		46.9 %
	Uncertainties related to online payme	ents
		43.8%
	Other	
	26.5%	
	Note: *companies (48.4%), associations (40 Commerce (10.9%); multiple responses allo	
	Source: European Commission, July 2002	

Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts In response to trust issues, the marketplace operators surveyed by the European Commission have made an effort to provide participating companies with information about the privacy and security of transactions, as well as other data central to participation in the marketplaces. Clearly, however, a greater effort is required in order to attract more companies.

Information Provided on the Web Sites of E-Marketplace Operators in the EU, 2002 (as a % of respondents)



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Following a year in which exchanges focused on building out their technology offerings and working to expand their early members' use of their networks, many business-to-business exchanges are now in the process of assembling information that provides evidence of tangible benefits and returns that new members may expect to receive.

In one of the few studies to take a look at some of the early experiences of private exchange owners, the Aberdeen Group interviewed five European enterprises, finding that on average, each company had 62% of its suppliers up and running on its private network and was running an annualized purchasing volume of EUR 660 million (\$775.7 million) of mid-2002. The five profiled companies reported an average process cost savings of 22.9%, with average purchased material cost savings of 13.2%. One company reported process cost savings of 80%.

Reported benefits ALSTOM 50% process time savings, 5% to 30% purchasing savings Capital One Bank 1% to 20% purchasing savings, 20% to 25% supplier consolidation (Europe) 1% to 2% process cost savings, 10% purchasing H.J. Heinz Europe savings Scania Annual staff productivity savings of €106,000, annual publishing cost savings of €160,000 Siemens 40% process cost savings, 20% purchasing savings Source: Aberdeen Group, August 2002 047147 ©2003 eMarketer, Inc. www.eMarketer.com

Reported Benefits of Private Exchange Users in Europe, 2002

According to the Aberdeen Group, nearly one-quarter of all Fortune 100 companies have already built, or are in the process of building, a private exchange.

"Most exchanges got the business model wrong by focusing too much on technology or transactions, not enough on helping customers work together."

— Mark Suster, chief executive, BuildOnline, as quoted in BusinessWeek Online, 12 May 2003

Leading European Exchanges

Last year, eMarketer's June 2002 *Europe E-Commerce: B2B and B2C*[™] report took a brief look at a number of European business-to-business marketplaces, in order to gain a sense of how companies in Europe are progressing with their exchange initiatives. Since then, Ariba has acquired one of the marketplaces, while two others have posted significant growth.

Ariba acquired Goodex in January of 2003, as part of the e-procurement software vendor's strategy to expand its customer base in Europe. Prior to the acquisition, Goodex had helped facilitate more than EUR 1.5 billion (\$1.76 billion) in online reverse auctions for its clients, the majority of which are based in Germany.

Serving the consumer packaged goods industry and backed by 28 leading manufacturers such as L'Oréal, Nestlé, and the Pernod Ricard Group, CPGmarket.com provides a suite of hosted supply chain management solutions. As with other successful consortia-backed exchanges, CPGmarket has helped its original investors obtain early returns through its facilitation of online reverse auctions. During the past year, more than 1,500 such events were held, worth more than EUR 2 billion.

Beyond online auctions, CPGmarket has moved forward with the development of a portfolio of supply chain management solutions that users are able to integrate with their back end ERP systems. Included in CPGmarket's portfolio are sourcing, procurement, CPFR, and logistics applications.

Exchange Profile: CPGmarket.com Membership and Transaction Activity, 2001 & 2002

	2001	2002
Number of suppliers	2,500	6,000
Number of e-sourcing events	1000+	2500+
Value of transactions*	€1 billion	€3 billion
Note: *Since beginning of operations in October 2000 Source: CPGmarket.com, March 2003		

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The third exchange that eMarketer profiled last year is HUBWOO, a horizontal marketplace and solutions provider that facilitates the online purchase of maintenance, repair and operations (MRO) supplies. HUBWOO offers a hosted procurement solution that connects buyers with suppliers via its marketplace platform.

By the end of 2002, the number of transactions conducted through its network had more than tripled, to reach 43,820 individual items, up from 12,100 items at the end of 2001. HUBWOO claims to provide users with access to more than 4.5 million product lines via its suppliers' online catalogs. Based in France, the exchange has more than 11,600 individual users worldwide.

Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts HUBWOO has recently merged with e-procurement solutions provider AVISIUM, which should help the two hosted marketplace builders expand their combined customer base and offer a broader portfolio of solutions. Contributing to the success of this merger will be the common SAP platform that both companies offer.

Exchange Profile: HUBWOO Membership and Transaction Activity, 2001 & 2002

	2001	2002
Number of transactions	12,100	43,820
Number of connected buyers (user seats)	2,400	11,600
Number of connected suppliers	490	1,920
Value of transactions	€22,400	€432,700
Source: HUBWOO, February 2003		

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Another European business-to-business exchange that saw some success in 2002 is IBX, a Scandinavian e-procurement and exchange platform owned by Ericsson, Volvo, SEB, Fortum and Novo Nordisk. As of early 2003, IBX was conducting approximately EUR 76.5 million (\$90.0 million) worth of transactions each month, although this has since gone up to approximately EUR 85.0 million (\$100 million) per month as of May 2003.

Since it last reported on its membership numbers in January, IBX has signed up another 53 suppliers, bringing its total supplier base to 303 firms. Another three buying organizations have joined as well, with 25 buyers now listed as members.

Exchange Profile: IBX Membership and Transaction Activity, January 2003

Number of suppliers	250
Number of purchasing companies	22
Value of transactions each month	€76.5 million
Source: IBX, January 2003	
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Methodology Technology Infrastructure Internet Usage Total E-Commerce B2C E-Commerce B2B E-Commerce Index of Charts Other European business-to-business exchanges of note include econstroi.com, a Portugal-based marketplace serving the construction industry, ex-trade.com through which buyers and sellers are able to trade eggs, and edilportale.com, another construction industry portal based in Italy.

In addition to the handful of marketplaces mentioned above, eMarketer has discovered that there are several small, regional exchanges in Europe that are not only surviving, but growing as well. One common benefit that members of these exchanges often cite is their access to new markets. Because many of these European exchanges sell products into a regional or domestic market, companies from other regions of the EU are able to offer their goods or services to new customers that they might otherwise have more trouble reaching. These benefits are unique to European business-tobusiness exchanges, yet they have proven to be a helpful tool for expanding commerce within the EU.

Lastly, it seems that for the foreseeable future, the majority of online marketplaces will be keeping their feet on the ground, so to speak, and not moving to the airwaves. According to IDC, few European e-marketplaces have developed mobile capacity to date, with just an additional 8% planning to do so by the end of this year. Two-thirds of those surveyed by IDC have no plans to make their features mobile-ready.

Mobile-Ready E-Marketplaces in Europe, 2003 (as a % of respondents)

Currently provide 11%	
Will in 2002/2003 8%	
Will eventually 11%	
No, and no plans	67 %
Source: International Data Corporation (IDC), February 2003	

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	Index of Charts	121
V	B2B E-Commerce	89
IV	B2C E-Commerce	53
III	Total E-Commerce	49
II	Internet Usage	37
1	Technology Infrastructure	11
	Methodology	7

M	ethodology	7
	The eMarketer Difference	8
	The Benefits of eMarketer's Aggregation Approach	9
	"Benchmarking" and Projections	9
ī	Technology Infrastructure	11
	Morldwide IT Spending, by Region, 2000-2005 (in billions)	12
	A. Europe in the Global Context	12
	IT Spending	12
	Worldwide IT Spending, by Region, 2001 (as a % of total IT spending)	13
	Growth in Information and Communication Technology Spending among th Countries, 1993-2001 (ranked by CAGR)	e G-7 14
	Worldwide Information Technology Spending, by Country, 2001 (in billions a as a % of spending worldwide)	and 14
	Fastest Growing Information and Communications (ICT) Technology Market Worldwide, by Country, 1993-2001 (ranked by CAGR)	ts 15
	IT Hardware	16
	Change in Worldwide IT Hardware Spending, by Region, 2002 (as a % decreation of the second	ise 16
	Worldwide IT Hardware Spending, by Region, 2002 (as a % of total spending)	16
	Worldwide IT Hardware Spending, by Country, 2001 (in billions and as a % of spending worldwide)	f 17
	Fastest Growing IT Hardware Markets Worldwide, by Country, 1993-2001 (raby CAGR)	anked 18
	IT Software	19
	바 Worldwide Software Spending, by Region, 2001 (as a % of total spending)	19
	Worldwide Software Spending, by Country, 2001 (in billions and as a % of spending worldwide)	20
	Fastest Growing Software Markets Worldwide, by Country, 1993-2001 (rank CAGR)	ed by 21
	IT Services	22
	4 Worldwide IT Services Market Revenues, by Region, 2001-2003 (in billions)	22
	h Worldwide IT Services Spending, by Country, 2001 (in billions and as a % of spending worldwide)	23
	III Fastest Growing IT Services Markets Worldwide, by Country, 1993-2001 (ran by CAGR)	iked 24
	Telecommunications Spending	25
	h Breakdown of Worldwide Telecommunications Revenues, by Region, 1999 8 2007	25
	地 Worldwide Telecommunications Spending, by Region, 2000 & 2004 (in billions)	25
	Worldwide Telecommunications Spending, by Country, 2001 (in billions and % of spending worldwide)	as a 26

II

	Fastest Growing Telecommunications Markets Worldwide, by Country, 199 2001 (ranked by CAGR)	' ³⁻ 27
	Enterprise and Public Network Telecommunications Equipment Spending Eastern Europe, 2005 (in billions)	in 28
1	 Estimated Growth in Communications Technology Spending in Western Eu by Country, 2002 & 2003 	
E-busi		20
	Worldwide E-Business Technology Spending, by Region, 2002 (in billions an	
	% of total spending)	29
. IT Spe	nding Forecasts: Europe	30
	Leading IT Markets in Western Europe, 2001 (in billions)	30
1	IT Spending in Europe, 2000-2005 (in billions)	30
1	IT Spending in Western and Eastern Europe, by Technology Segment, 2001 % of total spending)	(as a) 31
	Leading IT Markets in Eastern Europe, 2001 (in billions)	31
	IT Spending in Western Europe, by Technology Segment, 2000-2003 (in billions)	32
. IT Spe	nding Growth Rates: Europe	33
	IT Spending Growth in Western Europe, 2001-2003	33
1	Estimated Growth in Information and Communications Technology Spendi Western Europe, 2002 & 2003	ing i 34
	IT Spending Intentions of CIOs in Select Countries in Western Europe, 2003 % of respondents)	(as 35
net U	sage	37
. Intern	et Users in Europe	38
	-	
1	Internet Users in Select Countries in Europe, 2000-2002 (in thousands)	38
	Internet Users in Select Countries in Europe, 2000-2002 (in thousands) Internet Europe	
Centra		39
Centra	al and Eastern Europe	39 39 vs.
Centra	al and Eastern Europe Internet Users in Western Europe, by Country, 2001-2007 (in millions) Internet Users in Eastern Europe, 2001-2006 (in millions and as a % change)	39 39 vs. 40
Centra	al and Eastern Europe Internet Users in Western Europe, by Country, 2001-2007 (in millions) Internet Users in Eastern Europe, 2001-2006 (in millions and as a % change prior year)	39 39 vs. 40 41
Centra 	al and Eastern Europe Internet Users in Western Europe, by Country, 2001-2007 (in millions) Internet Users in Eastern Europe, 2001-2006 (in millions and as a % change prior year) Internet User Growth in Eastern Europe, by Country, 2001-2006	39 39 vs. 40 41 41
Centra 	al and Eastern Europe Internet Users in Western Europe, by Country, 2001-2007 (in millions) Internet Users in Eastern Europe, 2001-2006 (in millions and as a % change prior year) Internet User Growth in Eastern Europe, by Country, 2001-2006 Internet Users in Eastern Europe, by Country, 2001-2006 (in millions)	39 39 vs. 40 41 41 42 vs.
Centra 	 al and Eastern Europe Internet Users in Western Europe, by Country, 2001-2007 (in millions) Internet Users in Eastern Europe, 2001-2006 (in millions and as a % change prior year) Internet User Growth in Eastern Europe, by Country, 2001-2006 Internet Users in Eastern Europe, by Country, 2001-2006 (in millions) rn Europe Internet Users in Western Europe, 2001-2006 (in millions and as a % change 	39 39 vs. 40 41 41 42 vs. 42 vs.
Centra 	al and Eastern Europe Internet Users in Western Europe, by Country, 2001-2007 (in millions) Internet Users in Eastern Europe, 2001-2006 (in millions and as a % change prior year) Internet User Growth in Eastern Europe, by Country, 2001-2006 Internet Users in Eastern Europe, by Country, 2001-2006 (in millions) rn Europe Internet Users in Western Europe, 2001-2006 (in millions and as a % change prior year)	39 39 vs. 40 41 41 42 vs. 42 42
Centra 	 al and Eastern Europe Internet Users in Western Europe, by Country, 2001-2007 (in millions) Internet Users in Eastern Europe, 2001-2006 (in millions and as a % change prior year) Internet User Growth in Eastern Europe, by Country, 2001-2006 Internet Users in Eastern Europe, by Country, 2001-2006 (in millions) Internet Users in Western Europe, 2001-2006 (in millions and as a % change prior year) Internet Users in Select Countries in Eastern Europe, 2001 & 2002 (in millions) Internet Users in Western Europe, 2001-2006 (in millions and as a % change prior year) 	39 39 40 41 41 42 42 42 42 42 43
Centra 	 al and Eastern Europe Internet Users in Western Europe, by Country, 2001-2007 (in millions) Internet Users in Eastern Europe, 2001-2006 (in millions and as a % change prior year) Internet Users in Eastern Europe, by Country, 2001-2006 Internet Users in Eastern Europe, by Country, 2001-2006 (in millions) rn Europe Internet Users in Western Europe, 2001-2006 (in millions and as a % change prior year) Internet Users in Select Countries in Eastern Europe, 2001-2006 (in millions) Internet Users in Western Europe, 2001-2006 (in millions and as a % change prior year) Internet Users in Western Europe, 2001-2006 (in millions and as a % of the population) 	39 39 vs. 40 41 41 42 vs. 42 42 43 43
Veste	 al and Eastern Europe Internet Users in Western Europe, by Country, 2001-2007 (in millions) Internet Users in Eastern Europe, 2001-2006 (in millions and as a % change prior year) Internet User Growth in Eastern Europe, by Country, 2001-2006 Internet Users in Eastern Europe, by Country, 2001-2006 (in millions) Internet Users in Western Europe, 2001-2006 (in millions and as a % change prior year) Internet Users in Select Countries in Eastern Europe, 2001 & 2002 (in millions) Internet Users in Western Europe, 2001-2006 (in millions and as a % of the population) Internet Users in Western Europe, 2001-2006 (in millions) 	40 41 41 42
Centra 	 and Eastern Europe Internet Users in Western Europe, by Country, 2001-2007 (in millions) Internet Users in Eastern Europe, 2001-2006 (in millions and as a % change prior year) Internet User Growth in Eastern Europe, by Country, 2001-2006 Internet Users in Eastern Europe, by Country, 2001-2006 (in millions) Internet Users in Western Europe, 2001-2006 (in millions and as a % change prior year) Internet Users in Select Countries in Eastern Europe, 2001-2006 (in millions and as a % change prior year) Internet Users in Western Europe, 2001-2006 (in millions and as a % of the population) Internet Users in Western Europe, 2001-2007 (in millions) Internet Users in Western Europe, 2001-2006 (in millions) 	39 39 40 41 41 42 42 42 42 42 43 43 43

	Home Internet Users in France, Germany and the UK, by Experience Online, (as a % of respondents)	2002 47
	Skill Level of Home Internet Users in Europe*, 2001 & 2002 (as a % of respondents)	48
	Total E-Commerce	49
	Distribution of E-Commerce Revenues in Western Europe, by Country, 2002 % of total)	(as a 50
	III E-Commerce Revenues in Western Europe, 2002 & 2006 (in billions of €)	50
	E-Commerce Spending in Central and Eastern Europe, 2003 & 2006 (in billions)	51
	European SMEs' Planned Implementation of an E-Commerce Platform, 2003 % of respondents)	3 (as a 52
IV	B2C E-Commerce	53
	A. General Trends	54
	B2C E-Commerce Revenues in Western Europe, by Quarter, 2002 (in billions)	54
	Reasons Why Internet Users in Europe* Say the Internet Has Made Their Lif Better, 2002 (as a % of respondents)	e 55
	B. Revenue Projections	56
	h B2C E-Commerce Worldwide, by Region, 2002-2006 (in billions)	56
	European Forecast	57
	h B2C E-Commerce in Europe, 2002-2006 (in billions)	57
	ி B2C E-Commerce Spending in Europe, 2002-2006 (in billions of €)	58
	Comparative Estimates: B2C E-Commerce Revenues in Europe, 2000-2006 (i billions)	n 58
	H B2C E-Commerce Sales in Europe, 2001, 2002 & 2005 (in billions)	59
	H B2C E-Commerce Revenues in Western Europe, 2000-2006 (in billions)	59
	🕮 Online Retail Sales in Europe, 2002 & 2005 (as a % of total retail sales)	59
	C. Online Shoppers and Buyers	60
	Online Shoppers	60
	Online Buyers in France, Germany and the UK Who Get Information Online a Products to Buy, 2001 & 2002 (as a % of respondents)	about 60
	Online Buyers in France, Germany and the UK Who Have Shopped in Their Pajamas, 2002 (as a % of respondents)	61
	h Home Internet Users in France, Germany and the UK Who Research a Produ Online and Purchase Offline*, 2002 (as a % of respondents)	ict 61
	Western European Visitors to European Retail Web Sites, by Age, April 2002 % of online visitors)	(as a 62
	Personal Activities Conducted Online at Work among Internet Users in Euro 2002 (as a % of respondents)	ope*, 62
	Percent of Population Shoppping Online in Selected Countries in Europe, Q 2001	4 63
	Barriers to Shopping Online	64
	Factors that Would Motivate Non-Online Shoppers in Europe* to Shop Online 2002 (as a % of respondents)	ne, 64

Factors that Would Motivate Non-Online Shoppers in France, Germa UK to Shop Online, 2002 (as a % of Internet users)	any and the 65
Online Buyers	66
Online Buyers* in France, Germany and the UK, 2001 & 2002 (as a % or respondents)	of 66
Online Buyers* in France, Germany and the UK, 2001 & 2002 (as a % or respondents)	of 66
Average Amount Spent Online in the Last Three Months by Home In in France, Germany and the UK, 2002	ternet Users 67
Frequent Online Buyers* in France, Germany and the UK, 2001 & 200 respondents)	2 (as a % of 67
Products Purchased Online by Internet Users in France, Germany an UK, 2002 (as a % of respondents who regularly or occasionally purch each item)	
Online Buyers in France, Germany and the UK Who Expect to Increat Number of Online Purchases in the Next Few Years, 2001 & 2002 (as respondents)	
Category Review	70
Internet Users in France, Germany and the UK Who Book Travel Res Tickets Online, 2001 & 2002 (as a % of respondents)	ervations or 70
山 Online Travel Sales in Western Europe, by Channel, 1998-2003	71
Online Travel Revenue Share in Western Europe, by Country, 1998-20 total)	002 (as a % of 72
I Online Travel Revenues in Europe, 2002 & 2007 (in billions of €)	73
Online Travel Market Share in Western Europe, by Channel, 2000 & 2 of total)	2003 (as a % 73
h Online Travel Revenues in Western Europe, 1998-2006 (in billions of	€) 74
III Online Travel Sales for Select Countries in Western Europe, 2002 & 2 millions of €)	2007 (in 75
Other Retail Categories	76
Growth of B2C E-Commerce Sales via Visa in the EU, by Sector, Q4 20 (as a % increase/decrease vs. prior year)	001 & Q4 2002 76
Percent of Purchases Conducted Online in Continental Europe, by C 2002, 2004 & 2007 (as a % of total category revenues)	ategory, 77
Products Purchased Online by Internet Users in Europe, 2002 (as a % respondents who regularly or occasionally purchase each item)	6 of 78
IIII Online Apparel Sales for Select Countries in Western Europe, 2002 8 millions of €)	& 2007 (in 79
III Online Book Sales for Select Countries in Western Europe, 2002 & 20 millions of €)	007 (in 80
🕸 Online Event Ticket Sales in Western Europe, 2002-2007 (in millions	of€) 81
In the time of the time	81
Honline Grocery Sales for Select Countries in Western Europe, 2002 8 millions of €)	& 2007 (in 82
Online Buyers in France, Germany and the UK Who Take Part in Online 2001 & 2002 (as a % of respondents)	ne Auctions, 83

Frequency with Which Online Buyers in France, Germany, and the UK Sho Online for Others, 2002 (as a % of online buyers)	р 83
D. Non-Internet E-Commerce	84
Mobile Commerce	84
山 Use of M-Commerce among Internet-Enabled Phone Users in Europe*, by June 2002 (as a % of respondents)	Age, 84
III Non-Voice Mobile Service Revenues in Western Europe, by Service Catego 2008 (in billions of €)	ory, 85
Breakdown of Non-Voice Mobile Service Revenues in Western Europe, by Service Category, 2008	85
Television Commerce	86
Current and Future Use of Television Commerce in Europe, by Market Seg 2002 (as a % of executives surveyed)	;ment, 86
III iTV Revenues vs. Total Online Commerce Revenues in Western Europe, 20 (in billions of €)	02-200 87
Western European Retailers' Opinions Regarding the Role of Interactivity T-Commerce Take-Up, 2002 (as a % of respondents)	/ in 88
山 T-Commerce Sales Formats Used by Western European Retailers, 2002 (as respondents)	a % o 88
B E-Commerce	89
A. Revenue Forecasts	90
# Optime Trade in Function 2004 2 2007 (in billions of Cland et al.) of fotal bur	

	ា Online Trade in Europe, 2001 & 2006 (in billions of € and as a % of total bu trade)	usiness 90
	晶 B2B E-Commerce in Europe, 2002-2006 (in billions)	90
	山 B2B E-Commerce Revenues in Western Europe, 2002 & 2006 (in billions o	f€) 91
B. S	tage of E-Business Development	92
_	站 Leading E-Business Ready Countries in Western Europe, 2003 (ranked by score)	r index 92
	山 Leading E-Business Ready Countries in Eastern Europe, 2003 (ranked by score)	index 93
	山 Leading Western European Economies' Business Usage of ICT, 2002-2003 by Networked Readiness Index score)	(ranked 94
	Leading Eastern European Economies' Business Usage of ICT, 2002-2003 by Networked Readiness Index score)	(ranked) 95
	Label Control Cont	ns a % of 96
	Label{eq:stable} Lucopean* Businesses' Uses of E-Business Technologies, 2002 (as a % of respondents)	97
C . U	Jse of E-Business Software and Services	98
_	Revenue Forecasts	98
	曲 ASP Services Spending in Western Europe, 2001 & 2006 (in billions)	98
	山 CRM Services Revenues in Europe, 2001 & 2006 (in billions)	98
	Adoption Rates	99

126

V

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Use of Enterprise Software Solutions among European Bus and by Industry Sector, 2002 (as a % of respondents)	siness, by Solution 99
European* Businesses Using an eCRM System, by Country, respondents)	2002 (as a % of 100
European Businesses Using an eCRM System, by Size, 2002 respondents)	a (as a % of 100
Functional Applications for Which Web Services Are Curren Implemented by Companies in the US and Europe, 2003 (as	a % of
respondents)	101 102
Integration European* Businesses' Methods of Processing Online Order	
respondents)	102
Level of E-Procurement Solutions Integration among Enter	prises in the UK and
Germany, 2002 (as a % of respondents)	103
ıy- and Sell-Side E-Business Initiatives	104
Buy-Side	104
Share of European* Businesses' Total Purchasing Activity C 2002 (as a % of respondents)	Conducted Online, 104
山 European* Businesses Purchasing Online, by Industry, 2002 respondents)	2 (as a % of 105
h Purchasing Professionals in Europe that Are Using the Inte by Country, November 2002 (as a % of respondents)	ernet to Reduce Cost 106
Use of E-Procurement Systems by Purchasing Professional Category, 2003 (as a % of respondents)	s in Europe, by Spen 107
山 Extent of the Use of E-Procurement Solutions among Enter Germany, 2002	rprises in the UK and 108
山 Use of E-Procurement Solutions among Enterprises in the (as a % of respondents)	UK and Germany, 200 108
Sell-Side	109
European* Businesses Selling Online, by Industry Sector, 20 respondents)	002 (as a % of 109
European* Businesses' Uses of Electronic Networks for On Channel, 2002 (as a % of respondents)	lline Sales, by 110
rticipation in Online Exchanges	111
Direct Purchasing Conducted through B2B Exchanges by C 2001 (as a % of respondents)	ompanies in Europe, 111
Sales Conducted through B2B Exchanges by Companies in of respondents)	Europe, 2001 (as a % 112
European* Businesses' Participation in B2B Exchanges, by of respondents)	Industry, 2002 (as a 9 113
Important "Trust Barriers for the Use of E-Marketplaces for According to Businesses* in the EU, 2002 (as a % of respond	-
Important "Trust Barriers for the Use of E-Marketplaces for according to Businesses* in the EU, 2002 (as a % of respond	r Online Selling"
Important "Trust Barriers for the Use of E-Marketplaces for According to Businesses* in the EU, 2002 (as a % of respondence)	r Online Purchasing"

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🏨 Information Provided on the Web Sites of E-Marketplace Operators in the	Information Provided on the Web Sites of E-Marketplace Operators in the EU,	
2002 (as a % of respondents)	116	
Leading European Exchanges	117	
III Reported Benefits of Private Exchange Users in Europe, 2002	117	
Exchange Profile: CPGmarket.com Membership and Transaction Activity, 2002	2001 & 118	
Exchange Profile: HUBWOO Membership and Transaction Activity, 2001 & 2002	119	
此 Exchange Profile: IBX Membership and Transaction Activity, January 2003	119	
Mobile-Ready E-Marketplaces in Europe, 2003 (as a % of respondents)	120	
Index of Charts	121	

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