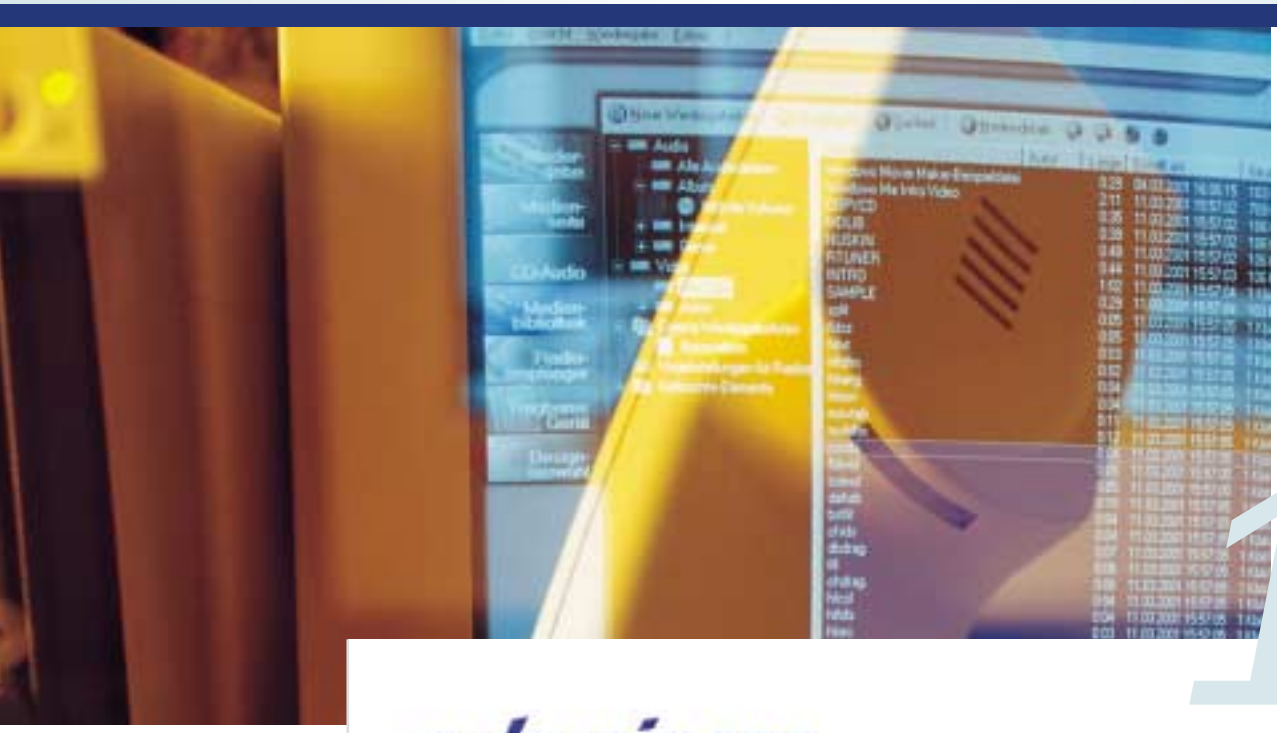


The European
e-Business
Market Watch

Sector Report
No. 15/ October 2002

15

e-business w@tch

ICT & e-Business in the **Business Services Sector**

eEurope GoDigital

European Commission
Enterprise Directorate General
e-Business, ICT Industries
and Services

Disclaimer

Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use which might be made of the following information. The views expressed in this report are those of the authors and do not necessarily reflect those of the European Commission. Nothing in this report implies or expresses a warranty of any kind. Results from this report should only be used as guidelines as part of an overall strategy. For detailed advice on corporate planning, business processes and management, technology integration and legal or tax issues, the services of a professional should be obtained.

Acknowledgements

This report was prepared by *Berlecon Research GmbH* in co-operation with *the DIW Berlin* on behalf of the European Commission, Enterprise Directorate General. It is part of a deliverable in the context of the "European e-Business Market Watch" (short name: *e-Business W@tch*), which is implemented by *empirica GmbH* in co-operation with *DIW Berlin – German Institute for Economic Research* and *Databank Consulting* on behalf of the European Commission based on a service contract running from January 2002 until June 2003.

Contact

empirica GmbH
Oxfordstr. 2
D-53111 Bonn
info@empirica.com

DIW Berlin
Königin-Luise-Str. 5
D-14195 Berlin
pkoellinger@diw.de

Databank Consulting spa
Corso Italia 8
I-20122 Milan
dbcons@dbcons.it

Rights Restrictions

Any reproduction or republication of this report as a whole or in parts without prior authorisation is strictly prohibited.

Bonn / Brussels, September 2002

Table of Contents

Introduction **5**

Business Services: Sector Profile & e-Business **7**

1 Economic profile **7**

1.1 Definition and focus *7*

1.2 Economic situation and key figures *9*

1.2.1 Turnover and value added 10
1.2.2 Regional distribution 10
1.2.3 Employment, productivity and labour costs 11
1.2.4 Size class distribution 13

1.3 General trends and business issues *14*

1.3.1 General business issues 14
1.3.2 Recent trends and developments 16

2 Use of ICT & e-business **19**

2.1 The role of ICT and e-business in business services *19*

2.1.1 Procurement 19
2.1.2 Services production and delivery 21
2.1.3 Sales and Customer Care 27
2.1.4 Marketing 29

2.2 Diffusion of ICT and e-business *30*

2.2.1 Infrastructure 31
2.2.2 IT skills 33
2.2.3 E-commerce for sales and procurement 35
2.2.4 Barriers to e-commerce 38
2.2.5 E-Business indicators 39
2.2.6 Impact of e-business 41

3 Summary and conclusions **44**

3.1 Summary of main findings *44*

3.2 Economic implications *45*

3.2.1 Implications for individual enterprises 45
3.2.2 Implications for the industry 46

3.3 Policy issues *47*

References **49**

Index of tables and figures

Tables

Table 1-1: Structure of the business services sector in the EU-12 (1999) by kind of activity 10
Table 1-2: Turnover of the business services sector in EU-12 countries (1999) 11
Table 1-3: Employment, productivity and labour costs in the business services sector (1999) 13
Table 1-4: Size class distribution in the business services sector 14
Table 2-1: Availability of IT infrastructure 31
Table 2-2: Availability of IT infrastructure across countries 32
Table 2-3: Internet connection modus 32
Table 2-4: Internet connection speed 32
Table 2-5: Facilities available to majority of office workers 33
Table 2-6: Importance of different training schemes for IT skills development 33
Table 2-7: IT training offered to employees 34
Table 2-8: Buy-side e-commerce activity 35
Table 2-9: Share of online purchases in total purchases 35
Table 2-10: Type of goods purchased online 36
Table 2-11: Type of goods purchased online across countries 36
Table 2-12: Sell-side e-commerce activity 37
Table 2-13: Share of online sales in total sales 37
Table 2-14: Barriers to online procurement 38
Table 2-15: Barriers to selling online 39
Table 2-16: Use of online technologies 40
Table 2-17: Use of specific IT systems and solutions 40
Table 2-18: Use of specific IT systems and solutions across countries 40
Table 2-19: Use of online technologies within the value chain 41
Table 2-20: Impact of e-business on organisation 42
Table 2-21: Impact of online procurement 42
Table 2-22: Impact of selling online 43

Figures

Figure 1-1: Number of employees in the business services sector EU-11 (based on Table 1.3.) 12
Figure 2-1: Key business processes in business services 22
Figure 2-2: Offerings of support for networking and IT skills development across countries 34
Figure 2-3: Current online procurement and sales across countries 36

Introduction

European policy is in a number of areas, including economic, innovation and SME policies, increasingly focused on promoting the business techniques and new ways of working which will provide the economic and social foundation of the information society in Europe. To help policy makers define their programmes, and to monitor the effectiveness of these policies, some indication of progress and of areas requiring active support is essential. At the same time, many areas of European business lack information about the speed of technological update in European markets, which they expect to have a strong impact on their global competitiveness.

Despite the increasing number of studies and market research on electronic business, and especially on electronic commerce, from a number of authors and research organisations in different European countries and world-wide, there is still a lack of reliable empirical information about the extent, scope, nature of and factors affecting the speed of e-business development in Europe at the sectoral level in an internationally comparative framework. This report aims to provide such information for the business services sector.

This report has been published in the framework of the "European e-Business Market Watch" (or, in short, the "*e-Business W@tch*"). This is a market observatory established by the European Commission, DG Enterprise. Laying the groundwork for a continuous facility), the *e-Business W@tch* monitors and assesses the maturity of electronic business in 15 industry sectors across all EU Member States over an 18-month period, including seven manufacturing and eight service sectors. At least two reports will be published on each sector during the life-time of the *e-Business W@tch*. The sectors and the publication schedule for these reports are as follows:

	Sector	1st Issue Report	2nd Issue Report
1	Food, beverages, tobacco	August 2002	January 2003
2	Publishing, printing and audio-visual services	October 2002	April 2003
3	Manufacture of chemicals and chemical products	August 2002	January 2003
4	Manufacture of Metal products	October 2002	April 2003
5	Manufacture of machinery and equipment	October 2002	April 2003
6	Manufacture of electrical machinery and electronics	October 2002	April 2003
7	Manufacture of transport equipment	August 2002	January 2003
8	Retail	October 2002	April 2003
9	Tourism	October 2002	April 2003
10	Credit institutions, investment firms, leasing enterprises	August 2002	January 2003
11	Insurance and pension funding services	August 2002	January 2003
12	Real estate activities	October 2002	April 2003
13	Business Services	October 2002	April 2003
14	Telecommunications and computer related services	August 2002	January 2003
15	Health and social work	August 2002	January 2003

The research presented in these Sector Reports is intended to help to benchmark progress and to assess how electronic business development can be further enhanced at the European level or at Member State level with the objective of strengthening the competitiveness of European businesses. Special attention is paid to the SME dimension of e-business. More information about the *e-Business W@tch* is available at www.ebusiness-watch.org.

Methodological note

The data presented in this report are based on the European e-Business Survey, a cornerstone of the monitoring activities of the *e-Business W@tch.* The fieldwork of this enterprise survey was carried out by INRA Germany GmbH in co-operation with its international partner organisations in June and July 2002 using computer-aided telephone interview (CATI) technology. The decision-maker in the enterprises targeted by the survey was normally the person responsible for ICT within the company, typically the IT manager. Alternatively, especially in small enterprises without a separate IT unit, the managing director or owner was interviewed. In total, about 10,000 interviews with decision-makers in European enterprises were conducted. If not otherwise indicated, figures are presented as employment-weighted data. This means that figures should be read as "enterprises comprising …% of employees". The reason for using employment weighting is that there are many more micro enterprises than non-micro enterprises. Therefore enterprise-weighted (but also unweighted) figures would effectively represent mainly the smallest firms and blur the economic importance in terms of market volume or number of employees.

The survey included all sectors and all Member States, but only in the four largest states (Germany, France, Italy and UK) were all sectors covered. The survey for the business services sector was carried out in the following seven countries: Denmark, Germany, France, Ireland, Italy, the Netherlands and the UK. A cross-sector comparison of key e-business figures (based on the EU4 which represent more than 60% of the market volume in any of the 15 sectors and in most sectors actually more than 70%) is available in a special annex to this report, the "Scoreboard of e-Business Indicators". The Scoreboard can be downloaded from the web site (www.ebusiness-watch.org).

Business Services: Sector Profile & e-Business

1 Economic profile

1.1 Definition and focus

Services enterprises attributed to "business services" (NACE Rev. 1 74)[1] cover a wide range of activities. On the 3-digit-level there are eight sub-groups, on the 4-digit-level the number of sub-groups rises to 15. Activities covered in this sector include:

Code	Activity
74.1	Legal, accounting, book-keeping and auditing activities; tax consultancy; market research an public opinion polling; business and management consultancy; holdings
74.2	Architectural and engineering activities and related technical consultancy
74.3	Technical testing and analysis
74.4	Advertising
74.5	Labour recruitment an provision of personnel
74.6	Investigation and security activities
74.7	Industrial cleaning
74.8	Miscellaneous business activities not elsewhere classified (for example: photographic activities, packaging activities, secretarial and translation activities)

Sector description

NACE 74.1 includes legal activities such as legal advice, notary activities or management of trusts (NACE 74.11); accounting, book-keeping and auditing activities as well as tax consultancies (NACE 74.12); market research and opinion polling (NACE 74.13); business and management consulting activities (NACE 74.14); and the management of holding companies (NACE 74.15). This sub-sector has close ties with ICT services, e.g. with the outsourced accounting-related data processing activities, or with hardware and software consulting. In particular the distinction between management and ICT consulting is increasingly difficult as ICT is of rising strategic importance for companies, and decisions about the ICT equipment are becoming strategic business decisions. The sub-sectors NACE 74.11, 74.12 and 74.14 are often addressed as "professional services".

NACE 74.2 combines activities in architecture, landscape design, and engineering. While the first two have close ties with the construction sector, companies in the engineering sub-sector work closely together with the manufacturing industry, especially the manufacturing of investment goods.

[1] Strictly spoken, these are "other business services", as many definitions of business services also include activities covered in other reports. For example, the definition for business services often chosen by the EU includes also IT services (NACE 72.1-6) as well as renting and leasing activities (in NACE 71.1-71.3). Cf. European Commission (1998): The contribution of business services to industrial performance: a common policy framework, COM (1998) 534 final.

Closely related to NACE 74.2 is NACE 74.3 (technical testing and analysis), which contains e.g. pollution measurement as well as certification of ships or motor vehicles. Both classifications together are often labelled as “technical services”.

NACE 74.4 (Advertising) includes the design of advertising campaigns, the provision of spaces for advertising as well as media representation. This sub-sector shows close ties to market research (NACE 74.13), public relations (part of NACE 74.14) and direct mailing (part of NACE 74.83). These four are sometimes combined as “the marketing and communications sector”. Often only NACE 74.13 and 74.4 are commonly addressed as “marketing services”.

Some parts of NACE 74.5 (labour recruitment and provision of personnel) are close to management consulting (e.g. executive search activities). Other parts, such as temporary employment agencies, are specific services of their own kind.

NACE 74.6 (investigation and security activities) and NACE 74.7 (industrial cleaning) are often referred to as “operational services”. NACE 74.6 contains investigative services, which are often provided on a project basis, while security and related activities (e.g., surveillance or guard activities, store detectives) are typically provided on a continuous basis. Also provided on a continuous basis are services in the industrial cleaning sector (NACE 74.7), which range from indoor and window cleaning to special cleaning services for reservoirs and tanks.

Finally, NACE 74.8 (miscellaneous business activities not elsewhere classified, or in short, “other”) contains a variety of very different activities. Photography services (NACE 74.81) are in part related to advertising but also subsume household-oriented photography (e.g. for weddings and passports) as well as coin-operated photographic machines. Packaging activities (NACE 74.82) contain all sorts of packaging, labelling and stamping. They are closely related to direct mailing activities, which are part of secretarial and translation activities (NACE 74.83). Finally, other business activities not elsewhere classified contain credit reporting and collection agencies, special design services and the activities of exhibition, fair and conference organisers.

Service groups with common characteristics

At first sight, these sub-sectors seem to have nothing more in common than targeting the enterprise sector, and even this does not apply for all parts of the sector or for all services provided. Legal and tax advice, for example, is directed to enterprises as well as to households, and photographic activities target enterprises as well as consumers.

Looking more closely, however, a few more common characteristics appear that apply to most enterprises in this sector:

- *Small and medium sized enterprises dominate in each of these business services industries*. Many enterprises are even micro-enterprises. If enterprises are large (e.g. major consulting firms), “soft” economies of scale like branding, reputation and experience are more important for favouring larger enterprises than “hard” technical economies of scale like those that can be observed in manufacturing or in infrastructure services. ICT and e-business have the potential to increase economies of scale, as will be shown in section 2.1
- Typical for services companies is that *national or even regional markets are most important for the majority of these enterprises*. This is mainly due to the fact that services are typically produced and consumed at the same time. Many international companies (e.g. in industrial cleaning or security) consist of regional entities following similar business procedures.

  Exceptions, however, can be found in knowledge-intensive service activities such as many professional or technical services, where specialised companies with world-wide reputations provide services on an international scale (e.g. “star” architects or the top business consulting, legal and auditing firms). Typically these firms target other customer groups (e.g. larger firms) than other companies in this sector.

Despite these similarities, there are still many differences between the sub-sectors within NACE 74. To be able to discuss e-business in this sector, a reasonable grouping of related services is necessary to goes beyond the simple output-oriented classification chosen in NACE. Such a grouping is more oriented at the service activity and less at the companies providing the service.

As the major potential of ICT and e-business is to make more efficient those processes of service provision that are a) recurring and b) standardised, a reasonable approach is to classify the services according to similarities in their business processes. Three types of services can be defined (section 2.1 will provide more details on the use of e-business in the different groups):

Project-based services: This type of service typically consists of conducting a well-specified knowledge-intensive task, which requires the co-operation of a group of individuals, maybe even of companies. The demands on the specific knowledge of companies and people involved are rather high. These projects have a clear aim as well as a clear start and end date. Consulting projects, writing a research study or designing an advertising campaign are examples of this kind of service. The projects are typically very individualised, taking into account the client's specific needs and wants. Coordinating the involved knowledge workers and managing the project are crucial activities for such services.

Standardised ad-hoc services: A second group of service activities is fairly standardised and provided on a case-by-case basis. Cleaning an oil-tank, conducting a direct mailing campaign, providing labour on a temporary basis or filing a standard income tax declaration are examples of standardised ad-hoc services. The demands on the skills of employees are thus typically lower than for project-based services. Important success factors are efficient workflows of standardised processes as well as the ability to create a continuous stream of new business either from new or from repeat customers.

Standardised continuous services*:* The third group comprises typical outsourcing services such as office cleaning, security services or bookkeeping. Important for these activities is an efficient organisation of processes as well as an efficient interaction between client and service provider. In addition, enterprises offering standardised continuous services have to manage the trade-off between realising economies of scale by offering standardised services and realising higher profit margins by offering individualised services.

While some companies – and even some sub-sectors – are specialised in one type of service activity, it is not uncommon for companies to offer a combination of service types. An advertising agency, for example, might offer project-based services (development of an advertising campaign) as well as standardised continuous services (ongoing media planning and placement of advertising). A tax accountant's office might provide standardised continuous services (bookkeeping), standardised ad-hoc services (filing a tax declaration) as well as project-based services (consulting on tax-related issues of a merger in co-operation with other legal and tax specialists). Combining such services activities has the advantage of decreasing risks (especially, when adding continuous services). It has the disadvantage, though, that such diversified companies cannot fully capture the benefits of specialisation.

1.2 Economic situation and key figures

In the following section, data from the Eurostat New Cronos database SBS ENTER is used to describe the sector and analyse its performance. Due to the incompleteness of the new datasets the most recent available reference year is 1999. For the same reason, not every EU country is covered in the analysis. In most cases Ireland, Greece and the Netherlands were not included. The data describing the sector's class size distribution is even more incomplete and important countries like Germany or the United Kingdom are therefore not represented in this specific part of the analysis.

1.2.1 Turnover and value added

The turnover of the business services sector in the European Union (excluding Greece, Ireland and the Netherlands) reached over 863 billion Euro in 1999. Over 55% of the total turnover was generated in knowledge-intensive sub-sectors (NACE 74.1, 74.2 and 74.3), characterised by high intensity of value creation. Almost 37% of the sector turnover was created by the legal, accounting and management consultancy companies. The next largest segments (by turnover) were miscellaneous business activities (NACE 74.8) and advertising (74.4), reaching shares of 18.0% and 13.3% of the total sector turnover. Investigation and security activities form the smallest unit (see table 1-1)

Table 1-1: Structure of the business services sector in the EU-12 (1999) by kind of activity

NACE Rev. 1		Turnover		Value added at factor cost	
		EUR (m)	%	EUR (m)	%
74.1	Legal, accounting, book-keeping and auditing activities; tax consultancy; market research an public opinion polling; business and management consultancy; holdings	316,871.3	36.7	174,947.3	37.9
74.2 and 74.3	Architectural and engineering activities and related technical consultancy (74.2) and Technical testing and analysis (74.3)	159,118.7	18.4	85,706.9	18.6
74.4	Advertising	114,722.0	13.3	38,307.0	8.3
74.5	Labour recruitment and provision of personnel	62,096.0	7.2	47,200.8	10.2
74.6	Investigation and security activities	16,628.4	1.9	12,520.8	2.7
74.7	Industrial cleaning	38,497.6	4.5	29,386.7	6.4
74.8	Miscellaneous business activities n.e.c.	155,068.2	18.0	73,045.2	15.8
74	Business services total *	863,002.2	100.0	461,114.7	100.0
* EU-12: no data were available for Ireland, Netherlands and Greece.					

Source: Eurostat New Cronos 2002 SBS ENTER. DIW 2002.

In 1999, the business services sector generated 461 billion Euro of value added at factor cost in the twelve European countries considered here. Again, knowledge-intensive services accounted for the largest shares. The consulting services sub-unit alone generated almost 38% of the total value added in the sector. Taken together, NACE 74.1, 74.2 and 74.3 accounted for more than 56% of the value added in the sector. The smallest by value added were investigation and security services (NACE 74.6) and industrial cleaning (NACE 74.7).

1.2.2 Regional distribution

Business services companies, above all the knowledge-intensive ones, have a considerable impact on the performance of other industries. By supporting the introduction of innovations, the implementation of new business strategies and the management of change, they enhance the competitiveness of their clients. Thus, a strong and innovative business services sector is an important part of a well functioning industrial system. When comparing countries, it has to be borne in mind, however, that in some countries business services are traditionally provided within the companies that use them. This means that, statistically, they are counted as part of the "using" industries. Data on the business services sector, therefore, only inform about activities in independent firms, not about the entire business service activity in a country. Nevertheless, a strong business services sector can still be considered as an indicator of a sophisticated division of labour and a differentiation of services, which enhances specialisation, efficiency and competition, and hence the overall quality of business services provision. Business services sectors have grown in all European economies over the last few years. This hints at a particularly dynamic sector, but also at ongoing outsourcing of services.

Table 1-2: Turnover of the business services sector in EU-12 countries (1999)

Country	Turnover		Value added at factor cost		Share in country Gross Value Added
	EUR (m)	%	EUR (m)	%	%
Austria	13,653.9	1.6	6,924.5	1.5	3.8
Belgium	28,059.3	3.3	11,274.7	2.5	5.2
Denmark	13,724.6	1.6	6,992.1	1.5	4.9
Finland	8,352.5	1.0	4,017.8	0.9	3.8
France	159,287.4	18.5	66,408.7	14.4	5.4
Germany	246,471.4	28.6	164,176.8	35.6	8.9
Italy	87,596.0	10.2	42,097.6	9.1	4.1
Luxembourg	1,610.5	0.2	941.8	0.2	5.2
Portugal	13,870.3	1.6	4,722.0	1.0	4.9
Spain	50,429.5	5.8	24,882.3	5.4	4.7
Sweden	26,553.1	3.1	11,303.6	2.5	5.5
UK	213,393.7	24.7	117,372.8	25.5	9.4
EU-12*	863,002.2	100.0	461,114.7	100.0	6.7
* no data available for Greece, Ireland and Netherlands.					

Source: Eurostat New Cronos 2002, SBS ENTER. DIW 2002

The largest contributors to the total EU-12 business services sector in 1999 were Germany (28.6%), the UK (24.7%) and France (18.5%). Taken together they accounted for 72% of the total turnover. The smallest shares were observed for Luxemburg (0.2%) and Austria, Denmark, Finland and Portugal (each reaching less than 2% of the EU-12 turnover). Analysing the data concerning the sector, one can draw a general conclusion: the structure of the national economies determines which (and at which) quantitative level business services are offered. The more industrialised and developed a country is, the higher the demand for business services.

Turnover only provides information on the revenues of the enterprises from all services rendered. (No statistics for production value are available). When the contribution of the country to the total value creation in the sector in the EU-12 is to be considered, the more relevant indicator is value added at factor cost. In 1999, the largest shares in total value added in the twelve EU countries were held by Germany (35.6%) and the United Kingdom (25.5%). They were followed by France and Italy with a share of 14.4% and 9.1% respectively. At the low end we find Luxembourg (0.2%) and Finland (0.9%).

The comparison of the relations between the shares of turnover and value added in the total values reveals an interesting observation: only in three cases (Germany, Luxembourg and the UK) is the share of the country in the total value added for EU-12 greater or equal to the share of the country's turnover in the total EU turnover. A possible explanation is that the business services sector in these countries has a large share of sophisticated, knowledge-intensive (and hence high value added) sub-sectors.

The average share of value added at factor cost in national gross value added for the EU-12 in 1999 was 6.7% (see table 1-2). The highest shares among the countries included here were observed in the United Kingdom (9.4%) and in Germany (8.9%). Within the EU-12 Austria, Finland and Italy had the smallest share of value added of the business services sector in the total value added of the economy (around 4%).

1.2.3 Employment, productivity and labour costs

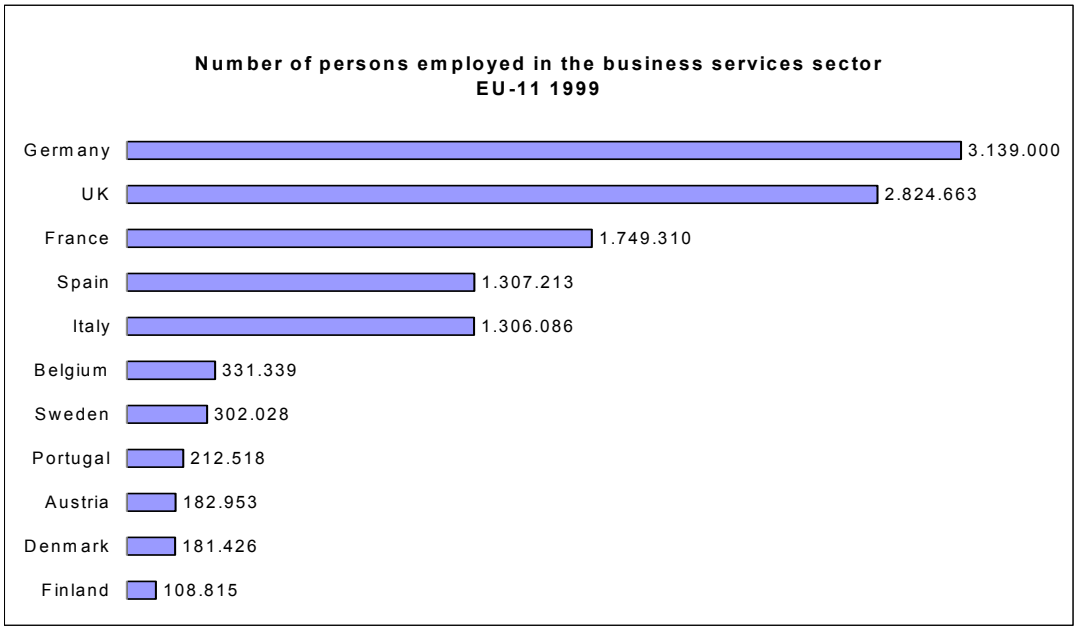
Data on the number of people employed in the business services sector were only available for eleven EU countries. Greece, Ireland, Luxemburg and the Netherlands are therefore not included in the analysis. According to Eurostat data, more than 11.6 million people were employed in the

EU-11 business services enterprises in 1999 (see table 1-3). The average share of employment in business services in total employment in the economy was 7.9%.

The regional employment structure reveals that the largest number of people working in the business services sector in the eleven EU countries is found in Germany (27% of EU-11 sector employment). The second and third places are taken by the United Kingdom (24%) and France (15%). These three countries constitute 66% of the total EU-11 employment in the industry. At the same time, over 75% of the total value added at factor cost was created in these countries. Figure 1-1 presents the regional structure of sector employment. The three countries with the largest business services sectors are, thus, also characterised by above average productivity.

Employment statistics show further differences in the importance of the business services sector in the national economies. The highest number of people employed as a share of the country's total employment was observed in the United Kingdom (10.3%). At the same time, the UK business services industry is also characterised by a share of the sector in total value added (9.4%), which is significantly above average. Higher than average sector employment shares in total employment have also been observed in Spain (8.6%), Belgium (8.5%) and Germany (8.3%). Significantly lower values of the share of business services employment in total employment were recorded in Austria, Finland and Portugal. In all these countries the figures did not even reach 5%. Differences in the levels of industrialisation as well as in the intensity of outsourcing are responsible for variations between countries. Enterprises in countries with below average sector shares in total employment may perform some activities in-house, whereas their counterparts from countries with above average shares may have outsourced them.

Figure 1-1: Number of people employed in the business services sector EU-11



Source: Eurostat New Cronos 2002. DIW 2002.

Table 1-3: Employment, productivity and labour costs in the business services sector (1999)

Country	Employment		Productivity	Personnel Costs
	Number of people employed	share in country total employment	Value added per employee (1000)	per employee (1000 EUR)
Austria	182,953	4.6	44.6	29.2
Belgium	331,339	8.5	41.9	28.9
Denmark	181,426	6.6	43.3	31.1
Finland	108,815	4.9	40.7	27.5
France	1,749,310	7.5	38.7	33.9
Germany	3,139,000	8.3	61.2	26.4
Italy	1,306,086	5.9	59.3	22.3
Portugal	212,518	4.4	25.4	12.9
Spain	1,307,213	8.6	23.9	14.3
Sweden	302,028	7.3	46.8	38.3
UK	2,824,663	10.3	45.9	25.7
EU-11*	11,645,351	7.9	46.9	26.2
EU-11: no data were available for Greece, Ireland, Luxembourg and the Netherlands.				

Source: Eurostat New Cronos 2002. DIW 2002.

The figures presented in table 1-3 for productivity and personnel costs per employee do not include self-employed professionals who might have a significant share in this sector and are likely to produce high value added. Relatively low values of productivity and personnel costs may be partly explained by the exclusion of this high-income fraction of the workforce and by a relatively large share of low value added business services in the country.

The average productivity, measured as value added per employee, in the eleven EU countries was 46,900 Euro in 1999. This figure also varies considerably between countries. The lowest productivity was observed in Spain (23,900 Euro) and Portugal (25,400 Euro), the highest value (61,200 Euro) was recorded for Germany.

There are also significant differences in the personnel costs across Europe. On average, the personnel costs in the business services sector were around 26,200 Euro in 1999. At the low end of the scale are Portugal and Spain with 12,900 Euro and 14,300 Euro, around 50% of the EU average. The highest personnel costs were reported in Sweden. With 38,300 Euro a Swedish employee in the business services sector is, on average, almost 50% more expensive than an employee in the EU countries. Explanations for such discrepancies are, among other things, potentially different weights of the sub-sectors within NACE 74, significant differences in labour productivity and also different social security costs borne by employers in different EU countries.

1.2.4 Size class distribution

The business services sector is characterised by a strong dominance of small enterprises. More than 99% of the enterprises in the sector employed less than 50 people in 1999. The domination of small firms results from the specific characteristics of many services included in the NACE 74 categories. In 1999, the smallest companies generated over 60% of the sector's turnover and employed more than half of the people working in the industry. Though accounting only for one percent of the total number of enterprises, the large companies (more than 250 employees) employed over 34% of the total sector work force, but generated only 23% of the turnover.

This can also be partly explained by the heterogeneity of the classification unit. Whereas small firms dominate in the knowledge-intensive and professionals-oriented services, operational services such as security activities, industrial cleaning, etc. are often provided by large

companies. Table 1-4 shows the size class distribution based on number of enterprises, turnover, and people employed for the combined NACE 74 industries.

Table 1-4: Size class distribution in the business services sector

Distribution by …	1 to 49	50 to 249	>250
Number of enterprises (%)	99.3	0.6	0.1
Turnover (%)	60.4	16.9	22.6
People employed (%)	51.4	14.5	34.1
EU-8, no data were available for Germany, Denmark, Greece, Ireland, Luxembourg, the Netherlands, and UK. 1999 (latest available figures)			

Source: Eurostat New Cronos 2002. DIW 2002.

1.3 General trends and business issues

The general trends and business issues of importance for the business services sector are as diverse as the different sub-sectors. Nevertheless, some critical issues such as changing customer needs or the availability and cost of staff are of importance to all sub-sectors, as are recent developments like the current economic downturn.

1.3.1 General business issues

A number of general issues exist for the business services sector, which relate to the specific way of doing business in this sector and which pose constant challenges to the enterprises. The ability to cope with these issues crucially determines an enterprise's success. ICT and e-business applications have strong potential to enable companies to deal with these challenges.

Constantly changing customer needs

Business services are to a large extent customer-driven. Customers are constantly asking services companies to provide new services or to modify existing ones. Coping with these customer demands and continuously adapting services and processes to new requirements requires flexibility and high levels of qualification. Knowledge-based business services in particular are challenged as not only new ways of providing the services are demanded, but also the subject of the service changes.[2]

One recent example is of changes resulting from the increasing use of e-business and the Internet: Business consultants were not only asked to provide insight into strategic aspects of e-business, legal advisers into legal problems associated with e-business and advertising agencies into the opportunities of the Internet for advertising - customers also demanded that the services themselves changed, e.g. that market research be conducted using online surveys to save cost and provide results more quickly.

Another example of changing customer needs are new service requirements coming from the increasingly international nature of many larger corporations, requiring knowledge about legislative issues and business practices in different countries as well as requiring the services to be provided on an international level (see also 1.3.2).

[2] In a survey among UK companies in the management consultancy sector, the marketing and communications sector and the exhibition and conference sector, about one third of all respondents named changing customer needs as the biggest issue at the current time. See PricewaterhouseCoopers/DTI (2001a,b,c).

Availability and cost of staff

As services are labour-intensive, the availability of staff at conditions that are compatible with market prices for the services is a crucial issue. For different sub-sectors, however, the details of personnel requirements differ. For sectors typically paying rather low wages (e.g. security services, industrial cleaning), the problem is not the availability of labour per se, but the availability of labour at reasonable wages, especially in the face of alternatives for potential employees, such as combining unemployment benefits or social security payments with black market work.

SMEs often lack the resources of large companies for recruiting and educating employees as well as for competing with wages that large firms are able to offer in the so-called “war for talents”.

Those sub-sectors, with their very specific skill-requirements on labour (e.g. business consulting, advertising, engineering) face the continuous problem of finding specialised staff. This problem has been severe during the e-business boom particularly for e-business-related knowledge, because many potential employees chose to start their own business instead of working for a consultancy. Currently, at the end of 2002, insufficient labour availability is no longer a major issue. For all these sectors, the availability of labour is crucially determined by government policies that influence – among other things – incentives to accept jobs, the average level of education, the composition of graduates by study field, the labour force participation (especially of women and older people), and the ease of immigration.

Intensive competition

In many business services competition is fierce. Barriers to entry are often comparatively low and are to a large extent built on brand, reputation and experience. Economies of scale favouring (large) incumbents are often weak. Thus, in many areas of business services it is relatively easy for an experienced employee to leave and set up his/her own shop.

This applies especially to those business services where specialist knowledge is important and where this knowledge is owned by individuals rather than by the companies (e.g. consulting, public relations, photography). Small spin-off companies can often compete effectively on price and specialist knowledge and compensate their small size by engaging in co-operations. Often this leads to a state of “co-competition” where they compete with other (also with larger) companies for some projects and cooperate with them in others.

But services with comparatively low demands on employee qualifications (e.g. routine secretarial services, industrial cleaning and security services) also attract a continuous flow of market entrants that compete primarily on price with established firms. Thus price competition is especially strong in these sub-sectors.

New market entrants also come from other sectors of the economy. Business consulting firms in particular increasingly have to compete with IT consulting firms when it comes to e-business projects. The desire of companies to seek not only consultation about new ideas but also on implementation of the required technologies from one provider enforces this competition.

Sub-sector interdependence

In certain areas of business services (e.g. in marketing-oriented services) the relevant sub-sectors are highly interdependent, with companies from one sector acting as suppliers or customers of the services from other sectors. Often the combination of these services is offered as a single entity to the final customer (e.g. an advertising campaign includes the creative work as well as the media planning and buying activity).

Freelancers, i.e. one-person companies, also play an important role in the professional services, marketing services and technical services sub-sectors. Freelancers are often contracted by larger companies either for their special skills or to compensate short-time staff-shortages.

Setting up and keeping networks of freelancers and specialised suppliers as well as managing the associated coordination and paper work associated with a high number of short-term project-based engagements is a constant challenge for companies acting as buyers as well as for those acting primarily as suppliers.

Financing issues

Many services companies, especially those in knowledge-intensive business services, have started rather small. As they grew, they kept the legal form from the early days of operation. They are often organised as partnerships with the owners being personally liable, and this legal form may be considered inappropriate as companies become larger, mainly for two reasons. Firstly, as the size of the enterprises and projects increases, the personal risks for liable partners rise as well, and many partners are no longer willing to bear these risks. And secondly, the funds of these companies available for expansion are typically limited, especially if compared to those funds available to public companies. In addition, the latter can pay their employees more competitively, e.g. by awarding share options.

As a result of these issues many business services companies have considered changing their legal nature, aided also by the introduction of new legal constructs like limited liability partnerships.

1.3.2 Recent trends and developments

The recent trends and developments within the business services sector can be divided into short-run issues like the current economic slowdown and the end of the e-business boom on the one hand and long-run issues like the trend towards outsourcing or internationalisation on the other hand.

Current economic slowdown

Most business services are pro-cyclical. In times of an economic slowdown enterprises tend to cut marketing expenditures as well as any sort of future-oriented projects with uncertain return on investment. Thus, business services supporting these activities suffer particularly in economically difficult times. These are, for example, most marketing-oriented services like advertising, public relations, market research, and fairs and exhibitions but also many consulting services focused on the future strategic course of companies or on capturing uncertain opportunities of new technologies. Any sort of project-oriented business service suffers from the fact that projects can easily be postponed or cancelled when companies need to save costs in times of economic hardship.

Some business services can compensate for this drop in demand by offering specific services for difficult times such as legal consultation related to lay-offs or business consulting to help cutting cost.[3] Others, especially those offering standardised outsourcing-oriented services (e.g. cleaning, direct mailing services), might even win some new business during a recession, as companies decide to buy these services on the market instead of producing them internally.

[3] Legal and tax services seem to be able to profit especially during difficult times. As the German ZEW has shown in its recent business cycle survey among “services companies for the information society”, tax consulting and auditing were the sub-sector with the most positive evaluation of the current business situation and the only sector with a positive assessment of the employment development. Of those sub-sectors relevant for this report, advertising services in comparison show the most negative assessment. Cf. ZEW Branchenreport Dienstleister der Informationsgesellschaft, July 2002.

End of the e-business boom

Many sub-sectors of business services profited from the e-business boom of the late 1990s and 2000. Consulting companies provided e-business-focused consulting services, legal professionals provided counselling for venture-capital financed start-ups as well as for mergers and acquisitions, and public relations companies helped start-ups to become widely known. Advertising companies offered new Internet-oriented advertising possibilities to new and old economy firms alike and in addition profited from the considerable fraction of venture capital spent on marketing. Finally, organisers of fairs, exhibitions and conferences organised a large variety of new events related to Internet and e-business issues.

Many business services companies built up new capacity during the boom to handle the sudden increase in demand for e-business and Internet-related services. With the end of the almost frenetic business expansion, these companies were badly hit. Not only did the economic slowdown lead to a generally weak demand for services, but also the extraordinary demand for e-business related services suddenly fell and made much of the newly created capacity redundant. The overcapacity resulted in an ongoing consolidation process.

Focus on core competences favours outsourcing

A major force driving the growth of business services during the last decade was the tendency of companies to focus on their “core competences” and to buy everything else on the market. Services which are provided on a continuous basis, such as cleaning, security, or bookkeeping, particularly profited from this trend, as well as other, more individual services, e.g. engineering or public relations.

The trend towards outsourcing is also driven by the wish of service companies to establish long-term relationships with their clients and obtain a steady and predictable stream of income. Therefore, these companies try to sell continuous services (e.g. establishing and keeping long-run media relationships) to customers coming to them for ad-hoc projects (e.g. a single public relations campaign for a new product).

Internationalisation

Some business services operate on global markets (e.g. business consulting of large clients, M&A legal and tax advice, advertising and public relations for global companies). As many of the (larger) clients of business services companies are increasingly becoming international, their service companies have to follow them. These new requirements place specific demands upon companies in handling international clients, international co-operation and adapting to different regulations (e.g. data protection in market research, accounting rules and legal environment for legal and tax consulting). This is especially important for knowledge-focused companies.

The increasing internationalisation also exposes the services companies to as yet unknown exchange rate risks. This can even be the case if the service is provided in one country only. Exhibitions and fairs, for example, are often targeted at an international audience. A strong currency can lead to competitive disadvantages for service companies in these countries.

Increasing complexity of projects

As client companies become more international and larger, the complexity of services to be provided increases. Examples are strategy consulting projects such as the introduction of e-procurement systems for large, internationally spread companies, conceptualising and starting a global advertising campaign for international consumer product companies (e.g., Coca-Cola, Procter & Gamble or Nestlé) legal and tax consulting for international mergers (e.g. DaimlerChrysler) or the architectural and functional design of large building complexes (e.g. Potsdamer Platz in Berlin).

Such projects place specific demands on the project management abilities of the business services companies. But they also place demands on the availability of experts within the

company or within the company's network. The increasing demand for complex business services is a major driving force behind the creation and growth of large business consulting firms, law firms and auditing companies. Nevertheless, their importance in the sector is still comparatively low, as section 1.2 has shown.

Recent events

Some sub-sectors of business services have also been influenced by recent events. The events of September 11, 2001 considerably increased security awareness all over the world. Security services companies were able to profit from this increase in demand.

The recently discovered accounting frauds in large public companies in the US also had a significant impact on the sector. Within a short time, the major accounting firm Andersen dissolved in most countries, leading to a change in the industry structure. In the medium-run, tighter accounting rules will most likely lead to an increase in demand for such services so that the sector can expect further growth.

2 Use of ICT & e-business

2.1 The role of ICT and e-business in business services

The following section qualitatively analyses the role of ICT and e-business in the business services sector. Companies in this sector use new technologies for

- the procurement of direct and indirect inputs;
- the support of business processes related to the production and delivery of services;
- sales and customer care;
- marketing.

2.1.1 Procurement

Electronic procurement is important in two areas: procurement of MRO goods and procurement of direct inputs. The most important direct inputs for this sector are knowledge and information, human capital, and various industry-specific inputs.

MRO goods: office supplies

As survey results from section 2.2 show, 70% of those business services companies procuring online buy MRO goods online. Like companies from other sectors, they can use horizontal B2B marketplaces for buying office supplies and other MRO products or conduct transactions with selected suppliers over the Internet. Since transaction costs are typically high in relation to the actual cost of the products, major efficiency gains can be achieved by electronically procuring this type of goods. Companies providing standardised continuous services in particular can profit from streamlining recurring procurement processes. While the advantages of e-procurement of MRO goods are somewhat bigger for large companies with a greater number of procurement transactions, small companies can also achieve improvements in efficiency by electronically supporting their MRO procurement process. The survey results show that 70% of the small and 78% of large online-procuring companies procure MRO goods online.

Direct inputs: knowledge and information

Specialist knowledge and information are among the most important direct inputs for knowledge-intensive business services. The use of the Internet significantly enhances the access to information, increases speed and reduces the cost of obtaining information. Search engines, for example, considerably simplify the process of finding specific information. Competence sites and information portals specialised on narrowly defined subjects support the finding and exchange of knowledge. Online databases make easy and instant access to statistical information possible. Archives allow the searching of large databases of publications from all over the world. Marketplaces for research (e.g. www.mindbranch.com) allow international research from various sources to be easily found and ordered online. The electronic delivery of digitised documents has significantly increased the speed of obtaining information.

The Internet, therefore, considerably improves efficiency and reduces the cost of obtaining information, the key input for knowledge-intensive business services. Business and management consulting companies, for example, have improved access to research and market information. The same is true for advertising and PR companies, which conduct market research over the Internet and can access statistical databases with information on use and viewer statistics. Up-to-date information on legislative and jurisdictional regulations and decisions is important for legal and accounting firms as well as for architectural and engineering activities.

By providing easy access to information from all over the world, the Internet considerably helps to deal with the challenges that companies face due to the increasing internationalisation of services. The enhanced access to information particularly reduces barriers to market entry of smaller companies. They do not need large investments in databases or archives to acquire knowledge but can easily obtain specific information necessary to conduct high-quality business.

While the availability of information on the Internet offers many opportunities for service companies, it also poses a serious threat: it offers everyone free and easy access to specialist information and thereby seems to enable customers to conduct research themselves. However, with an increasingly large amount of information available, the intelligent use of information and the efficient management of knowledge becomes an increasingly complex task. It is therefore a core competence and a crucial part of the service activity of business services companies.

Direct inputs: human capital

Another major direct input in business services, and closely related to knowledge, is human capital. It is of major importance to knowledge-intensive firms with very special requirements on skills and ability of their workforce, such as most industries of NACE 74.1 to 74.5.

Over the past years, the use of ICTs in the recruitment process has become increasingly common. Firstly, almost all companies post open positions on their own website, sometimes even combined with online application tools. Small companies can thereby reach a large audience of potential employees even across country boundaries. Secondly, a large number of online recruitment services and employment marketplaces have emerged over the past years, which simplify the process of matching potential employees with employers. Survey results show that 50% of the large and 14% of small companies in the business services sector post job vacancies on Internet boards.

On some sites, companies can simply post open positions or browse applications. Other services specialise in directly matching open positions with appropriate employees. Vertical information portals increasingly serve as an important recruitment source for enterprises in specific industries. Due to the high degree of freelance work in the business services sector freelance and expert marketplaces are a third important area in the online procurement of human capital. While some marketplaces are open to all different kinds of freelance work (e.g. www.ework.com, www.smarterwork.com) others are vertically specialised (e.g. www.languagewire.com specialised on translators and other language-related services). An increasing number of tasks does not require the physical presence of the freelancer or expert, but can be conducted remotely and delivered over the Internet. Freelance and expert marketplaces on the Internet therefore offer the opportunity to reach and contract experts from all over the world.

While recruitment still requires face-to-face contact, searching over the Internet makes it significantly easier for companies to find employees or freelancers with very specific skills. In addition to reducing the cost and time necessary to hire skilled personnel, the Internet enhances the chances for SMEs to recruit a highly qualified workforce. It also reinforces the trend towards internationalisation by making experts across country boundaries accessible.

For companies from NACE 74.5 that are active in labour recruitment and the provision of personnel, such as executive search and placement agencies, human capital is the most important direct input. For them the Internet has become a major business tool and has considerably changed the way they conduct business.

Direct inputs: industry-specific inputs

In addition to the direct inputs mentioned above, each of the several sub-sectors within the business services sector requires specific inputs, which can be procured online to various degrees. The suitability for online procurement differs considerably.

The electronic support of procurement processes is most suited for companies with a large volume of direct inputs for providing continuous services and for companies with complex

supplier-networks. Sophisticated e-procurement systems exist in sub-sectors such as architectural activities services. In others the Internet only simplifies the finding of appropriate suppliers. Information portals in the industrial cleaning sector, e.g., offer online directories of suppliers for industrial cleaning supplies (e.g. www.cleanpoint.com, www.interclean.com).

A marketplace for the professional cleaning industry

Intercleantrade.com is a virtual marketplace for products, services and market information in the professional cleaning industry. It has a dedicated online catalogue as well as an extensive list of companies, featured products and services. A host of other options is available, including corporate profiles, employment vacancies, e-mail contacts, and information on professional events throughout the world. This comprehensive website allows professionals in the cleaning and maintenance industry to gain immediate access to the very latest information. Intercleantrade.com contains full contact and address details of the industry's many suppliers. Users can search for a supplier name, information on a product, or the latest news from the market and its companies.

Source: www.intercleantrade.com

Even if the actual transaction is not conducted online, companies of all sizes profit from simply preparing the purchase over the Internet. They can gather information on suppliers, available products, prices, and conditions and profit from significantly increased market transparency. Even micro-enterprises can benefit, e.g. photographers can speed up the process of buying film and other photographic equipment.

The use of e-marketplaces is most appropriate if products can be standardised and/or digitised. One important input for the advertising industry, for example, which is comparatively easy to standardise and trade online is media space. As a result, a number of electronic marketplaces for online and offline media space have emerged in Europe (e.g. www.adhub.co.uk, www.mediabuy.it, www.crobike.de). Another direct input for the advertising industry, which can be digitised and delivered online, are photos and images (e.g. www.nordicphotos.com, www.onetox.com, www.gettyimages.com).

2.1.2 Services production and delivery

While enterprise resource planning systems (ERP) have been used by manufacturing as well as wholesale and retail companies for many years, the use of such complex systems is relatively new for the services sector. The most important reasons for this are firstly, that ERP systems were originally not adapted to the specific needs of services companies. Secondly, many business processes seemed to be less standardisable and therefore less suitable for automation than in manufacturing. And thirdly, the business services sector is dominated by SMEs, for which the implementation of complex IT systems is often not profitable.

Nevertheless, ICTs and e-business applications have lately become increasingly important for optimising business processes related to the management and delivery of business services for various reasons:

- The increasing complexity and internationalisation of projects (see section 1.3) has increased the demands on project management and the necessity to efficiently manage the relationships between various involved and often dispersed parties (project teams, contractors, suppliers, clients etc.). Independent of the size of a services firm, the more complex a project, the more valuable are e-business systems that support the planning and management of all involved business processes.
- Intense (price) competition has resulted in a growing effort to reduce cost by standardising business processes. ICTs and e-business systems are most advantageous

for recurring, standardised processes or activities. Although many business services are individual, most processes can be split into standardisable and non-standardisable components. By identifying the underlying procedures of recurring processes that can be standardised and automated, e-business systems become applicable even to very individual services.

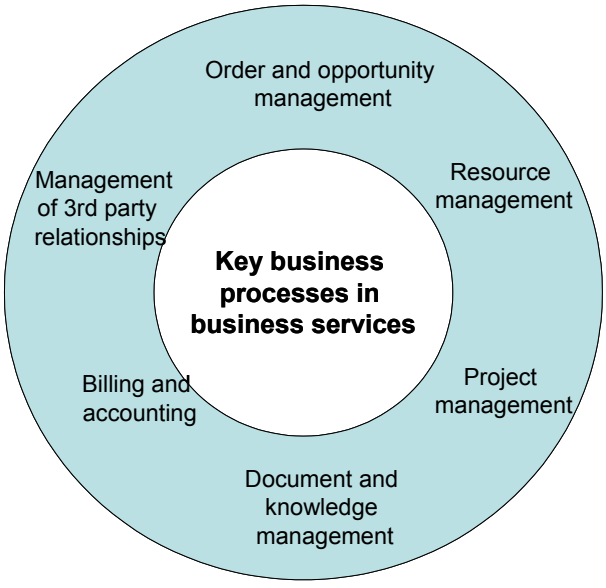
- An increasing number of standardised software packages for key business processes are offered at low prices that make them also affordable for smaller companies.

"Professional Services Automation" (PSA) has become a much-used term for describing e-business applications that integrate and automate key business processes in the business services sector. They are often described as ERP for service providers. PSA systems usually consist of a large variety of different modules that can be used separately but offer most value if applied in an integrated way. They can be used to streamline major business processes, increase productivity of personnel, reduce cost, and increase the organisational efficiency of service provisioning firms. In particular the shift from client-server to web-based systems has allowed enterprises in this sector to significantly enhance interaction between employees and with third parties.

In addition, PSA software has significantly improved the availability of up-to-date information as an important input for planning, strategy and decision-making at executive level. Project-based services companies in particular have to continuously adopt business processes and the supporting IT infrastructure to changing customer needs and market conditions as well as to a changing regulatory environment. As a result, IT increasingly becomes part of the business strategy instead of being merely a supporting department.

The most important business processes in the business services sector that are supported by e-business applications are illustrated in figure 2-1.

Figure 2-1: Key business processes in business services



Source: Berlecon Research (2002)

Order and opportunity management

Ensuring a continuous flow of orders is vital for the success of any services company, especially for those that offer project-based services on an ad-hoc basis. ICTs can help in three ways to identify new business opportunities and keep the order pipeline filled.

Firstly, the Internet has become an increasingly important tool for governmental institutions and commercial clients to call for tenders, proposals or quotes. It has, therefore, become vital for service companies to know how to exploit the Internet as a source of new business opportunities. Calls for tender or proposals on the Internet offer smaller companies in particular and those that are new to the market the opportunity to compete for orders without being well known or having established relationships with the ordering parties.

Additionally, on the Internet companies can easily and at low cost gain information on potential customers and competitors. A continuous and systematic analysis of the market can significantly help to identify new business opportunities. The importance of insider information as a barrier to market entry is reduced by the Internet.

Thirdly, aggregating and analysing data provided by customer relationship management systems can support the process of identifying new business opportunities with prospective and existing customers (see also section 2.1.3).

Resource management

The efficient allocation of all major resources across the company is a central task for business services companies. Since personnel are not only an important cost factor, but also the most important resource, optimal utilisation of the workforce determines profitability in many business services companies. The full utilisation of resources is of specific importance to those enterprises that offer ad-hoc services with fluctuating demand, such as temporary employment agencies or secretarial services. It is also important for large corporations with a large and diverse workforce that needs to be allocated to various projects, each with specific resource and skill requirements.

ICTs can significantly support this process by enabling real-time access to information on current resource use and expected future availability. Simple stand-alone applications such as time entry software can already help to coordinate resources in smaller companies. For larger companies, integrated systems, which make enterprise-wide information on resource use available from different sources, such as time, project and contract management can be used for analysing current and forecasting future resource capacity. Specific resource management software consolidates information from various sources and helps to coordinate supply and demand. Resource databases can be implemented that allow internal staff and external contractors to be searched by skills, availability, and other criteria.

Use of browser-based PSA software at Cap Gemini Ernst & Young

Cap Gemini Ernst & Young is one of the largest management and IT consulting firms. For the last four years it has worked with the software company PeopleSoft to build a software solution that makes the professional services business more efficient and profitable. Specifically, Cap Gemini Ernst & Young wanted to enhance project tracking, increase efficiency in financial and people management and gain a clear look at profitability. To improve workforce productivity, it uses human resources management and financial management applications. Its mobile workforce can now review inventory, check project profitability, review resource deployment, and access core project information online. “Moving to an environment that is browser-based is appropriate for us,” says Mark Richardson, Vice President. “It expands our ability to give people access to information from wherever they are. Having easy access to information and being able to act on it rapidly is critical for us.”

Source: www.peoplesoft.com/corp/en/case_studies/

Project management

Contrary to resource management, which allocates resources across the entire company, project management relates to the management of resources for single projects. Project management is at the heart of project-based business service provisioning and is one of the most important

factors determining profitability and customer satisfaction. Most project-based service companies today use at least single software modules to support project management. Others have implemented integrated systems that are able to consolidate information from different sources and thereby to increase organisational efficiency across various business processes. Accordingly, the term “project management software” is sometimes used for just one single application while others subsume a whole set of corresponding software tools to this term, including resource management, communication, accounting and billing etc.

Central tasks in the project management process include:

- *Managing the project workflow*: distributing different tasks to the various members of the project team, including freelancers or sub-contractors; scheduling meetings and setting deadlines for deliverables; reporting of working progress by the team members to the project manager; continuously adapting the project to this information, making project changes, reallocating resources; communicating work progress to the client; etc.
- *Managing collaboration and communication*: ensuring smooth communication between all involved parties; providing access to common working documents; alerting team members to deadlines; keeping them informed on project progress and changes; etc.
- *Time and expense tracking:* i.e. capturing time and expenses spent on behalf of the client; adapting project plans and resources on the basis of tracked data; integrating time and expense information with back-office systems such as billing and resource management; etc. The survey results in section 2.2 show that more than 15% of all small companies in the business services sector and over 50% of the large ones use online technologies to track their employees’ working hours and production time.
- *Performance analysis:* aligning overall project expenses with project budgets; analysing productivity of project resources; reporting of project performance; etc.

The demands on project management have increased considerably over the past years. A number of factors have resulted in an increasing complexity of projects (see also section 1.3.1), e.g. internationalisation, resulting in locally dispersed team members, or outsourcing and sub-sector interdependency, resulting in ever more parties being involved internally as well as externally. To complicate things even further, these parties come from different business service areas (e.g., international M&A projects of large firms involve management consultants, legal advisors, IT service providers, international public relations agencies, etc.).

In response to these challenges, an increasing number of project management solutions are web-based. Web-based systems allow the centralised storage of data on a single server and access to this data from every computer that can be connected to the Internet. This allows project members at various remote locations to access up-to-date information and input data, without the need for building up a complex IT infrastructure. According to the *e-Business W@tch* survey, 45% of the employees in the business services sector work in companies that offer remote access to the company’s computer system.

In the sector, 15% work in companies that even offer wireless access to central data. Wireless business applications provide an additional degree of freedom: they allow employees on the go to connect to centrally stored data independently of time and place. A service worker, for example, can check the current availability of resources, instantly communicate a customer order to the back office system and input time spent on behalf of the client into a central time tracking system.

The new abilities of e-business applications in project management enable companies that use such applications to participate in more complex and international projects. E-business applications also enable companies to outsource an increasing number of tasks to external parties. This allows business services companies to specialise in their core capabilities and use ICTs to collaborate with a network of partners to deliver a complex set of services.

Internal communication and project management in a German multi-media agency

A German multimedia agency with 170 employees in three branch offices in Germany, UK and Spain delivers multimedia services to its clients on a project basis. Teams consist of 10-35 technical, design and management experts.

A number of e-business applications are used to improve collaboration and resource management. An intranet is used to make information – internal as well as client information – easily available to all employees. Project management software is used to allow members of the team from the various branch offices to report the status of their work on a weekly basis. In addition, online-seminars are offered and offline events such as seminars or presentations are announced. In the near future the whole internal information and communication flow is to be managed over the intranet with browser-based architecture. In addition, the integration of several business applications is planned.

Source: BMWi / Berlecon Research

Document and knowledge management

The increasing amount of information available on the Internet has made the efficient management of documents/knowledge a key success factor for knowledge-intensive services. Since information is normally stored in documents, document management and knowledge management are very closely related tasks. ICTs can help to support the process of efficiently managing documents and knowledge on three different levels:

1. *Storing and retrieving business documents:* Document management systems (DMS) help systemising the way business documents are stored and retrieved. These systems allow documents to be indexed and archived and can control the access to sensitive documents. They provide a centralised way for employees and partners to easily locate and retrieve documents. Paper documents can be converted into electronic documents to enable electronic storage and archiving. DMS are not confined to conventional documents but can be used for all sorts of files. So-called digital asset management (DAM) software stores and organizes images, audio, video and other digital objects, making them easier to find, transform and reuse.
2. *Storing and retrieving of explicit knowledge:* Knowledge management describes the process through which organisations generate value from their intellectual and knowledge-based assets. Explicit knowledge consists of anything that can be documented, archived and codified. Here document management and knowledge management overlap. Knowledge management systems are used for systematic information gathering and research compilation and allow all employees easy access to all knowledge resources within the company even with staff turnover.
3. *Sharing of tacit knowledge:* Much harder to grasp is the concept of tacit knowledge, or the know-how contained in people's heads. The sharing of tacit knowledge is predominantly a face-to-face process. Specifically in small and medium-sized companies ICTs offer little support in this process apart from generally supporting communication. In large companies with various locations around the world, however, ICTs can be of tremendous value to support the sharing of this kind of know-how. Employees can, for example, exchange ideas in electronic communities centred around certain subjects or pose questions on newsboards, use e-learning tools, or participate in electronic seminars. Most important, though, is that ICT can help find tacit knowledge in a company, e.g. by compiling information about specific skills and project experience of employees. This information can then be used to search for employees most likely able to answer specific questions or being part of specific projects.

The efficient management of documents and knowledge is important for companies of all sizes, especially for those that have to deal with a large amount of files that have to be accessed by many different parties in the workflow. Knowledge management systems are, however, most valuable for large enterprises with a complex and often dispersed knowledge base. These can profit most from economies of scale in implementing such systems. The *e-Business W@tch* survey results show that 7% of the small and 24% of the large companies in this sector use knowledge management systems.

Implementing software and the technical infrastructure is, however, only a first step towards an efficient management of documents and knowledge. Ensuring the consistent use of these systems by all employees is a much more important issue that touches the organisational and cultural structures of the enterprise.

Billing and accounting

ICTs and e-business applications also play an important role in supporting billing and accounting of business services companies. Integration with various systems such as time and expense tracking makes billing and accounting systems most valuable. Information from timesheets about billable hours can, for example, be connected to billing systems, which aggregate information and automatically produce invoices, present them for approval and deliver them to the customer. Integration with human resource management systems (e.g. to pay freelancers) and financial systems makes them most efficient. Some systems offer online access to invoices by clients or present electronic bills to customers.

Management of third party relationships

An important part of the service of many companies in this sector is the coordination and management of third-party relationships on behalf of the client. Accordingly, intermediation plays a significant role in business services. Third parties may be

- the end-user of a product or service;
- suppliers, sub-contractors and freelancers;
- the government.

For companies from the advertising industry (NACE 74.4), for example, the management of third party relationships is a core business. They not only design advertising campaigns for their customers, but also manage the various relationships with suppliers, freelancers and contractors within the advertising value chain. This can include relationships with the media for advertising space, with a multimedia agency for website design, a freelancer for photographic services or with a printing company for advertising material. The advertising company has the responsibility of managing and integrating all involved parties into the project workflow and providing the infrastructure for smooth communication and the exchange of documents. In addition, the advertising agency has to manage the relationship with the customer's target group, e.g. through interactive advertising channels.

Managing third party relationships is also a core business in the architectural and engineering industries (NACE 74.2). They have to manage a complex network of suppliers and subcontractors on the one hand and the relationship with government agencies for building supervision, planning permission and clearance etc. on the other hand.

ICTs and e-business applications play a major role in the management of such complex third party relationships. Firstly, the speed and cost of communication has been significantly enhanced by the use of e-mail. In almost 90% of all companies in the business services sector e-mail for external communication is available for the majority of office workers (cf. section 2.2). Secondly, documents can easily be exchanged over the Internet. More than half of all companies in this sector exchange documents with suppliers and customers electronically. Third, the possibilities for collaboration have been significantly enhanced by new technologies. To share documents

and/or perform collaborative work is by far the most important use of online technologies other than e-mail in this sector, according to the survey results.

More sophisticated, often web-based, systems allow third parties to directly access project-related information and input information. Clients can, for example, follow the progress of the project and input change requests. Likewise, freelancers and remote workers can see deadlines, report problems and input time spent on certain tasks. About a fifth of all employees in this sector work in companies that have an extranet to support the collaboration with external parties. The high percentage of firms using an application service provider in this sector (11%) could be an indication for the use of web-based solutions for collaborative tasks.

Industry-specific business processes

Besides the business processes described, which apply to many industries in this sector, various industry-specific business processes are optimised with the help of new ICTs. The industry specific systems and software solutions are as diverse as the various services that are subsumed in the business services sector. Two examples can illustrate the point here. Companies active in technical testing and analysis, for example, have lately started to use wireless technologies to significantly improve the efficiency of their field workers by allowing them to input data on-site and access central databases. And for most public opinion polling companies it has already become standard to use specific software to support conventional telephone surveys and offer Internet-based surveys in addition.

2.1.3 Sales and Customer Care

ICTs and e-business applications are extensively used by business services companies to support processes related to sales and customer care:

- They are used to improve customer service and manage customer relationships.
- They provide new sales channels.
- They have enabled companies to offer new products and services.

Customer service and relationship management

Maximising customer satisfaction and building long-term relationships with clients is a key success factor for business services companies. It is of particular importance for companies that offer services (project-based or standardised) on an ad-hoc basis and depend on returning customers. ICTs can help this in several ways:

- *Customer relationship management*: customer relationship management (CRM) systems provide a central database containing all data related to the company's prospective or actual customers. CRM systems track all forms of contacts with the client and store information that can be used to evaluate future demand and business opportunities. Such systems are most advantageous for companies with a large customer base, which can reap economies of scale from automating client interaction. The survey results show that only 6% of small business services companies and 35% of the large ones use CRM systems.
- *Service-related customer care*: Companies can offer Internet-based customer services that allow for a high degree of interactivity and offer clients access to up-to-date information. Clients can, for example, track the status of a project, input change requests, use interactive help desks, access account information online, etc. Internet-based services can be offered at low cost and at the same time offer substantial value to the client if they complement (and not substitute) conventional service-offerings. In general, the Internet has improved the speed of interaction with clients.

- *Relationship-building*: ICTs can be used to support long-term relationships with clients. E-Mail newsletters that inform clients about new products and services and keep them up-to-date with developments of the company are one of the most commonly used tools.

New sales channels

Contrary to many other sectors, ICTs offer only few opportunities for business services companies to open up new sales channels. The possibilities for selling online are strongly limited in this sector. The survey results show that only 10% of all companies in the sector sell products or services online and online sales only constitute a marginal fraction of overall sales. The most important barrier to a stronger online selling activity is that most goods and services in this sector do not lend themselves to selling online. Exceptions are:

- products that can be standardised and delivered in digital form such as research reports, statistical data or images (see box);
- services that can be standardised and ordered via the Internet such as on-line registration for exhibitions and conferences.

In addition, service companies can use the Internet as new sales channel by offering their services on expert or service provider marketplaces or online directories. As described in section 2.1.1, making use of online requests for proposals or calls for tenders opens up additional opportunities to business services companies.

Fotofinder.net – E-business for photographers

Fotofinder.net is putting photographers' and photo agencies' pictures online. Fotofinder.net is a digital research and sales platform to facilitate the demand and supply of professional photography. It offers at fixed prices a comprehensive array of services covering all aspects of photo-marketing from archiving and presentation to the search engine, photo-download and invoicing, all irrespective of any royalties for the end use of pictures. Copyright remains with the producer of the work, with no extra credits to be included in the byline of published photos.

With fotofinder.net numerous independent photo-suppliers are united at one address in a digital marketplace. The establishment of a large and varied digital supply of pictures on the Internet is possible without each individual photographer or agency needing to fund its own hardware, software and technical support.

Source: www.fotofinder.net

New products and services

By contrast, the opportunities for companies in this sector to offer new products and services to their clients by using ICTs and e-business applications are more diverse. ICTs have enabled business services companies to offer

- new services with higher value to their customers and/or
- more standardised services at lower cost.

Public opinion polling companies, for example, have developed Internet-surveys as a new service to their clients. Security firms have created online video surveillance systems, which offer clients a significantly higher quality of service. Companies from the exhibition and conference sector are offering a large set of online services in addition to their offline business such as online directories, the download of conference material, virtual exhibitions etc. Another example how the Internet allows services companies to offer additional value to their clients is shown in the box below.

CAD-Objects AG: Internet-based product database

CAD-Objects AG develops specialised solutions for building-product manufacturers, architects, asset owners and facility managers. The company offers an integrated, Internet-based design, build, and manage solution using a special object approach. Two integrated solutions, the Object-Management-System and the Project-Management-Center, make it possible to administer building products easily and cost-effectively, right from the initial design phase of a building.

The products are based on digitised building components that can be inserted into any CAD plan, at which point a dynamic link is created to a product database containing all product related information. From then on, this product related data could be accessed throughout the entire lifecycle of the asset, which greatly reduces overall design, construction and management costs.

Source: www.cad-objects.com

These new services are not only intended to increase profitability by lowering costs and rising the product value and thus prices. They can also serve as tool to intensify customer relationships by tying the customer more closely to the services company. Particularly for those companies focused on ad-hoc services, such a strategy can help to make the income stream steadier and more predictable and thereby reduce risk. It also reduces the costs of customer acquisition, as it is typically easier to sell new services to existing customers than win new ones.

In addition, service companies are increasingly able to transform services into products that can be delivered in digital form. Management consultant companies, for example, in addition to offering individual consulting, can make their knowledge available in standardised market research reports that can be delivered online. Photographers can offer their products in searchable image databases and deliver the photos at low cost and high speed in digital form to their clients, as well as taking individual orders.

The possibility of transforming services into digitally deliverable products also increases the potential for sell-side e-commerce activities in the business services sector. A part of those services that formerly could not be traded online might be transformed into digital products appropriate for e-commerce.

2.1.4 Marketing

ICTs and e-business applications have considerably changed the way companies in this sector can market services to their clients. Company websites have become a central element in the overall marketing strategy of business services companies of all sizes. In their simplest form websites are online brochures, which provide information on the company. More sophisticated websites offer interactivity to the viewer, e.g. allow for searching archives, downloading documents, ordering services and requesting further information. Traffic to the website can be generated by listing the company in online directories and search engines, by using e-mail marketing, newsletters or by making use of other forms of online advertising. If done right, such measures can significantly enhance the efficiency of brand building.

In face of intensive competition, brand and reputation building is the most important marketing challenge for business services companies (see also section 1.3.1). Providing work samples, case studies and research publications to a large audience over the Internet can significantly help build the brand and reduce trust problems of new customers. These can be provided on the company's website as well as on competence-sites or information portals.

Marketing on the Internet offers companies the possibility of reaching global audiences of a magnitude that has not been possible over conventional channels. Websites are, particularly for

small companies, a low-cost opportunity to reach a much greater audience and extend their markets. They can overcome disadvantages of size by presenting and focusing on experience and capabilities without having to reveal their size ("on the Internet nobody knows that you're a dog"). Greater reach permits small companies to specialise in niche services to a much higher degree than has previously been possible.

WIVA Company, Ingenieurbüro Winkler – small companies extending their reach over the Internet

The following are examples of how small companies from different sub-sectors of the business services sector extended their reach and increased sales over the Internet.

WIVA Company is a small German service provider for mass mailings. Since the year 2000 the company offers information on its in-house-produced web-site. Clients can access information on the services offered, general information on mass mailings and can fill a Web-form to request further information. All contact data is stored in a database, which is used for future marketing activities of WIVA. Most clients access the website via search engines. Within the first year 140 prospects from all over Germany requested further information over the website. Sales volume increased by 15% due to the Internet site.

Ingenieurbüro Winkler is a small engineering company offering specialised services such as operating instructions, electronic documentaries and specialised software. The company realised that cross-regional marketing activities were needed to win a sufficient amount of orders to make specialisation a profitable strategy. A website was produced in-house that provides information on the company's services and offers the possibility to download demo-versions of special software. The share of orders generated through Internet marketing is reported to be at 40%.

Source: www.bmwi-netzwerk-ec.de

The use of ICT tools for marketing purposes in some business services sub-sectors is, however, limited by government regulations. In Germany, for example, advertising for legal advisors and other publicly certified service providers is strongly regulated.

2.2 Diffusion of ICT and e-business

The following section discusses the diffusion of ICT and e-business in the business services sector. Based on *selected* survey results it first gives empirical evidence to the qualitative findings of section 2.1.[4] A more complete set of data, which compares important indicators across all sectors, is provided in the scoreboard annex to this quarterly report.

In this section we focus on the specifics of the business services sector (as compared to EU averages) and on differences between smaller and larger companies within the sector. A number of methodological limitations have to be kept in mind in this analysis:

- Complete data sets are only available for EU-4 (Germany, France, Italy, UK), sector averages are therefore based on EU-4 data. To give an indication about regional differences, a number of cross-country comparisons is provided for use-oriented e-business indicators. These serve as a background for the more detailed comparison across size classes and with the average of all sectors conducted in this section.

[4] A full analysis of the *e-Business W@tch* survey including sector comparisons will follow in a later report.

- The composition of enterprises is different in different size classes. For instance, those sub-sectors where enterprises are typically very small have a larger weight in size class 0-24 employees than in size class 250+ employees.
- Data is available in employment-weighted and enterprise-weighted form. While enterprise-weighted data is somewhat biased towards small firms, it gives a more precise picture about what enterprises regard as important. Employment-weighted data is biased towards large firms, but is preferable if employee-oriented indicators are analysed. In the following analysis, employment-weighted values are used in sections 2.2.1 - 2.2.2, and company-weighted values in sections 2.2.2 - 2.2.6.

2.2.1 Infrastructure

Large parts of the business services sector are based on gathering, compiling and distributing information. The efficiency of such processes can be enhanced considerably through the use of computers. As a consequence one would expect relatively high computer and Internet use rates in the sector.

Indeed the numbers in table 2.1 show above-average percentages for computer use, Internet access, e-mail and WWW use, which are the main basic technologies for accessing and exchanging information. Especially large is the head start of business services in WWW use compared to other sectors. One explanation is that much information that serves as input for business services is available on the WWW.

The availability of EDI networks and of Wide Area Networks (WANs) is below average. This outcome is to some extent explained by the small average size of business services enterprises, as these IT components are useful only for larger companies. An explanation for the comparatively low use rates of EDI is also that EDI networks are best suited to ordering and selling standardised products and services while business services are to a large extent individual.

Table 2-1: Availability of IT infrastructure

Available IT infrastructure	All sectors	Business services			
		All enterpr.	0-49 empl.	50-249 empl.	250+ empl.
Computers	97.0	99.1	98.3	100.0	100.0
Internet access	90.9	95.5	92.4	95.4	100.0
E-mail	87.4	93.4	92.1	95.4	94.6
WWW use	84.4	92.0	86.3	93.5	100.0
Intranet	51.0	50.9	36.4	54.6	71.1
Extranet	19.5	23.7	13.8	26.5	37.3
LAN	66.5	67.6	54.5	83.1	81.7
WAN	34.1	31.9	10.2	35.9	62.6
EDI	23.4	19.7	11.6	21.1	31.1

Note: employment-weighted, i.e. figures should be read as "enterprises comprising ...% of employees". Computation base: all enterprises. Regional coverage: EU-4.

Source: e-Business W@tch, Berlecon Research (2002)

Comparing the use rates of smaller and larger enterprises shows quite small differences in the use of general-purpose technologies such as e-mail or computers in general. As should be expected, the use rates are higher in large companies for those technologies that are more useful for large companies like WANs, which primarily connect different offices of regionally spread companies.

As table 2-2 shows, basic IT infrastructure is well developed in all countries, with Ireland even reaching values of 100% for the availability of computers, Internet access and e-mail. Stronger differences exist in the percentages for WWW use, which are comparatively low in Italy, and for intranets, which are lowest in Germany and the UK.

Table 2-2: Availability of IT infrastructure across countries

Available IT infrastructure	DK	D	F	IRL	I	NL	UK
Computers	98.1	100.0	100.0	100.0	100.0	98.6	96.3
Internet access	98.1	96.8	98.9	100.0	95.3	98.0	90.4
E-mail	97.2	92.1	98.1	100.0	95.3	97.4	90.4
WWW use	98.1	94.6	97.6	97.4	80.2	96.8	89.5
Intranet	57.5	43.6	63.1	55.4	61.4	59.5	46.4
Note: employment-weighted, i.e. figures should be read as "enterprises comprising ...% of employees". Computation base: all enterprises.							

Source: e-Business W@tch, Berlecon Research (2002)

Business services enterprises use by and large the same technologies as the average of all industries to connect to the Internet. However, analogue modems are slightly less popular and DSL connections are more widespread. This points to the use of the Internet by several employees within a company, as analogue modems are mostly used to connect single PCs to the Internet. (This is also shown by much higher percentages of analogue modems in small than in large companies.) It is also an evidence for a relatively modern ICT infrastructure, as powerful DSL connections have only recently become available.

Table 2-3: Type of Internet connection

Internet connection	All sectors	Business services			
		All enterpr.	0-49 empl.	50-249 empl.	250+ empl.
Analogue modem	19.0	16.8	23.2	13.9	9.1
ISDN	39.0	38.8	45.1	37.4	30.7
DSL	25.0	31.9	31.8	30.1	32.7
Other fixed	26.9	27.6	5.4	32.5	56.3
Other connection	2.9	3.3	2.3	4.8	4.1
Note: employment-weighted, i.e. figures should be read as "enterprises comprising ...% of employees". Computation base: enterprises with Internet access. Regional coverage: EU-4.					

Source: e-Business W@tch, Berlecon Research (2002)

A difference exists between small and large companies with respect to ISDN versus other fixed connections. While the former are more common in small establishments, the (typically powerful) latter are more often available in large companies. This observation is in accordance with results for the available bandwidth: as tables 2-3 and 2-4 show, the larger the company, the higher the probability that a powerful Internet connection is available.

Table 2-4: Internet connection speed

Connection speed	Business services			
	All enterpr.	0-49 empl.	50-249 empl.	250+ empl.
< 2 Mbit/s	60.4	70.2	62.0	46.4
2-10 Mbit/s	18.2	8.7	26.4	28.4
>10 Mbit/s	8.2	7.1	3.8	11.2
Note: employment-weighted, i.e. figures should be read as "enterprises comprising ...% of employees". Computation base: enterprises with Internet access. Regional coverage: EU-4.				

Source: e-Business W@tch, Berlecon Research (2002)

2.2.2 IT skills

Successful use of e-business and other ICT technologies requires not only availability of the appropriate technology in the company but also access of the majority of office workers to the technology and their capability to use it successfully. Table 2-5 confirms the results from table 2-1 that access to e-mail and the WWW is above average in the business services sector.

Table 2-5: Facilities available to majority of office workers

The majority of office workers has access to	All sectors	Business services			
		All enterpr.	0-49 empl.	50-249 empl.	250+ empl.
e-mail for internal communication	67.1	74.3	64.2	80.8	87.1
e-mail for external comm.	73.9	86.8	82.9	86.3	92.7
the WWW	63.3	75.4	76.4	80.2	72.3
the intranet	44.4	45.5	33.4	49.3	61.8
Note: employment-weighted, i.e. figures should be read as "enterprises comprising …% of employees". Computation base: all enterprises. Regional coverage: EU-4.					

Source: e-Business W@tch, Berlecon Research (2002)

However, there are differences between small and large enterprises, especially with respect to intranet access. Access to intranet is almost twice as prevalent in large than in small companies. This shows that many smaller companies do not have an internal network of connected computers that they consider to be an intranet. (Many understand the latter as describing internal websites. They would thus not consider a simple computer network sharing data to be an intranet.) E-mail for internal communication also plays a less important role in small companies. This can again be explained by small companies having only a few not connected computers. Such companies tend to have so-called “sneaker networks”, where data is transferred between computers by copying it to floppy disks and then walking to the other computer where it is copied to the hard disk.

The comparatively high IT use rates should imply that business services companies are aware of the need for training schemes to enable their employees to use the Internet as efficiently as possible. However, as table 2-6 shows, formal training schemes are not rated as very important by the majority of companies. Only 20% consider such training to be very important. Much more important (65%) is on-the-job learning. An explanation could be that the necessary IT skills are considered to be easy to acquire and/or the qualification of the employees is considered high enough to learn quickly.

Table 2-6: Importance of different training schemes for IT skills development

Training schemes rated as “very important”	Business services			
	All enterpr.	0-49 empl.	50-249 empl.	250+ empl.
On-the-job learning	65.1	64.0	57.4	69.4
Formal training schemes	20.0	19.2	18.9	21.7
Self-learning activities	35.2	42.2	38.1	23.9
Note: employment-weighted, i.e. figures should be read as "enterprises comprising ...% of employees". Computation base: all enterprises. Regional coverage: EU-4.				

Source: e-Business W@tch, Berlecon Research (2002)

Compared to other sectors, business services show relatively small differences between large and small companies regarding the importance of formal training. The only exception is self-learning, which is considered more important by small enterprises.

Table 2-7 shows the reality of IT skill development, i.e. the training schemes actually offered to employees. Most business services enterprises offer at least some form of support, although there is a difference between small and large companies. While only 5% of the latter offer no support, this percentage is much higher for small companies (23%). This difference can also be observed for in-house and for third party training. Both are more often offered by large enterprises.

Comparing the different training forms shows that training by third parties is more often offered than in-house training. This is due to the fact that many companies in this sector are small so that in-house training would not be economical. For large companies, both forms are of equal importance. A comparison of tables 2-6 and 2-7 leads to the conclusion that IT training is regarded as moderately important without major differences between small and large companies. In reality, however, larger companies offer more formal training than small companies do.

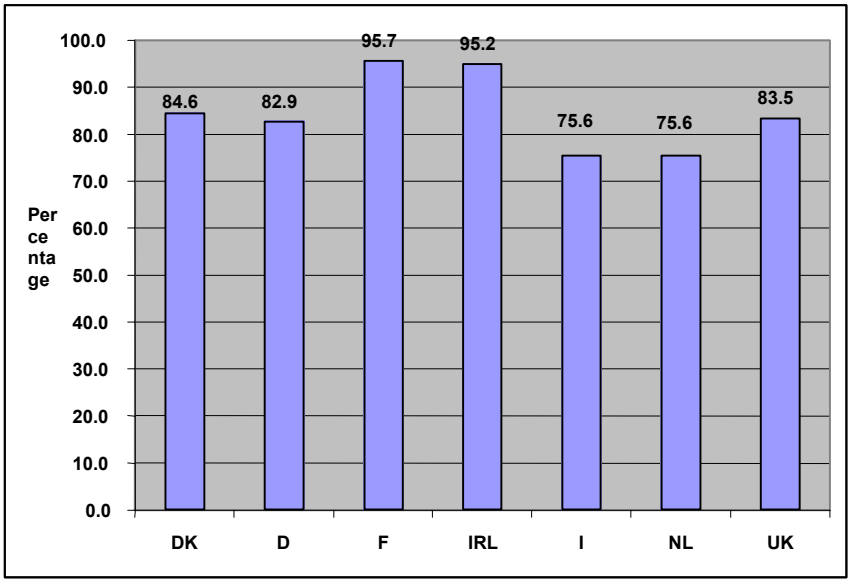
Table 2-7: IT training offered to employees

Form of training/support offered	Business services			
	All enterpr.	0-49 empl.	50-249 empl.	250+ empl.
Any support of IT and networking skills development	84.8	77.2	89.1	94.6
In-house computer / IT training	49.5	36.7	54.9	67.4
Computer / IT training by third parties	57.6	49.6	62.0	68.6
Use of working time for learning activities	69.4	67.0	78.8	69.6
Note: employment-weighted, i.e. figures should be read as "enterprises comprising ...% of employees". Computation base: all enterprises (excl. NA/DK). Regional coverage: EU-4.				

Source: e-Business W@tch, Berlecon Research (2002)

Business services companies in all countries for which data is available offer at least some support for the development of networking and IT skills, as figure 2-2 shows. Companies in France and Ireland are most supportive while one quarter of employees in Italy and the Netherlands are working in enterprises where they do not receive any support and have to acquire the necessary skills on their own.

Figure 2-2: Offerings of support for networking and IT skills development across countries



Source: e-Business W@tch, Berlecon Research (2002)

2.2.3 E-commerce for sales and procurement

Procurement

Tables 2-8 and 2-9 reveal a relatively strong use of e-procurement systems in the business services sector. The percentage of companies procuring online as well as the share of e-procurement in total procurement are both higher than average in this sector.

At first sight, this result seems astonishing, as most business services companies do not have large purchasing departments, where one would expect e-procurement first. However, there are two potential explanations:

Firstly, many inputs necessary for the provision of business services can easily be bought on the Internet. This applies, e.g., to office supplies, books, database content, research, photo supplies, etc. As many companies in this sector are small, buying manually via websites is more appropriate than implementing large and complicated e-procurement solutions.

Table 2-8: Buy-side e-commerce activity

Activity	All sectors	Business services			
		All enterpr.	0-49 empl.	50-249 empl.	250+ empl.
Currently procuring online	36.0	46.8	46.8	54.1	46.2
… > 2 years	42.3	47.8	47.8	55.1	19.1
… 1-2 years	40.1	37.5	37.5	38.8	56.5
… < 1 year	15.4	12.5	12.5	6.1	23.4
Plan to procure online	6.7	7.2	7.3	2.9	4.0
Note: enterprise-weighted, i.e. figures should be read as "% of enterprises …". Computation base: all enterprises for the first and last row, enterprises procuring online (incl. NA/DK) for lines 2-4. Regional coverage: EU-4.					

Source: e-Business W@tch, Berlecon Research (2002)

Table 2-9: Share of online purchases in total purchases

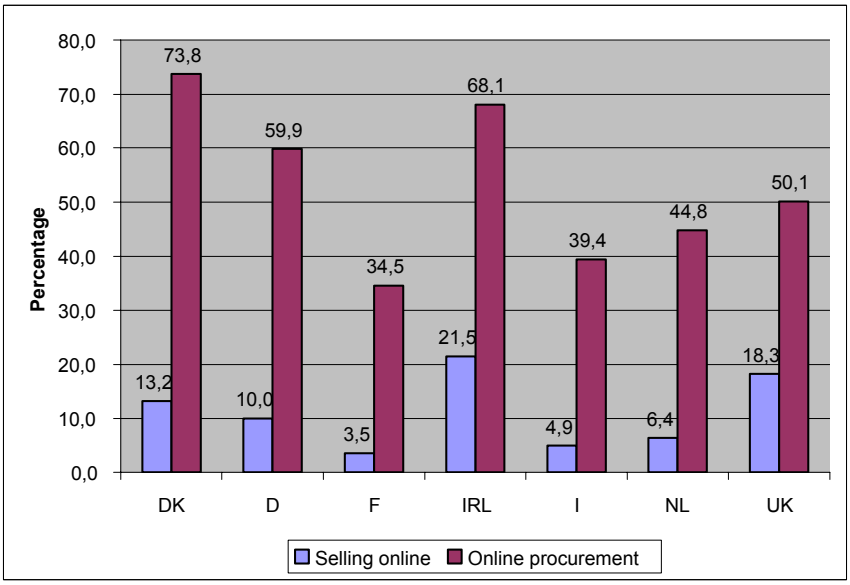
Share in all purchases	All sectors	Business services			
		All enterpr.	0-49 empl.	50-249 empl.	250+ empl.
> 50%	9.4	15.1	15.2	4.1	0.0
26 to 50%	9.9	8.6	8.6	11.0	4.5
11 to 25%	19.3	23.6	23.6	20.6	34.2
5 to 10%	24.8	17.9	17.8	23.5	15.6
< 5%	36.5	34.8	34.8	40.7	45.6
Note: enterprise-weighted, i.e. figures should be read as "% of enterprises with…". Computation base: enterprises procuring online. Regional coverage: EU-4.					

Source: e-Business W@tch, Berlecon Research (2002)

Secondly, the term e-procurement can be interpreted in a rather broad way. Booking flights or hotels on the Internet can be subsumed under e-procurement as well as ordering a new computer or accessing a database with content to be paid for. Paid content is an example of an input of higher importance for business services, especially for the knowledge-based ones, than for many other sectors. This might to some extent explain the high e-procurement rates.

The differences between small and larger companies are relatively small, although these results have to be interpreted with care due to few observations of large companies. In fact, table 2-9 shows that for those companies procuring online, the importance of this is higher in small companies than in large ones.

Figure 2-3: Current online procurement and sales across countries



Source: e-Business W@tch, Berlecon Research (2002)

The fraction of business services enterprises that already buy or sell online differs considerably across the seven EU member countries for which data is available. As figure 2-3 shows, especially Danish and Irish enterprises are familiar with online procurement. Both countries also show high rates of online sales, which points to some correlation between both activities. Also those countries showing the lowest rates of current online procurement activity (France and Italy) have the lowest rates of online selling.

Table 2-10: Type of goods purchased online

Type of goods purchased online	Business services			
	All enterpr.	0-49 empl.	50-249 empl.	250+ empl.
MRO goods	69.4	69.4	63.9	78.1
Direct production goods	46.1	46.2	41.0	44.4
Note: enterprise-weighted, i.e. figures should be read as "% of enterprises …". Computation base: enterprises procuring online. Regional coverage: EU-4.				

Source: e-Business W@tch, Berlecon Research (2002)

While buying of MRO goods is more important than buying direct production inputs, the fraction of those establishments procuring direct inputs is not negligible. Almost half of the business services companies buy direct inputs online, which might be explained to some extent by digital goods being inputs for knowledge production and also to some extent by difficulties in distinguishing between direct inputs and MRO products, especially in the professional services sector.

Table 2-11: Type of goods purchased online across countries

Type of goods purchased online	DK	D	F	IRL	I	NL	UK
MRO goods	71.1	66.9	71.1	63.0	79.0	48.2	63.3
Direct production goods	46.6	55.4	56.7	43.0	45.8	45.0	33.4
Note: enterprise-weighted, i.e. figures should be read as "% of enterprises …". Computation base: enterprises procuring online.							

Source: e-Business W@tch, Berlecon Research (2002)

The gap between the rates for procurement of MRO goods and direct production goods can be observed across all countries (cf. table 2-11). While it is especially low in the Netherlands (due to comparatively low online MRO goods procurement), the gaps are large in Demark, Italy, and the UK.

Selling online

In contrast to e-procurement, selling online is less frequent in the business services sector than it is on average. However, the plans of establishing online sales channels are such that this gap will narrow if the plans materialise. Also the importance of online sales for those using this channel is below average. For 59% selling online is responsible for less than 5% of total sales. Over all industries this percentage is only 46%.

Table 2-12: Sell-side e-commerce activity

Activity	All sectors	Business services			
		All enterpr.	0-49 empl.	50-249 empl.	250+ empl.
Currently sell online	12.3	9.9	9.9	12.0	16.6
… > 2 years	41.6	35.0	35.0	39.2	27.8
… 1-2 years	35.9	28.7	28.4	45.4	72.2
… < 1 year	20.1	32.3	32.5	15.4	0.0
Plan to sell online	8.9	10.3	10.3	10.2	3.5
Note: enterprise-weighted, i.e. figures should be read as "% of enterprises …". Computation base: all enterprises for the first and last row, enterprises selling online (incl. NA/DK) for lines 2-4. Regional coverage: EU-4.					

Source: e-Business W@tch, Berlecon Research (2002)

Table 2-13: Share of online sales in total sales

Share in turnover	All sectors	Business services			
		All enterpr.	0-49 empl.	50-249 empl.	250+ empl.
> 50%	8.7	5.7	5.5	25.0	0.0
26 to 50%	9.6	0.2	0.0	12.3	13.3
11 to 25%	10.5	9.1	9.2	6.2	0.0
5 to 10%	25.6	26.0	26.1	22.1	10.4
< 5%	45.6	59.0	59.2	34.3	76.3
Note: enterprise-weighted, i.e. figures should be read as "% of enterprises with…". Computation base: enterprises selling online. Regional coverage: EU-4.					

Source: e-Business W@tch, Berlecon Research (2002)

Of those companies selling online, many have only recently started to do so. Almost a third has been selling online for less than a year, while this fraction is only 20% for the average of all industries within the EU-4.

As the survey results show further, large companies are more prone to online selling than small companies, and online sales are also more important for those large companies that do sell online than for small ones.[5] High set-up costs of e-sales solutions might have played a role for this outcome as well as structural differences between the size classes. Also larger business services companies might be better at offering standardised services that are more appropriate for online selling than individual services.

[5] Due to few observations only the groups <50 and 50-249 can be compared reliably.

2.2.4 Barriers to e-commerce

Procurement

Table 2-14: Barriers to online procurement

Completely agreeing to statement	All sectors	Business services			
		All enterpr.	0-49 empl.	50-249 empl.	250+ empl.
Requires face-to-face interaction	37.7	31.0	31.0	32.4	34.1
Suppliers do not sell online	31.6	26.3	26.3	25.1	30.7
Concerns about data protection and security issues	30.7	25.1	25.1	22.7	35.2
Technology is expensive	23.6	18.6	18.7	14.5	13.4
Suppliers' technical systems are not compatible	12.7	7.9	7.9	5.1	14.6
Cost advantage is insignificant	21.9	17.4	17.3	20.7	26.6
Note: enterprise-weighted, i.e. figures should be read as "% of enterprises …". Computation base: all enterprises. Regional coverage: EU-4.					

Source: e-Business W@tch, Berlecon Research (2002)

In accordance with the above results for the importance of online procurement, potential barriers for online procurement are generally considered less important by business services companies than by the average EU-4 company.

Selling online

Despite standardisation efforts, business services are still to a large extent individual activities. This might explain why online sales are less important in this sector than they are on average. Accordingly, the main barrier “goods/services do not lend themselves to online sales” is more often considered as very important than on average. In fact, this barrier to online sales is even more pronounced in large companies. This may be due to different service offerings in the size classes. Large professional service companies, for example, often conduct complex large-scale projects, which are sold through personal contacts.

All other barriers are considered less important than on average. This implies that it is mostly the (perceived) unsuitability of business services for online sales that is responsible for the comparatively low use of this distribution channel.

Barriers with especially low importance for business services compared to the average are the adaptation of business culture to e-commerce, the expensiveness of technology and the number of customers on-line. This points to a considerable potential for online sales in this sector, once products and services are created that are more suitable for online-selling. The potential transformation of conventional services into digital products and services that can be traded online is a very specific characteristic of the business services sector (physical products produced by other sectors usually cannot be digitised).

Table 2-15: Barriers to selling online

Completely agreeing to statement	All sectors	Business services			
		All enterpr.	0-49 empl.	50-249 empl.	250+ empl.
Few customers online	20.0	16.9	17.0	9.5	13.5
Customers hesitant to buy online	30.7	29.6	29.6	24.3	26.3
Goods / services do not lend themselves to selling online	47.4	51.3	51.2	61.1	65.2
Processing of payments for online orders is a problem	21.8	20.8	20.8	17.5	11.2
Technology too expensive	20.5	17.5	17.5	15.6	20.3
Revenue of online sales is still low	33.6	32.0	32.0	30.9	39.3
Delivery process causes problems	15.4	14.1	14.1	9.8	11.3
Adapting corporate culture to e-commerce is difficult	23.9	20.6	20.6	27.3	22.7
Note: enterprise-weighted, i.e. figures should be read as "% of enterprises …". Computation base: all enterprises. Regional coverage: EU-4.					

Source: e-Business W@tch, Berlecon Research (2002)

2.2.5 E-Business indicators

As pointed out above, collaboration is a very important element in producing business services, which should lead to a relatively high use of tools supporting this activity. Indeed, online technologies for sharing documents and performing collaborative work are much more frequently used in business services than on average. As table 2-16 further shows, these tools are more often used in large than in small business services companies. This outcome is in accordance with the fact that large companies conduct larger projects where IT support can be useful.

The head start of business services is not confined to collaboration tools, though. Employee-focused e-business activities such as automating travel reimbursements, tracking working hours or e-learning are also more widespread in business services than on average.

The use of sophisticated e-business systems such as CRM or SCM systems in business services is below average, especially in smaller companies. The gap is especially large for supply chain management systems that are mainly concerned with optimising (physical) input flow for larger supply chains – not an issue in this sector.

Knowledge management solutions, application service providers and ERP systems are more frequently used in business services than on average. While the extensive use of knowledge management systems can be explained by the importance of knowledge for large parts of this sector, the surprisingly high use of ASP solutions might be due to the suitability of web-based groupware and collaboration applications to the needs of business services workers and to the IT equipment available to them.

Table 2-16: Use of online technologies

Online technologies used	All sectors	Business services			
		All enterpr.	0-49 empl.	50-249 empl.	250+ empl.
To share documents/ to perform collaborative work	28.0	42.1	42.0	52.0	57.9
To automate travel reimbursement of employees	3.9	5.2	5.2	13.4	18.4
To track working hours and production time	9.7	15.7	15.5	30.9	50.9
To support HR management	8.4	13.1	13.0	24.4	37.8
For e-learning	12.3	16.9	16.9	13.5	25.3
Posting job vacancies		14.5	14.3	35.6	50.1
Note: enterprise-weighted, i.e. figures should be read as "% of enterprises with…". Computation base: all enterprises. Regional coverage: EU-4.					

Source: e-Business W@tch, Berlecon Research (2002)

Table 2-17: Use of specific IT systems and solutions

IT system solution	All sectors	Business services			
		All enterpr.	0-49 empl.	50-249 empl.	250+ empl.
SCM	1.5	0.5	0.5	1.4	8.7
CRM	6.6	6.4	6.2	13.5	34.7
Knowledge management	5.2	6.8	6.8	9.1	23.5
ASP	6.6	11.0	11.0	18.2	23.0
ERP	6.6	8.7	8.6	13.2	21.1
Note: enterprise-weighted, i.e. figures should be read as "% of enterprises with…". Computation base: all enterprises. Regional coverage: EU-4.					

Source: e-Business W@tch, Berlecon Research (2002)

Table 2-18: Use of specific IT systems and solutions across countries

IT system solution	DK	D	F	IRL	I	NL	UK
SCM	1.7	0.0	0.0	2.0	0.0	0.2	1.7
CRM	10.1	5.3	0.1	23.3	8.2	5.1	8.4
Knowledge management	8.3	5.1	3.3	15.5	11.5	3.3	5.1
ASP	13.4	2.0	6.8	21.6	18.1	9.4	13.3
ERP	10.1	3.5	11.6	3.9	16.4	3.3	3.4
Note: enterprise-weighted, i.e. figures should be read as "% of enterprises with…". Computation base: all enterprises. Regional coverage: EU-4.							

Source: e-Business W@tch, Berlecon Research (2002)

Clearly all systems are of much greater importance for large than for small companies, since they are often rather complex solutions that are of specific value in large companies and can help to achieve economies of scale. Especially large is the difference for CRM systems. This points to a potential problem for SMEs. If large companies continue to cultivate their customer relationships more systematically than small companies, they might win customers from the latter.

As table 2-18 shows, there are considerable differences in the availability of specific e-business systems across member countries. All systems except ERP can be found most often in Irish business services companies and least in German and French establishments.

The information about the use of online technologies within the value chain confirms the abovementioned importance of online collaboration as well as of sharing and exchanging documents with suppliers and customers.

Less important for business services companies are online technologies for managing inventories, which are to a much smaller extent applicable to a services sector than to sectors producing or handling physical goods. The same is true for online collaboration to forecast demand, which is most important for industries keeping a stock of produced goods.

Small companies are more frequently using informal technologies to conduct e-business than large ones. This is shown by the higher percentages of small establishments exchanging documents and negotiating online.

Table 2-19: Use of online technologies within the value chain

Value chain activities	All sectors	Business services			
		All enterpr.	0-49 empl.	50-249 empl.	250+ empl.
Online collaboration with business partners for designing products	12.7	16.0	15.9	24.4	19.9
Online collaborating with business partners to forecast product demands	10.3	9.4	9.3	17.1	12.3
Online management of capacity / inventory	8.9	7.0	7.0	8.0	23.2
Electronic exchange of documents with suppliers	42.0	51.0	51.1	45.5	36.8
Electronic exchange of documents with customers	39.3	57.8	57.8	57.6	51.0
Online negotiation of contracts	16.0	15.9	15.9	18.2	8.9
Note: enterprise-weighted, i.e. figures should be read as "% of enterprises with…". Computation base: enterprises with Internet access. Regional coverage: EU-4.					

Source: e-Business W@tch, Berlecon Research (2002)

2.2.6 Impact of e-business

E-business can have an impact on several elements of business. This section discusses the impact of e-business on the organisation of enterprises as well as the impacts of online procurement and online sales.

Organisation

The overall impact of e-business on the enterprises' organisation differs only slightly between the business services sector and the average of all industries within the EU-4. Slightly stronger than average are the effects on internal work processes as well as on the relationships with suppliers and customers. This result is not surprising taking into account the importance of collaboration for the sector as well as the impact of ICT and the Internet on collaboration.

According to table 2-20, small enterprises consider the impact on supplier and customer relationships to be stronger. Most likely e-business has offered new opportunities for SMEs to buy and sell on short notice, whereas many contracts of large companies continue to be negotiated face-to-face.

Table 2-20: Impact of e-business on organisation

E-business has significantly …	All sectors	Business services			
		All enterpr.	0-49 empl.	50-249 empl.	250+ empl.
changed the organisational structure	6.1	5.1	5.1	4.0	6.7
changed internal work processes	9.7	11.0	11.0	9.9	12.6
changed customer relationships	8.0	8.9	8.9	6.9	6.2
changed the relationship to suppliers	6.8	8.6	8.6	7.3	6.2
changed the offer of products/services	7.4	7.1	7.1	3.6	7.7
Note: enterprise-weighted, i.e. figures should be read as "% of enterprises reporting that…". Computation base: all enterprises. Regional coverage: EU-4.					

Source: e-Business W@tch, Berlecon Research (2002)

Procurement

The major impact of e-business on procurement is a greater variety of potential suppliers to choose from. In addition, online procurement had positive impacts on the efficiency of internal business processes and on procurement costs. The positive impacts have been stronger for business services than for the average of companies.

Less important are impacts on supplier relationships as well as on logistics and inventory costs. The latter can be explained by the digital and service nature of many inputs and by inventory costs not playing a large role in the sector.

Table 2-21: Impact of online procurement

Very positive impact on	All sectors	Business services			
		All enterpr.	0-49 empl.	50-249 empl.	250+ empl.
Procurement costs	12.5	13.4	13.4	10.5	21.6
Supplier relationship	11.4	6.6	6.6	8.9	14.6
Efficiency of internal business process	16.6	17.6	17.6	12.2	16.8
Logistics and inventory costs	12.2	10.2	10.3	6.4	22.5
Number of suppliers	24.4	29.4	29.5	13.2	20.9
Note: enterprise-weighted, i.e. figures should be read as "% of enterprises reporting…". Computation base: enterprises procuring online (excl. DK/NA). Regional coverage: EU-4. Percentage for number of suppliers denotes those stating an increase.					

Source: e-Business W@tch, Berlecon Research (2002)

Selling online

Selling online also has several positive impacts on the business services companies. The main positive impact is improved customer care. 40% indicate this as opposed to only 28% on average. The volume of sales and the efficiency of internal business processes are slightly more positively influenced than on average as well.

Most other effects are by and large in line with the average. An exception is the impact on the sales area, which has been considered very positive by a smaller fraction of companies than on average. This is most likely due to the service character of this sector's output. While there are tendencies to internationalisation of services, many business service activities (e.g. security or legal services) are nevertheless tied to the service providers' base-region.

Table 2-22: Impact of selling online

Very positive impact on	All sectors	Business services			
		All enterpr.	0-49 empl.	50-249 empl.	250+ empl.
Volume of sales	19.8	23.8	23.7	17.9	53.1
Number of customers	18.0	18.1	18.1	6.1	34.8
Sales area	22.2	20.5	20.6	12.2	34.8
Customer care	27.9	39.8	40.0	9.0	53.1
Efficiency of internal business processes	20.9	22.6	22.6	13.9	38.2
Logistics and inventory costs	16.7	16.0	16.0	11.9	44.2
Note: enterprise-weighted, i.e. figures should be read as "% of enterprises reporting …". Computation base: enterprises selling online (excl. DK/NA). Regional coverage: EU-4. Percentage for number of customers denotes those stating an increase.					

Source: e-Business W@tch, Berlecon Research (2002)

3 Summary and conclusions

3.1 Summary of main findings

This sector report has analysed the use of ICT and e-business in the business services sector, which comprises many very dissimilar service activities. Some services in this sector are very individual and offered on a project basis (e.g. business consulting, architectural planning), others are standardised and provided on an ad-hoc basis (e.g. temporary labour or direct mailings) and a third group of services is offered on a standardised and continuous basis (e.g. office cleaning or bookkeeping).

The turnover of the business services sector in the European Union (excluding Greece, Ireland and the Netherlands) reached over 863 billion Euro in 1999. Over half of the total turnover and value added was generated in knowledge-intensive sub-sectors (NACE 74.1, 74.2 and 74.3), characterised by high intensity of value creation. The business services sector is characterised by a strong dominance of small enterprises with less than 50 employees. They make up 99% of all enterprises, produce 60% of the sector's turnover and employ more than half of the people working in the sector.

Companies in the business services sector currently face a large number of challenges. They have to respond to constantly changing customer needs, they have to cope with intensive competition and financing issues, deal with problems related to the availability and cost of staff and adapt to rising sub-sector interdependence. In addition, short-run issues such as the current economic slowdown and the end of the e-business boom have to be managed. And finally, business strategies have to be adjusted to long-term developments such as the increasing internationalisation and complexity of projects as well as the strengthening trend towards outsourcing. Many of these challenges are potentially easier to cope with through the use of ICTs and e-business applications.

Firstly, on the procurement side the Internet considerably improves efficiency and reduces the cost of obtaining major direct inputs of knowledge-intensive business services such as information and human capital. In addition, the Internet and e-business applications can be used to enhance the procurement of standardised products such as MRO goods and industry-specific inputs. Secondly, ICTs and e-business applications are increasingly being used for streamlining the business processes related to the management and delivery of business services. Key business processes include order and opportunity management, resource management, project management, document and knowledge management, billing and accounting as well as the management of third party relationships. Thirdly, new technologies play an important role in improving customer service and managing customer relationships, they provide new sales channels and have enabled companies to offer new products and services to their clients. And finally, the Internet has considerably changed the way companies in this sector can market services to their clients. It offers them the possibility of reaching a very large global audience at low cost.

Results from the *e-Business W@tch* survey show that the most important use of new technologies in this sector is for accessing and exchanging information: The WWW is used more intensively than in other sectors and online technologies are used more often for exchanging documents with suppliers and customers and to perform collaborative work. Buy-side e-commerce activities are also strongly developed in the business services sector: the percentage of companies procuring online as well as the share of e-procurement in total procurement are both higher than on average. Conversely, sell-side e-commerce activities are comparatively weak, mainly because companies believe that their goods and services do not lend themselves to selling online.

3.2 Economic implications

As Internet and e-business applications are primarily used to exchange and process information, their availability has considerable implications for those parts of the business services sector that are based on information and knowledge. The economic implications first relate to individual companies, which subsequently influence the structure of the industry.

3.2.1 Implications for individual enterprises

Easier access to information

ICTs and the Internet considerably facilitate the search for and access to information. Websites of enterprises and public institutions as well as specialised services or databases put any sort of information at the fingertips of connected knowledge workers. This applies to information necessary for producing the services (e.g. legal documents, research) as well as to new business opportunities (e.g. through tender databases). Before the Internet existed, this information had to be collected expensively (e.g. in libraries or archives) or was only available to larger companies that could distribute the costs of using expensive databases over many projects and workers.

Thus, the barriers to market entry are lower now than they used to be, as the minimum size necessary to produce high-quality services is lower than it used to be. For individual workers (freelancers) and small companies in particular this makes establishing and growing a business easier.

For the business services incumbents, the easier access to information also poses some challenges. First of all, it facilitates the access to information for potential clients, which might lead them to abstain from using the services provided by others. And secondly, the competitive advantages of having access to information decrease. To compensate for this loss, business services companies have to restructure from knowledge owners to companies that primarily apply the knowledge to the need of their clients.

Easier distribution of information and brand building

Not only is access to information facilitated by electronic networks, but also the distribution of information. This has two consequences: First of all, it favours specialisation by providing specialists with a larger market. A specialist can use the Internet and specific e-marketing instruments at much lower cost than traditional marketing instruments to make his/her services known to the world. In particular, those services that do not differ much across countries (e.g. e-business related consulting services) and that do not necessarily require permanent local presence can profit.

Closely related is the second consequence: the increasing importance of brands as well as the lower costs of brand-building. Brands become more important, as lower barriers to market entry and the potential to increase one's (regional) market leads to a higher number of companies on the market. Building a brand (typically based on reputation for good work in the business services sector) becomes easier, as samples of work can easily be provided to a large audience via the website, newsletters and Internet publications. This potential can be realised at much lower cost than with traditional media.

Better opportunities for co-operation

As the costs of exchanging documents and information fall and at the same time software and tools become available to manage larger and more distributed projects and relationships, the costs associated with cooperating with others decrease relative to the costs for keeping all potentially useful knowledge in-house. Thus, co-operation between business services companies should be seen more often. As the survey results have shown, even "low-tech" e-business tools such as document exchange by e-mail are used by a high percentage of companies to support such business relationships.

However, it is not entirely clear yet, which type of enterprise benefits most from these opportunities. On the one hand, co-operation offers chances for small companies to become part of larger, more challenging and thus typically better paid service activities. On the other hand, IT systems to support co-operation – e.g. sophisticated knowledge management or project management solutions – are still expensive and difficult to implement, which makes them more suitable to large companies. Also better and cheaper information flow alone is not sufficient for successful co-operation. Such activities require specific management skills that can typically be acquired faster and more systematically by large, rather than small, companies.

Increasing standardisation and transformation of services in products

E-business tools used internally, e.g. for document management or project management, can help to streamline those components of business services that can be standardised. A standardisation of recurring business processes (e.g. standardised procedures for consulting projects or for conducting field-work in a market research company) make costs and quality of the resulting services more predictable and help find inefficiencies in the production process. This can be done in traditionally standardised services (cleaning, security, book-keeping), as well as in the knowledge-intensive part of the business services sector. While creating competitive advantages for companies good at standardisation in the short run, it should decrease the price level of these services in long run.

The transformation of a service into a product takes e-business one step further. For example, consultancies can make those elements of their knowledge available in printed or electronic form that is of interest to a larger group of potential customers. Photographers who provide digital photos on their websites or within image banks constitute another example. This transformation also influences the production process, as the enterprises now have to produce first and sell afterwards, whereas it is the other way round for traditional services. Such standardised products put further pressure on prices for standardised knowledge and should thus benefit the customers.

The possibility of transforming services into digitally deliverable products also increases the potential for sell-side e-commerce activities in the business services sector. A part of those services that formerly could not be traded online might be transformed into digital products appropriate for e-commerce.

Change of services provided

In many sub-sectors of business services, the services provided change by being provided digitally or by having digital components added to them. Security services can enhance their personal observation with additional permanent video surveillance and thus provide a higher service value. Architects and designers no longer merely supply the design of something but also the CAD object that can be used directly for production or other purposes. Photographers no longer provide images that have to be scanned and digitised but rather digital images that can directly go into production. Such changes in the nature of the service provided either imply cost savings for the service companies' customers or lead to a higher value of the service.

3.2.2 Implications for the industry

The implications of e-business and Internet for the industry itself as well as for the industry structure follow directly from the implications for individual companies.

Increasing competition

The lower barriers to entry resulting from better access to information, the fall in minimum size required for operating successfully, and also the tendency towards regional, possibly international, expansion, are all factors that should lead to an increase in competition in business services. Ceteris paribus, customers can thus expect lower prices and a better service quality. As

the knowledge-intensive industries in particular are influenced by the lower costs for information, the effects should be strongest in this sub-sector.

Counteracting this price decreasing effect should be the rise in importance of brands, which enable companies to charge higher prices.

Greater specialisation and co-operation

Specialisation has become more of an option, especially for professional services companies, as several disadvantages of specialisation have been diminished by the availability of the Internet and e-business tools. Particularly if services can be delivered in electronic form, enterprises can offer their services on a worldwide scale, making even very focused specialisation still profitable. Also the decrease in costs for co-operation allows even very small and specialised companies to work together with others on larger projects.

Thus, there is a tendency for an increase in the division of labour in this sector, and therefore also for an increase in mutual dependencies between companies, just as it already exists in sub-sectors such as advertising. Therefore co-competition of companies – working together on some projects while competing for others – should become more prevalent.

Changes in the industry size structure

Despite several factors benefiting small companies in business services, there are also several technology-induced factors favouring larger entities. Standardisation of services, transforming services into products and building brands are all activities that create to some extent economies of scale. These make operation as a larger entity more profitable.

At the same time, e-business solutions such as knowledge or project management systems help to decrease the disadvantages that large companies have especially in the knowledge-intensive business services. These forces together can lead to an increasing creation of large enterprises in the sector. As several factors also favour small entities the outcome might be a polarisation with many small companies, some large ones and only very few companies covering the middle range. As the economies of scale are not as strong as in other sectors, though, this effect should be comparatively weak.

3.3 Policy issues

The economic implications for individual enterprises in this sector as well as those for the entire industry lead to several policy implications. Three policy areas are listed below that require specific care and potentially appropriate policy measures.

Legal framework for industries not always compatible with use of e-business

Several uses of the Internet and e-business that are useful from the business point of view of single companies are influenced by industry regulations. As some industries (e.g. legal services) have to obey a variety of industry-specific regulations (e.g. concerning advertising), not all uses of e-business and Internet (e.g. for marketing purposes) are possible that are allowed for other industries. These regulations might keep the industry from taking full advantage of ICT and e-business and from employing new technologies that can be beneficial to enterprises and customers alike. Whether the benefits of these regulations outweigh the costs of obstructing new ways of doing business should be constantly monitored.

Internationalisation requires reduction of trade barriers

Specialisation and extending one's market internationally is only possible for those business services for which no trade barriers exist. These can, e.g., take the form of national regulations for offering certain services or of the requirement to establish a physical presence. Such barriers

to trade should be continuously monitored to assess whether their benefits outweigh the costs of obstructing the internationalisation of business services.

Governments can serve as a role model for public tendering

The decrease in the costs of information dissemination and information gathering increases market transparency and thus allows a better match between supplier and buyer. This also applies to knowledge-intensive services such as consulting or advertising. However, the potential gains from distributing calls for tenders and related documents on the Internet are most likely not yet exhausted, as smaller projects in particular are awarded without public calls. Government institutions, with their experience in handling public calls, can serve as a role model by increasingly using public tendering also for smaller contracts and especially by developing appropriate tendering procedures to keep the costs of tendering low for all parties involved.

References

European Commission (1998): The contribution of business services to industrial performance: a common policy framework, COM (1998) 534 final.

ZEW Branchenreport Dienstleister der Informationsgesellschaft, July 2002.

Bruhn/Stauss (2002): “Electronic Services”, Dienstleistungsmanagement Jahrbuch 2002.

PricewaterhouseCoopers / Department of Trade and Industry (2001a): “E-commerce Impact Study for the Management Consultancy Sector”. Final report, September 2001.

PricewaterhouseCoopers / Department of Trade and Industry (2001b): “E-commerce Impact Study for the Marketing & Communications Sector”. Final report, September 2001.

PricewaterhouseCoopers / Department of Trade and Industry (2001c): “E-commerce Impact Study for the Exhibition and Conference Sector”. Final report, September 2001.