

Sector Report: No. 01-I, May 2004

Electronic Business in the Textile, Clothing and Footwear Industries

*The quantitative picture:
Diffusion of ICT and e-business in 2003/04*

**e-business
w@tch**



European
Commission



Enterprise publications

The e-Business W@tch

The European Commission, Enterprise Directorate General, launched the *e-Business W@tch* to monitor the growing maturity of electronic business across different sectors of the economy in the enlarged European Union and in EEA countries. Since January 2002 the *e-Business W@tch* has analysed e-business developments and impacts in 17 manufacturing, financial and service sectors. Results are continuously being published on the Internet and can be accessed or ordered via the Europe server or directly at the *e-Business W@tch* website (www.europa.eu.int/comm/enterprise/ict/policy/watch/index.htm or www.ebusiness-watch.org).

This document is the first Sector Impact Study on the Textile, Clothing and Footwear Industries published in the 2003/04 period. It presents the results of the e-Business Survey 2003 (for more information about the survey, see annex on methodology). The second study on this sector (to be published in August 2004) will analyse in more depth specific issues which are most relevant for this sector, feature case studies and draw conclusions on business implications of the empirical findings presented in this report.

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 Databank Consulting on behalf of the European Commission, Enterprise Directorate General. It is part of a deliverable in the context of the *e-Business W@tch*, which is implemented by a team consisting of empirica GmbH (co-ordinating partner), Berlecon Research, Databank Consulting, DIW Berlin, IDATE, PLS RAMBØLL Management and Saatchi & Saatchi Business Communications on behalf of the European Commission based on a service contract running from July 2003 until September 2004.

Contact

For further information about this Sector Study or about the *e-Business W@tch*, please contact:

 <p>Databank S.p.A. Elena Gaboardi Responsible partner Corso Italia, 8 20122 – Milan Italy Fax: (39-2) 72107402 databank@databank.it</p>	 <p>e-Business W@tch c/o empirica GmbH Oxfordstr. 2 D-53111 Bonn Germany Fax: (49-228) 98530-12 info@ebusiness-watch.org</p>	 <p>European Commission Enterprise Directorate-General e-Business, ICT Industries and Services Fax: (32-2) 2967019 entr-ict-e-commerce@cec.eu.int</p>
--	--	--

Rights Restrictions

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

Milan / Brussels, May 2004

Table of Contents

Table of Contents.....	3
Index of tables and charts	4
Introduction to the <i>e-Business W@tch</i>	5
The textile industries: the use of ICT and e-business in 2003/04	9
1 Economic profile.....	9
1.1 Definition.....	9
1.2 Economic profile.....	11
1.2.1 <i>Industry structure</i>	11
1.2.2 <i>Organisation structure and production</i>	13
1.2.3 <i>Production value and regional distribution</i>	17
1.2.4 <i>International trade</i>	20
1.2.5 <i>Employment, productivity and labour costs</i>	22
1.3 International trends and challenges	24
2 The use of ICT and e-business in 2003/04.....	27
2.1 Introduction	27
2.2 E-business indicators – the statistical picture	28
2.2.1 <i>Infrastructure and skills development</i>	28
2.2.2 <i>Internal business processes</i>	34
2.2.3 <i>Procurement processes and supply chain management</i>	36
2.2.4 <i>Marketing and sales</i>	41
2.2.5 <i>Functions of the extended enterprise</i>	46
2.2.6 <i>Outlook: What will be important</i>	48
2.3 The European e-Business Sector Scoreboard	50
2.3.1 <i>Introduction</i>	50
2.3.2 <i>E-Business Scoreboards for the textile, clothing and footwear industries</i>	52
2.3.3 <i>Cross-sector Scoreboards</i>	53
2.3.4 <i>Sectors in profile</i>	57
3 Summary and conclusions	58
3.1 Summary of main findings.....	58
3.2 Economic impacts	61
3.2.1 <i>Impacts on individual enterprises</i>	61
3.2.2 <i>Implications for the industry</i>	63
3.3 Policy implications	64
References	66
Annex I: Methodological Notes on the <i>e-Business Survey 2003</i>	67
Annex III: Glossary of Technical Terms.....	71
Annex III: Sector Impact Studies of the <i>e-Business W@tch</i> in 2003/04.....	74

Index of tables and charts

Exhibit 1-1: Configuration of the textile, clothing and footwear industries in terms of NACE Rev. 1	9
Exhibit 1-2: Textile, clothing & leather industries and sub-sectors: structure by kind of activity, 2001	11
Exhibit 1-3: Size class distribution in the textile, clothing and leather industries in the EU, 2000	12
Exhibit 1-4: Share of the top three and top five companies in total textile and clothing industry turnover in 2000	16
Exhibit 1-5: Share of the main companies in total 1999 national clothing industry turnover (%).....	16
Exhibit 1-6: Production value and value added in the textile industries -NACE 17- in European countries.....	18
Exhibit 1-7: Production value and value added in the clothing industries –NACE 18- in European countries.....	19
Exhibit 1-8: Production value and value added in the leather industries –NACE 19- in European countries	20
Exhibit 1-9: EU external trade in textile and clothing, 1998-2000	21
Exhibit 1-10: EU15 Production and external trade in footwear, 2000-2002 (million pairs)	22
Exhibit 1-11: Employment, productivity and labour costs in the textile industry (NACE 17).....	22
Exhibit 1-12: Employment, productivity and labour costs in the clothing industry (NACE 18)	23
Exhibit 1-13: Employment, productivity and labour costs in the leather industry (NACE 19)	24
Exhibit 2-1: Use of physical network infrastructure in the textile, clothing and footwear industries (2003).....	29
Exhibit 2-2: Enterprises enabling remote access to their computer system and enterprises using a Wireless LAN	30
Exhibit 2-3: Companies having Internet access (2003)	30
Exhibit 2-4: Internet access and use of basic internet applications (2003)	31
Exhibit 2-5: Quality of internet connection used by companies (2003)	32
Exhibit 2-6: Quality of internet connection by size-band (2003).....	32
Exhibit 2-7: Companies supporting any kind of IT skills development (2003).....	33
Exhibit 2-8: Companies which experienced difficulties in recruiting IT staff (2003).....	33
Exhibit 2-9: Recruitment activities, expected qualifications and outsourcing of IT activities (2003)	34
Exhibit 2-10: Knowledge management and e-learning (2003).....	34
Exhibit 2-11: Use of online technologies to support internal business processes (2003).....	35
Exhibit 2-12: Companies using an ERP (enterprise resource planning) system (2003).....	36
Exhibit 2-13: Companies from the textile, clothing and footwear industries making online purchases by country (2003)	37
Exhibit 2-14: Online purchasing activities by companies (2003).....	37
Exhibit 2-15: Distribution platforms and protocols used for online purchases (2003).....	38
Exhibit 2-16: Share of online purchases (all platforms) as % of total purchases (2003).....	39
Exhibit 2-17: IT integration with suppliers (2003)	39
Exhibit 2-18: IT integration with suppliers (2003)	40
Exhibit 2-19: Perceived effects of purchasing online in the textile, clothing and footwear industries (2003).....	40
Exhibit 2-20: Reported effect of e-purchasing on the number of suppliers (2003)	41
Exhibit 2-21: Online marketing and e-commerce activities (2003).....	42
Exhibit 2-22: Distribution platforms and protocols used for online sales (2003).....	43
Exhibit 2-23: Business integration of online sales systems in the textile, clothing and footwear industries (2003)	44
Exhibit 2-24: Exchange of documents and standardised data with customers (2003).....	44
Exhibit 2-25: Companies using a CRM (customer relationship management) software application (2003)	45
Exhibit 2-26: Use of online technologies for business processes between companies (2003)	46
Exhibit 2-27: Exchange of standardised data between companies (2003)	48
Exhibit 2-28: Assessment by companies: The expected future importance of e-business.....	48
Exhibit 2-29: Assessment by companies: The expected expenditures on e-business	49
Exhibit 2-30: Assessment by companies: The future importance of new developments.....	49
Exhibit 3-1: Overall significance of e-business for companies in 2003 (by region and by size-band)	61
Exhibit 3-2: Reasons why e-business does not play a role in companies.....	62
Exhibit 3-3: Perceived impacts of the internet and e-business technologies	62

Introduction to the *e-Business W@tch*

The *e-Business W@tch* – observatory and intermediary since late 2001

The *e-Business W@tch* monitors the adoption, development and impact of electronic business practices in different sectors of the European economy. The eEurope 2002 Action plan provided the basis for targeted actions to stimulate the use of the internet for accelerating e-commerce, acknowledging that "electronic commerce is already developing dynamically in inter-business trading [...]" and that "it is important for SMEs not to be left behind in this process [...]." The eEurope 2005 Action Plan, endorsed by the Seville European Council in June 2002, confirmed and built further upon these objectives with Action 3.1.2. "A dynamic e-business environment", which defined the goal "to promote take-up of e-business with the aim of increasing the competitiveness of European enterprises and raising productivity and growth through investment in information and communication technologies, human resources (notably e-skills) and new business models".

It is against this background that the European Commission, Enterprise Directorate General, launched the *e-Business W@tch* in late 2001, with the objective to provide sectoral analysis based on sound empirical research, including annual enterprise surveys in all countries of the enlarged European Union. Special emphasis is placed on the implications for SMEs.

Since its launching, the *e-Business W@tch* has published e-Business Sector Studies on 17 sectors of the European economy, two comprehensive synthesis reports about the status of electronic business in the European Union, statistical pocketbooks and further resources (newsletters, presentations, special issue reports). These are all available on the website at www.ebusiness-watch.org.

The quantitative analysis about the diffusion of ICT and e-business is based to a large extent on annual, representative surveys among decision makers of European enterprises. The 2002 survey included 9,264 enterprises from the 15 EU Member States. In 2003, the regional scope of the survey was extended to the EEA and Acceding Countries, with about 10,500 companies in total.

Survey results confirm the initial assumption and rationale of the *e-Business W@tch* that the sector in which a firm operates and the size of a company are main determinants of its e-business activity, rather than the location of a company. The large demand for the various publications and statistics provided by the *e-Business W@tch*, and their exploitation by other research institutions (for example, in the EITO Yearbook 2003 and in the OECD Information Technology Outlook 2004), documents that there has clearly been a demand for sectoral e-business analysis.

Facilitated by positive responses and the growing interest in its analysis, the *e-Business W@tch* is increasingly developing from an observatory into a think-tank and intermediary, stimulating the debate about the economic and policy implications of e-business among stakeholders at an international level.

The wide-angle perspective: the *e-Business W@tch* provides the "big picture" as a basis for further research

The mission of the *e-Business W@tch* is to present a "wide-angle" perspective on e-business developments and practices in the sectors covered. This has important implications regarding the level of detail in which various issues can be explored, both in terms of the quantitative picture (survey) and in terms of the qualitative assessment and background research.

Over the past 10 years, "electronic business" has increased from a very specific to a very broad topic to be studied. The OECD defines e-business in 2004 concisely as "automated business processes (both intra-and inter-firm) over computer mediated networks". This definition is useful as it makes clear that e-business is more than e-commerce (which focuses on commercial transactions between companies and their customers, be it consumers or other companies) and that e-business includes

internal processes within the company as well as processes between companies. Furthermore, the OECD definition implicitly indicates that the focus and main objective of electronic business is to be found in business process automation and integration and the impacts thereof.

This implies that the potential scope for e-business analyses has also broadened. The measurement of e-commerce transactions (the volume of goods and services traded online) can and should be complemented by studies analysing the degree to which business processes, including intra-firm processes, are electronically linked to each other and have become digitally integrated.

In such a context, it becomes practically impossible to cover in depth all areas and facets of e-business in one study. The scope of such a study needs to be carefully defined and – as in photography – it must be decided whether to "zoom in" or to use a "wide-angle" perspective. 'Zoom-in' studies investigate one specific aspect of electronic business in much detail. 'Wide-angle' studies adopt a broader perspective and investigate more issues at the same time, which necessarily puts limits to the level of detail in which each single issue can be explored. This must be considered when using this series of Sector Studies prepared by the *e-Business W@tch*. The second series of these Sector Studies (to be published in August 2004) will investigate and analyse specific issues in more detail also taking into account feedback from a number of case studies.

The role of economic analysis in the Sector Reports

The first chapter of each *e-Business W@tch* Sector Study provides background information on the respective sector. This overview includes the definition of the sector (on the basis of NACE Rev. 1 classification), some basic industry statistics, as well as information about the latest trends and challenges concerning the specific sector.

It appears that this practice, combined with the growing interest in the *e-Business W@tch* analysis, has caused some confusion: Some readers mistakenly consider that an *e-Business W@tch* "sector report" is a piece of economic research on the sector itself, and not a report focussing on the use of e-business in that particular sector. It is, therefore, necessary to underline that, while some background information is provided in order to better understand the context and the economic impact of e-business, the *e-Business W@tch* reports are neither intended nor could substitute more detailed and specific industrial analysis and statistics on each particular industry.

The same applies to the industry statistics presented in this first, introductory chapter of the *e-Business W@tch* reports. These data are mainly derived from official statistics prepared by Eurostat. However, in order to close the many gaps in the official statistics, DIW Berlin imputed missing data based on extrapolations and their own calculations. The *e-Business W@tch* cannot go beyond the presentation of this consistent set of statistics in the context of its principal assignment.

The mission of the *e-Business W@tch* is to monitor, analyse and compare the development of e-business in different sectors of the European economy – not the sectors themselves. Its objective is to provide reliable results, based on commonly accepted methodologies, which are not readily available from other sources and would trigger the interest of policy-makers, researchers, and other e-business stakeholders for more in depth analyses (or statistical surveys). The *e-Business W@tch* has adopted a 'wide-angle' perspective in its approach and the necessary trade-offs are transparently depicted in all its deliverables.

The definition of sectors and the adequate level of aggregation

Economic sectors constitute the main level of analysis for the *e-Business W@tch*. In 2003/04, the sample consists of ten sectors. Their configuration and definition are based on the NACE Rev. 1 classification of business activities. The aggregation of various NACE divisions and groups into a "sector" was guided by the aim to produce results which are relevant for the dynamics of the economy as a whole as well as with the intention of covering the most important features of e-business provision and adoption in Europe. The configuration of sectors partly followed aggregations that are also used in the "Panorama of European Businesses" published by Eurostat.

In the context of its 'wide-angle' perspective, the *e-Business W@tch* analysis is covering a large part of the European economy rather than focusing on very specific (sub-)sectors. Therefore, the statistics presented in these reports need to be carefully treated when making comparisons between countries and, occasionally, companies' size-classes. Against the previously described background, some generalisation and approximation has to be accepted, while the definition of sectors could be revisited during the implementation of the *e-Business W@tch*.

The 10 sectors analysed in 2003/04

The 10 sectors which are being monitored and studied in 2003/04 include eight sectors that were already covered in 2002/03 (thus allowing the continuous monitoring of changes and progress), as well as two new ones (namely the textile, clothing and footwear industries and the craft and trade sector). The regional coverage has been extended to the EEA (European Economic Area) and the Acceding Countries.

Exhibit: Sectors covered by the e-Business W@tch in 2003/04

Textile, clothing and footwear industries	The textile and footwear industries account for about 5% of total value added in manufacturing in the EU-15 and about 9% of employment. SMEs and co-operative SME networks are playing a vital role.
The chemical industries	ICT and the Internet in particular have fuelled the globalisation of markets for chemical products. E-business may have considerable future impact on this sector which accounts for ~15% of the production value of EU manufacturing.
The electrical machinery and electronics industries	The electronics industry is very suitable for e-business because of the high degree of standardisation of products, globalisation of production, and specialisation of firms along the value chain. Its dynamic development calls for continuous monitoring.
The manufacture of transport equipment	The transport equipment industries are precursors for economic development in Europe. Large companies are forerunners in using e-business, with considerable implications for all stakeholders in the value chain.
Craft & trade	The craft sector, which includes firms with less than 50 employees from a number of business activities, is vast, in terms of number of enterprises, employment and value added. E-business may become crucial in order for many craft firms to stay competitive with industrial production.
Retail	The retail sector represents a cornerstone of economic activity within Europe, with around 3 million retail enterprises currently in the EU, employing nearly 14 million people. As there is still untapped potential, ICT may eventually have major implications for the retail value chain.
Tourism	Tourism employs about 8 million people and is one of the fastest growing sectors in the European economy. SMEs play a very important role: 99% of firms employ fewer than 250 individuals. In some respects, the tourism sector has always been a forerunner in using ICT. E-commerce is exerting a huge impact on the sector, challenging intermediaries.
ICT services	The ICT services sector in many respects is the leading sector, and thus acts as a kind of benchmark with respect to e-business application. E-business can change the nature of ICT services, which has important implications for other sectors which use them.
Business services	Business services are a huge sector, involving more than two million enterprises – 99% of which are SMEs – and employing close to 13 million people. ICT and e-business have significant implications for those areas of the business services sector that are based on information and knowledge.
Health and social work	As national health systems suffer from increasing costs and political pressures to constrain these, it is hoped that strategies for the development of an e-health and e-business infrastructure will become key drivers of change.

Rationale for the selection of sectors to be monitored in 2003/04

The selection of the ten sectors to be monitored in 2003/04 was guided by the aim of producing results relevant to tracking the dynamics of the economy as a whole as well as with the intention of covering the most important features of e-business provision and adoption in Europe. There are, however, additional factors that have been taken into consideration for the selection process. An important aspect to be considered is that any sector which is not going to be covered during the 2003/04 period is a candidate for analysis in 2004 onwards, provided that the *e-Business W@tch* contract will be renewed.

Primary selection criteria

- (a) The economic importance of the sectors for the EU economy: For the representation of e-business impacts in the economy as a whole, "large" sectors play a major role, since changes in their production models, their purchasing and marketing behaviour as well as their productivity and dynamics of growth have a very major effect on the performance of the entire economy. The assessment of the economic importance was mainly based on two standard economic indicators: the sector's share of employment and the amount of value-added by the sector.
- (b) The relative importance of electronic business within the sector: As the *e-Business W@tch* has demonstrated in the first phase (2002/03), the intensity and nature of ICT and e-business usage differs considerably between sectors. Some sectors, although still small in absolute terms, are growing rapidly and/or illustrate the role which ICT and electronic business may play in other sectors in the future. The statistical proxy for the relative importance of e-business in a sector is the Pilot Index which was computed for 15 sectors (cf. European E-Business Report 2003), based on the eEurope 2005 E-Business Index.

Secondary selection criteria

In addition to these two fundamental criteria, some other selection criteria were applied in cases where the economic and e-business relevance appeared to be equal or similar. These criteria were:

- Balance of business activities: There should be a balanced mix of manufacturing and service sectors. Sectors could include a public service sector for comparison.
- The SME dimension continues to be very important. Sectors with a higher share of SMEs could therefore given priority over sectors where large companies dominate.
- Policy relevance: The selection needs to consider the policy relevance from the perspective of DG ENTR, that is for which sectors the DG has responsibility.
- Roll-out strategy: Some new sectors (not covered in 2002/03) should be included in order to broaden the monitoring scope of the *e-Business W@tch*. Among sectors with a comparable economic size, new sectors (not yet covered) may be given priority.

In order to come to an initial ranking of economic importance, the *e-Business W@tch* has computed a simple Index using two component indicators: the number of persons employed, and value added. The Index reflects the contribution of the sector to the total of all sectors compared.

The next step in the selection process was an attempt to make a joint consideration of the sector's contribution to employment and value added together with the relative importance of ICT and e-business in the sector. For this purpose, the *e-Business W@tch* has computed an Index that combines the two components. In such a ranking, Business Services comes out on top, followed by Health, Retail, the Financial Services sector and ICT Services.

Based on this statistical evidence and the considerations presented above, the *e-Business W@tch* proposed a roll-out plan and a configuration of 10 sectors for the period 2003/04 that provide good coverage of relevant business activities, issues and countries, as well as being manageable in the organisation designed for the *e-Business W@tch* and the resources available.

The textile, clothing and footwear industries: the use of ICT and e-business in 2003/04 ¹

1 Economic profile

This section gives an overview of the size and structure of the textile, clothing and footwear industries, using key economic indicators from the New Cronos database of Eurostat. New Cronos is structured in nine parts ("themes"). Most of the data used in this chapter are derived from theme 4 "Industry, trade, and services", and here from the collection sbs (structural business statistics).

Statistics presented in this chapter were prepared by DIW Berlin which obtained the most recent data available from Eurostat in November 2003. Gaps in the official statistics resulting from missing data for individual countries or the respective year in the time-series of a country were imputed, based on economic calculations and estimates by DIW. The most recent official statistics available for industry-wide macro-economic indicators are those of 2001. For the new EU Member States, the most recent national accounts usually date back to 2000.

1.1 Definition

For the purposes of this study, the "Textile, clothing and footwear Industries" are defined as those business activities covered by NACE Rev.1 Divisions 17, 18 and 19 as shown in the table below. NACE 17 comprises mainly the "textiles" sector, NACE 18 "clothing", and NACE 19 the manufacture of leather products, out of which this study will cover the manufacturing of footwear only. The data on the overall industry presented in the "Economic Profile" of this chapter include a few sub-sectors (18.3, 19.1, 19.2) which have been not been addressed by the survey and the related analysis on e-business impacts. Although the macro-economic statistics do not mirror exactly the configuration of the sector, they nevertheless provide a good proxy for the e-business analysis.

*Exhibit 1-1: Configuration of the textile, clothing and footwear industries
in terms of NACE Rev.1*

NACE Rev. 1		Activity
Division	Group	
17		Manufacture of textile and textile products
	17.1	Preparation and spinning of textile fibres
	17.2	Textile weaving
	17.3	Finishing of textile
	17.4	Manufacture of made-up textile articles except apparel
	17.6	Manufacture of knitted and crocheted fabrics
	17.7	Manufacture of knitted and crocheted articles
18		Manufacture of wearing apparel, dressing and dyeing of fur
	18.1	Manufacture of leather clothes
	18.2	Manufacture of other wearing apparel and accessories
19		Manufacture of leather and leather products
	19.3	Manufacture of footwear

¹ This report was prepared before 1st May 2004. Hence, if not stated otherwise, the term "EU-15" refers to the 15 Member States until 30th April 2004, while the term "Acceding Countries" is used for the 10 new Member States which joined the European Union on 1st May 2004.

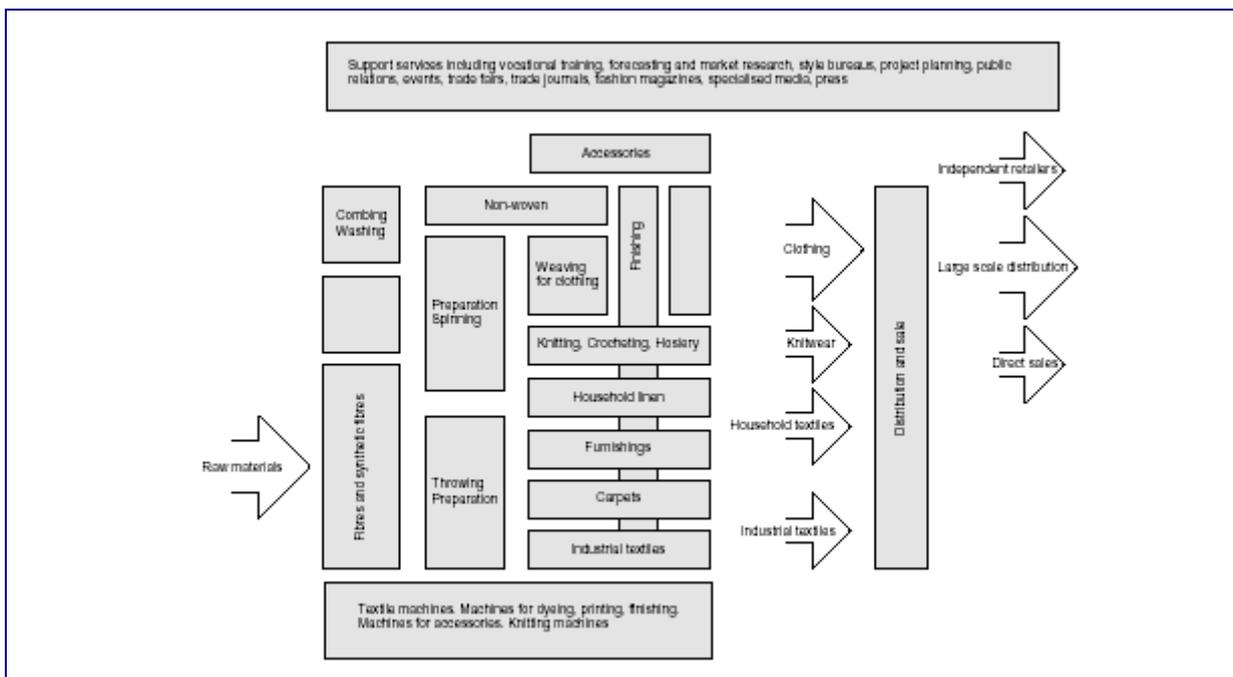
These industries represent the core of the traditional consumer goods manufacturing. While textile and leather produce mainly raw materials, the downstream industries (clothing and footwear) produce consumer goods. The links between the industries are very close: the textile industry delivers about half of its production to the clothing industry, the manufacture of footwear is in the same position towards the leather industry as a whole.

About one quarter of the production of textile consists of so-called technical textiles which include special fibres suiting industrial and technical applications. Besides technical garments, these textiles are largely and increasingly applied in sectors such as transportations, health care and environmental protection. The demand for such products is represented by other industrial sectors: automobile, furniture, building, electronic industries.

The textile and clothing industries cover an enormous diversity of processes and products. Activities range from the production of raw materials (i.e. natural as well as man-made fibres) to the manufacture of a wide variety of semi-finished and finished products. There are multiple layers of raw materials and intermediate products, most of which pass through intermediaries of some type, such as commission agents, stockists, importers, etc. The main activities are:

- the treatment of raw materials, i.e. the preparation or production of various fibres, and/or the manufacture of yarns (e.g. through spinning).
- finishing activities, aimed at giving fabrics the visual, physical and aesthetic properties which consumers demand – such as bleaching, printing, dyeing, impregnating, coating, plasticising;
- the transformation of those fabrics into articles of clothing, knitted or woven.

The textile and clothing chain



Source: The changing profile and map of the EU textile and clothing industry, Mick Dunford, School of European Studies

The leather industries cover the tanning and finishing of hides and skins and their transformation into leather, which in turn finds applications in various downstream industries, among which the footwear industry is the most important. The footwear industry is increasingly using materials alternative to leather, particularly for those products addressing the youngest and the casual segments in general.

Distribution is a fundamental activity in the overall sector value chain. Although some players have set up their own distribution networks in the framework of their vertical integration strategy, the manufacturing and distribution sectors remain very different in their characteristics and nature, and should therefore be treated separately.

1.2 Economic profile

1.2.1 Industry structure

The EU-15 textile, clothing and footwear industries generate a combined production value of about 218 m Euro, accounting for about 4.5% of total European manufacturing (the production of the textile, clothing and leather sector as a whole is about 240 m Euro). More than 185,000 companies active in these industries employ 2.2 million people, representing 7.3% of total manufacturing employment

Out of the 185,000 enterprises active in textile, clothing and footwear in EU-15, a clear majority operate in the clothing sector. The manufacturing of wearing apparel and accessories is by far the most important sub-sector, followed by the manufacturing of footwear. More than 90% of enterprises, across all the sub-sectors, have less than 50 employees.

Exhibit 1-2: Textile, clothing & leather industries and sub-sectors: structure by kind of activity, 2001

		Textile industries in EU-15 2001: Structure by kind of activity			
		Number of enterprises	Production Value	Value added at factor cost	Person employed
	NACE	Number	Euro (million)	Euro (million)	Number
17	Manufacture of textiles	66,386	115,173	35,318	1,026,064
17.1	Preparation and spinning of textile fibres	6,313	17,344	4,673	139,011
17.2	Textile weaving	7,482	24,551	6,975	182,111
17.3	Finishing of textiles	6,007	11,612	4,526	122,183
17.4	Made-up textile articles, except apparel	17,322	14,906	4,851	167,058
17.5	Manufacture of other textiles	13,759	28,250	8,753	217,316
17.6	Knitted and crocheted fabrics	5,874	5,876	1,616	53,808
17.7	Knitted and crocheted articles	9,630	12,634	3,924	144,577
18	Wearing apparel; dressing; dyeing of fur	101,493	77,481	22,610	887,411
18.1	Manufacture of leather clothes	2,674	1,307	426	12,459
18.2	Other wearing apparel and accessories	94,929	75,078	21,855	860,940
18.3	Dressing and dyeing of fur, articles of fur	3,889	1,096	329	14,012
19	Tanning, dressing of leather; luggage	39,730	46,566	12,668	452,309
19.1	Tanning and dressing of leather	3,798	10,821	1,985	55,516
19.2	Luggage, handbags and the like, saddlery	13,215	8,341	2,602	86,607
19.3	Manufacture of footwear	22,717	27,404	8,080	310,185

Source: Eurostat New Cronos 2003, estimates and calculation by DIW Berlin (2003)

There has been a sharp decline in employment over the past decades, together with a substantial rise in productivity brought about by deep restructuring and the introduction of new technologies.

More than 50% of employees work in micro and small enterprises. This figure reaches 60% in the leather industry. SMES also account for more than 40% of production value.

The industry structure in Acceding Countries mirrors the picture of EU-15. Fragmentation and size distribution, in fact, show very similar patterns, while as far as the structure of employment is concerned, large companies account for a much wider share of employment.

Exhibit 1-3: Size class distribution in the textile, clothing and leather industries in the EU, 2000

		Enterprises with ... people employed			
		1-9	10-49	50-249	250+
NACE	Number of enterprises	Structure in % of total			
17	69,135	74.4	19.8	5.0	0.8
18	108,838	81.0	16.4	2.3	0.3
19	41,477	74.3	22.3	3.1	0.3
Total (EU-15)	219,450	77.7	18.6	3.3	0.4
17	10,724	84.8	8.5	4.9	1.8
18	35,061	87.5	9.1	3.0	0.4
19 ²⁾	1,239	71.6	18.9	8.0	1.5
Acceding Countries ¹⁾	-	-	-	-	-
	Number of people employed	Structure in % of total			
17	1,053,600	13.6	26.9	34.0	25.5
18	963,400	22.3	36.1	25.5	16.1
19	460,000	19.6	39.2	25.9	15.2
Total (EU-15)	2,476,900	18.1	32.7	29.2	19.9
17	108,858	5.2	9.6	22.3	62.9
18	132,000	9.7	23.6	24.8	41.9
19 ⁴⁾	20,502	5.6	19.0	33.0	42.4
Acceding Countries ⁵⁾	-	-	-	-	-
	Value added at factor costs	Structure in % of total			
17	36,295.0	9.8	24.8	35.5	29.9
18	23,191.5	15.0	32.2	28.0	24.7
19	12,337.3	14.8	34.4	28.5	22.2
Total (EU-15)	71,823.8	12.4	28.8	31.9	26.9
17	1,422.7	8.5	8.9	24.9	57.7
18	1,529.3	19.6	19.5	25.8	35.1
19 ⁴⁾	89.0	2.7	18.0	33.6	45.7
Acceding Countries ³⁾	-	-	-	-	-

1) CZ, EE, LT, LV, PL, SK only; 2) CZ, EE, LT, LV only; 3) CZ, LT, PL, SK only; 4) CZ only.- 5) CZ, LT, SK only.

Source: Eurostat New Cronos 2003, estimates and calculation by DIW Berlin (2003)

1.2.2 Organisation structure and production

The structural characteristics of these industries are affected by a wide range of market factors. The demand, in particular for clothing and footwear, is growing relatively slowly. It is highly unstable and changing rapidly due to fashion-related and seasonal fluctuations. The range of products is very diversified (by gender, age, life style, usage etc., each with different sizes and colours) which implies that enterprises need to have great flexibility to constantly adapt their range of offer. As a supplier to the clothing and footwear industry, the textile and leather industry had, in turn, to adapt production and marketing strategies. In particular, reduction of products' life cycle has determined the need for increased segmentation of what is offered.

The great majority of micro and small enterprises are privately owned. An outstanding feature of this industry is the low level of concentration and, at the same time, the traditionally high degree of co-operation of the various players along the value chain, independently of a common ownership.

Typologies of competitors are:

In the upstream chain

- manufacturers of fibres and yarns. Manufacturers of natural fibres mainly operate at an international level. The manufacturers of synthetic fibres have a strong links with the chemical industry. The manufacturers of yarns deal with the transformation of the fibre flocks into yarns which are used for the subsequent production phases
- companies dealing with preparation and spinning. Spinning of natural fibres is mainly carried out by small and medium sized enterprises. Spinning of synthetic fibres is carried out by larger companies

In manufacturing activities

- very few vertically integrated enterprises or groups that cover the whole production cycle.
- outsourcers/sub-contractors, carrying out specific phases of textile production process or specialised operations activities in clothing or shoe manufacturing
- suppliers selling their own brands, mostly relying on subcontractors for all, or a few, production activities. It is important to highlight that even small and micro enterprises may resort to sub-contractors
- enterprises which have full downstream integration relying on a proprietary "single-brand" distribution network, such as Zara (ES) and H&M (SE) or Benetton (I). Production is generally outsourced with strong ICT integration in all the phases

In distribution

- industries and stylists with strong trademarks, such as the ones mentioned above
- distribution chains selling their own brands, resorting to outsourcers for production activities.

Pure retailers are not included in this analysis.

A sector value chain of highly specialised units: the role in regional development

Subcontracting activities (in particular dressmaking and certain specialised operation, such as sewing and refining) are often carried out by networks of specialized micro and small enterprises, which are concentrated in particular regions where they play a vital role as for employment, incomes and local development.

Main factors accounting for such an important role of textile, clothing and footwear industries at regional and local level are:

- the geographical concentration: many micro and small enterprises are located in areas with very little industrial diversity - although with differences across Member States

- their feature of being labour-intensive activities requiring a high level of specialisation. The quality of the European workforce is recognised as exceeding that of the other regions (and this quality is reflected in the structure of labour cost). However, when restructuring processes impose a reduction in employment, this workforce – mainly female workers – hardly have a possibility to reconvert to other sector
- the impact of these industries on other sectors in the regional/local area: transports, service providers, upstream material providers, intermediaries etc..

Subcontracting is very diffused, although with remarkable differences across member states. In 43 regions in the EU, the textile and clothing sector represents more than 10% of the industrial jobs. Regional industries are generally organised around specific product groups (e.g. silk or knitwear) (European Commission, 1998).

Relocating production

Suppliers selling their own brand on the market have been outsourcing their production activities for decades. Production has been traditionally organised with one company acting as the hub and co-ordinating the whole process. This allows an optimal use of available resources, increases the group's flexibility and improves the response to market developments. At the same time, the size of the group increases its bargaining power vis-à-vis suppliers and customers and generates relevant economies of scale. In fact, the break-up of industrial sectors and the effects of competition made it possible to find suppliers which are less expensive than an integrated supplier would be. The low level of standardisation of products is also a factor that holds back a general trend towards vertical integration. Only technical products that are specialised from the fibre stage, such as the manufacture of some sports clothing and footwear, warrant integration of this kind.

Traditionally, a large share of outsourced production activities in this sector took place in "industrial districts"² where both the main company and the outsourcers were located.

Then, the textile, clothing, footwear sector introduced considerable technological and organisational changes to meet the pressures of the market; as a result of this there was a major process of relocation. Production has been divided between specialised sites located in different geographical areas to optimise costs.

Enterprises looking for cost advantages resort to foreign subcontractors, especially in Eastern Europe, non-EU Mediterranean countries – especially in the Maghreb for footwear production- and the Far East. Initially, this was particularly the case for companies positioned in the low-medium price range or offering standard products. As the quality of production in these countries has been increasing continuously, the relocation of production has, in turn, further increased in higher market segments as well.

What is happening in industrial districts in western EU is that the production of traditional and more low-level products is bound to disappear as quality and performance control become more verifiable and production can be moved abroad. Local subcontracting concentrates on high-level production. Already the number of subcontractors is decreasing, affecting in particular the less structured ones that perform only one step in the value chain. Competition is focusing on value-added activities (design, marketing, etc.) and the production of technical textiles.

Although outsourcing causes some problems in terms of quality standards and reliability of delivery, it is widely diffused. In fact, it makes it possible to control production costs, avoid bottlenecks during seasonal peaks, and transform the fixed costs associated with plants into the variable costs of contract manufacturing.

² In short, an industrial district can be defined as a cluster of companies, mainly SMEs, spatially concentrated and industry sector specialised. These clusters possess a strong cultural and social background linking the economic agents and creating a widely accepted behavioural code. A network of public and private local institutions generally supports the cluster.

Vertically integrated groups

There are a very few fully integrated groups that control the whole production process from the treatment of raw material to the manufacturing of finished products.

Examples of vertical integration can be found among companies active in the highest market segments and relying on well-known fashion brands. Through vertical integration and control over the whole production process they can ensure very high quality standards and a better service to the customer. However because of the high fixed costs they need to sustain a high price policy.

Business example:

Marzotto Group

This Italian Group located in the north east of Italy is quite an interesting example of industrial globalisation in this sector. The main feature is the vertical integration along the whole supply chain, due to the "historical" presence in manufacturing activities, and for the M&A strategy adopted in the past decades. At the same time, the group largely resorts to outsources for the manufacturing of products. Overall, Marzotto employs 12,000 people and had a consolidated turnover of 1,788m Euro in 2002.

The expansive strategy of the group dates back to the 80's, when the acquisition of national textile manufacturers aimed to broaden the productive know-how. In the 90's the internationalisation process started with the acquisition of the Hugo Boss (DE) clothing group. The next phase has been the acquisition of productive firms located in Eastern Europe (Latvia and Czech Republic). Eventually, in 2002 the group purchased Valentino group, diversifying into the stylist sector at the upper layer of the market. Presently the production activities are carried out through a network of specialised productive units located in Italy, Western Europe (Germany, Switzerland) Eastern European (Czech Republic, Latvia), Turkey, USA, as well as outsourcers. Downstream integration is carried out thorough a network of commercial units present in the main European countries, North and South America, Australia.

Source: articles, Annual Report, interview

Downstream integration: groups controlling the distribution network

A strategic choice increasingly taking place in this sector is the set up of a proprietary distribution network.

The reasons for this choice are numerous, the most important are:

- most of the economic value is found at the bottom of the value chain whereas the amount assigned to the upstream phase is being reducing
- the growth (in number and structure) of the distribution sector and of its bargaining power vis-à-vis manufacturers. From being manufacturers' main customers' they are increasingly becoming their competitors. (by pushing their own brands)
- the possibility to maintain central control of expansion strategy (location of stores, décor etc..) and communication
- control of distribution and therefore of end consumers allow to achieve customer loyalty and sales stability, thanks to more targeted communication policies
- the -related to the latter point- possibility to reduce time-to-market and lead time (from manufacturer to warehouse to store) through the exploitation of a common IT system and the control over customers and sales data

Pioneers, as previously highlighted, with this strategy have been the Benetton Group, Zara and H&M. In relation to the high investments needed, this choice has been pursued mainly by very large group. As this is increasingly becoming a key success factor, it is being pursued also by more and more groups, often through the franchising formula .

Concentration

Although small and medium sized enterprise predominate, a small number of larger enterprises account for a large percentage of turnover on EU markets. According to Euratex (European association of Textile Industries,) the degree of concentration varies from country to country, it is greater in UK and smallest in Italy.

Exhibit 1-4: Share of the top three and top five companies in total textile and clothing industry turnover in 2000

	Textile industry		Clothing industry	
	Share of top-3 companies	Share of top-5 companies	Share of top-3 companies	Share of top-5 companies
UK	43%	52%	22%	33%
France	21%	28%	28%	35%
Germany	14%	20%	35%	46%
Italy	9%	12%	20%	25%
USA	23%	31%	no data	no data

Source: Euratex, 2000

Another survey issued by Euratex in 2001, produced some figures regarding the degree of concentration in the clothing sector across several European countries, including EU Acceding Countries.

Exhibit 1-5: Share of the main companies in total 1999 national clothing industry turnover (%)

	Number of companies			
	3	5	10	15
Sweden	198.5	235.4	288.3	325.3
Norway	191.5	210.6		
Denmark	86.0	113.3		
Netherlands	82.3	101.6		
Finland	70.9	82.1	89.0	
Germany	32.9	45.2	62.2	73.9
Spain	44.1	54.7	64.5	69.9
Czech Republic	47.1	56.3	63.7	67.7
Switzerland	57.4	66.3		
Estonia	42.2	53.2	64.2	
Slovenia	52.9	57.3	63.4	
France	34.9	42.0	52.4	59.8
Slovakia	37.3	43.7	51.2	
Italy	23.3	29.9	41.2	48.0
Belgium	41.6	43.8	47.5	
United Kingdom	19.4	27.7	37.0	40.5
Greece	13.6	20.0	30.3	38.7
Turkey	3.5	4.1	5.5	6.8
Portugal	3.2			

Source: Euratex, 2001

The degree of concentration is particularly marked in Germany, Spain and France. In some smaller countries, the Nordic ones, the share of turnover exceeds the national turnover, due to the high degree of internationalisation of the industry in these countries. The eastern European countries included in the survey also show a high degree of internationalisation, e.g. the top ten companies in Czech Republic account for more than 60% of national turnover, similarly in Estonia and Slovenia. This degree of concentration reflects the previous state-owned industry structure which used to be in these countries. In Turkey and Portugal, on the other hand, the degree of concentration is particularly low.

1.2.3 Production value and regional distribution

EU-15

EU accounted for 29% of world textile production and 26% of world clothing production in 1999 (source OETH, 2000), lying well behind Asia which accounted for 39% and 45% respectively

Based on the analysis of indicators related to production and value added -plus employment- Italy is by far the most important country in the combined textile, clothing and leather industry. Italy accounts for more than one third of production and value added in textile and clothing and about 50% in the leather industry.

Looking at the breakdown between textile and clothing in the main European countries, the incidence of textile is about 60%, in line with the EU average. Some southern states (Portugal, Greece and Spain) are more concentrated on clothing while Nordic countries such as the Netherlands, Sweden and Austria are more focused on textile.

In the footwear sector, EU accounted for 7.3% -in volume- of world production in 2002.. The negative cycle in consumptions, increasing competition from Asian countries and the use of decentralised production processes have resulted in an overall output of 802 million pairs which corresponds to a sharp downturn in production levels: -9% with respect to. This negative trend involved all the main manufacturing countries. Italy remained the leading country within the EU with a share of about 41% corresponding to million pairs; Spain was second in terms of production with just under 200 million pairs, followed by Portugal and France (Source ANCI- Italian National Association of shoe manufacturers, CEC- European Confederation of Footwear industry-, SATRA Shoe & Allied Trades Research Association, 2004).

A good indicator of the importance of these industries for the various economies is given by the share of textile, clothing and footwear export in total manufacturing exports. In general, the relative importance of this sector is more significant in southern countries, in particular Greece and Portugal than in Nordic ones. According to Eurostat, in all member states, with the exception of Denmark, the share of textile and clothing export on total manufacturing exports has been declining in the past years.

Other countries

In some Acceding Countries, textile, clothing and footwear have been traditionally a major sector in manufacturing. The relative importance is, in some, cases, well above the EU average. In the year 2000, the production value generated by these industries in Acceding Countries was about 5% of the production value generated in EU-15 in the same year.

The share textile and clothing in total manufacturing production is very high in Turkey (15 %) and in Romania (10%), countries which are not covered by the statistical data presented here but which play a very important role in the sector scenario. Hungary, Czech Republic and Poland depend less on these industries (source Euratex 2000).

As for the footwear industry, the largest producer among Acceding and Candidate Countries is Romania (64 million pairs in 2000) followed by Poland. Romania is also the only country whose footwear

production and exports are showing significant increases. Strong relationship with Italy, EU leading producer, have resulted in dynamic growth in production and increasing penetration of European markets. This country has become a focus for European outsourcing of footwear production.

In Acceding and Candidate Countries, the main comparative advantage of the textiles clothing and footwear industry has been their low (labour) costs and (in a few cases) their traditions, which guarantee adequate quality. It is common practice, for EU companies, to carry out the so-called OPT, i.e. outward processing transactions. They consist of the export of EU fabric, cuttings or semi-finished garments to low-wage countries, which make them up into finished garments for re-import into the EU.

The Acceding and Candidate Countries continue to attract European industry and have also become familiar with the modern production techniques used in the EU. As a result, more and more EU businesses are developing internationalisation and co-operation strategies within them. The most part of the exports from these countries is towards the EU; this incidence ranges between two thirds and close to 100% for countries such as Romania and Poland. They are also very important outlet markets for EU export of intermediate products (for transformation and back import).

Exhibit 1-6: Production value and value added in the textile industries -NACE 17- in European countries (EU-15 in 2001, Acceding Countries in 2000)

Country	Production value		Value added	
	Euro (million)	% of EU-15	Euro (million)	% of EU-15
BE	7,042.2	6.1	1,900.6	5.4
DK	1,208.9	1.0	386.7	1.1
DE	15,677.2	13.6	5,274.2	14.9
EL	1,363.5	1.2	514.6	1.5
ES	9,394.9	8.2	3,025.8	8.6
FR	15,151.1	13.2	4,148.8	11.7
IE	497.5	0.4	190.5	0.5
IT	40,020.2	34.7	10,946.4	31.0
LU	522.4	0.5	196.7	0.6
NL	3,072.7	2.7	956.1	2.7
AT	2,455.3	2.1	833.6	2.4
PT	4,674.8	4.1	1,390.8	3.9
FI	677.4	0.6	271.5	0.8
SE	1,020.7	0.9	370.4	1.0
UK	12,394.7	10.8	4,910.8	13.9
EU-15	115,173.4	100.0	35,317.6	100.0
EU-15 (2000)	114,661.5	100.0	36,332.0	100.0
Acceding Countries¹⁾	5,669.5	4.9	1,828.9	5.0
CY	36.1	0.0	14.7	0.0
CZ	1,604.9	1.4	472.6	1.3
EE	219.4	0.2	53.4	0.1
HU	644.6	0.6	186.8	0.5
LV	167.7	0.1	62.6	0.2
MT	56.1	0.0	23.2	0.1
PL	2,180.2	1.9	800.9	2.2
SI	565.9	0.5	162.7	0.4
SK	194.6	0.2	52.0	0.1

1) Acceding Countries: Sum of the countries listed below

Source: Eurostat New Cronos 2003, estimates and calculation by DIW Berlin (2003)

Exhibit 1-7: Production value and value added in the clothing industries –NACE 18- in European countries (EU-15 in 2001, Accessing Countries in 2000)

Country	Production value		Value added	
	Euro (million)	% of EU-15	Euro (million)	% of EU-15
BE	2,642.0	3.4	288.7	1.3
DK	708.1	0.9	194.4	0.9
DE	10,345.0	13.4	2,683.5	11.9
EL	1,069.8	1.4	363.4	1.6
ES	7,378.9	9.5	2,471.9	10.9
FR	11,885.6	15.3	3,210.6	14.2
IE	321.4	0.4	136.7	0.6
IT	29,842.1	38.5	8,107.1	35.9
LU	2.2	0.0	1.3	0.0
NL	724.9	0.9	220.1	1.0
AT	842.2	1.1	301.7	1.3
PT	3,484.3	4.5	1,176.7	5.2
FI	555.1	0.7	198.5	0.9
SE	290.1	0.4	89.0	0.4
UK	7,389.2	9.5	3,166.1	14.0
EU-15	77,480,8	100,0	22,609,7	100,0
EU-15 (2000)	77,048.0	100.0	23,192.0	100.0
Accessing Countries¹⁾	4,360.0	5.7	2,037.1	8.8
CY	106.5	0.1	42.1	0.2
CZ	637.1	0.8	267.9	1.2
EE	141.3	0.2	60.7	0.3
HU	646.1	0.8	282.3	1.2
LV	115.2	0.1	52.6	0.2
MT	144.9	0.2	57.3	0.2
PL	2,096.8	2.7	1,062.1	4.6
SI	258.7	0.3	132.1	0.6
SK	213.4	0.3	80.0	0.3

1) Accessing Countries: Sum of the countries listed below

Source: Eurostat New Cronos 2003, estimates and calculation by DIW Berlin (2003)

Exhibit 1-8: Production value and value added in the leather industries –NACE 19- in European countries (EU-15 in 2001, Acceding Countries in 2000)

Country	Production value		Value added	
	Euro (million)	% of EU-15	Euro (million)	% of EU-15
BE	288.4	0.6	98.6	0.8
DE	3,814.1	8.2	1,006.4	7.9
ES	5,732.0	12.3	1,372.1	10.8
FR	4,319.8	9.3	1,588.9	12.5
IE	84.0	0.2	22.2	0.2
IT	25,243.6	54.2	6,139.5	48.5
NL	407.2	0.9	118.8	0.9
AT	902.8	1.9	273.4	2.2
PT	2,482.7	5.3	732.5	5.8
FI	238.6	0.5	91.0	0.7
SE	179.5	0.4	46.5	0.4
UK	2,360.2	5.1	1,064.7	8.4
other ¹⁾	513.3	1.1	113.2	0.9
EU-15²⁾	46,566.2	100.0	12,667.7	100.0
EU-15 (2000)	46,036.8	100.0	12,337.3	100.0
Acceding Countries³⁾	1,385.2	3.0	486.2	3.9
CY	28.2	0.1	12.7	0.1
CZ	263.7	0.6	88.9	0.7
HU	227.3	0.5	94.4	0.8
MT	41.5	0.1	13.6	0.1
PL	824.5	1.8	276.6	2.2

1) DK, EL; 2) without LU; 3) Acceding Countries: Sum of the countries listed below

Source: Eurostat New Cronos 2003, estimates and calculation by DIW Berlin (2003)

1.2.4 International trade

The textile, clothing and footwear industry is very global and trade flows have been constantly increasing over the past decades. According to Euratex, EU is the largest trader in textile and clothing: the world's biggest exporter of textile products and the second largest exporter of clothing products.

In the year 2000, textile and clothing accounted for 5.6% of total EU trade in manufacturing. Imports represented 6.8% of total imports and exports 4.3%. Despite growth in absolute terms, the share of textile and clothing trade has declined from 8.3% of total imports and 5.1% of total exports in 1995.

Textiles and clothing trade among World Trade Organisation (WTO) members is governed by the Agreement on Textiles and Clothing (ATC), which came into force with the WTO Agreement on 1 January 1995. This agreement means that alongside progressive application of General Agreement on Tariffs and Trade (GATT) rules, there will be progressive phasing out of quotas in the EU, US and Canada. These quotas were inherited from the Multifibre Arrangements (MFA). After a 10-year period ending on January 1 2005, the ATC will expire and all quotas will be abolished. So, in 2005, all WTO members will have unrestricted access to the European, American and Canadian markets.

Since the WTO agreement on textile and Clothing (ATC) entered in force in 1995, EU imports have been constantly increasing. According to the most recent data available from Euratex, the value of total imports reached 72.4bn Euro in 2002 (over 60% increase with respect to 1995). Presently, nearly one third of all textile and clothing bought in the EU are imports.

The overall trade balance was constantly negative in the same period (1995-2000), increasing by 80% which, in absolute terms, corresponds to about 29bn Euro. The increases in imports are mainly due to the tremendous growth of imports from developing countries. The bulk of total imports come from Asia, Euro-med countries and Turkey.

The overall deficit is due to the clothing sector while the balance of textile trades has been remaining positive.

When looking at these trade flows and their increase, it must be borne in mind that a large share of export has to be considered temporary: it consists of products that will be re-imported for final production and distribution. *The increase of international trade in recent years is, first of all, a signal of the process of production internationalisation which is under way in this sector.*

The export of textiles is directed towards the Euro-Med zone (including Turkey) which is the preferred de-localisation areas for European manufactures. There are close links between EU and these countries via investments and sub-contracting. The trade flows consist of large export of textile products to the area and of import of clothing. The advantage of these countries is, besides, the lower labour cost, their proximity and the possibility of easily and quickly exerting control over the outsourced activities. Some of these countries, in particular Turkey, rely heavily on these flows for export earnings.

As regards the clothing industry, the EU is heavily reliant on the markets of industrialised countries. The main outlets for clothing are US, Switzerland and Japan.

Exhibit 1-9: EU external trade in textile and clothing, 1998-2000

	1998	1999	2000
	EU external trade in Euro (million)		
Textile			
• Imports	17,009	16,551	19,500
• Exports	21,730	21,554	22,299
• Balance	4,721	5,003	2,799
Clothing			
• Imports	37,964	40,540	47,300
• Exports	13,120	12,662	14,974
• Balance	-24,844	-27,878	-32,326
Textile and clothing			
• Imports	54,973	57,091	66,800
• Exports	34,850	34,216	37,273
• Balance	-20,123	-22,875	-29,527

Source: Databank elaborations based on Eurostat , OETH, WTO

The EU balance is also negative in the footwear sector. Although the EU keeps exploiting competitive advantages related to quality and style, the fierce competition on prices is impacting the overall positioning. After a decline of about 2% in 2001, EU exports in the footwear sector fell by more than 7% in 2002. The main EU export markets are countries with high income per capita (USA; Japan, Switzerland) while, on the other hand, the European footwear industry's share in EU is declining because of the constant rise in imports. China and Vietnam (the two largest suppliers to the EU) have increased their volume sales to the EU considerably: +12% and + 9% respectively in 2001 (Source: CEC European Confederation of Footwear industry- 2002).

Looking at Candidate and Acceding Countries, the main exporter is Romania (44 million pairs in 2000), followed by Poland , Slovakia and Czech Republic.

Exhibit 1-10: EU15 Production and external trade in footwear, 2000-2002 (million pairs)

	2000	2001	2002
Production	908	882	802
Export (world)	246	241	223
Import (world)	966	1,019	1,090

Source: Databank elaborations based on Eurostat, CEC, SATRA, ANCI

1.2.5 Employment, productivity and labour costs

In EU-15 countries, the share of employment on total employment in manufacturing is slightly more than 3% in textile and clothing and about 1.6% in leather. In Acceding Countries these percentages are slightly higher, particularly in the clothing sector (more than 6%).

Exhibit 1-11: Employment, productivity and labour costs in the textile industry (NACE 17) in European countries in 2001

Country	Employment		Productivity		Labour Costs	
	People employed	In % of manufacturing total	Value added per person employed	In % of manufacturing average	per employee (1000 Euro)	In % of manufacturing average
BE	41,530	6.2	45,764	70.1	30,931	71.6
DK	9,037	1.9	42,791	85.4	32,617	91.7
DE	136,416	1.8	38,663	70.6	31,154	73.6
EL	16,879	7.6	30,489	77.0	17,265	83.2
ES	115,141	4.3	26,279	67.0	19,281	74.7
FR	118,538	2.9	35,000	68.7	28,563	76.0
IE	6,798	2.7	28,026	21.3	19,975	64.7
IT	297,741	6.2	36,765	87.6	24,776	85.6
LU	1,261	3.7	156,037	230.8	56,147	131.5
NL	20,785	2.3	46,001	74.5	35,139	91.5
AT	19,853	3.2	41,989	73.7	33,389	85.3
PT	99,585	10.9	13,966	71.0	9,831	78.0
FI	5,949	1.4	45,638	64.0	31,371	83.0
SE	9,808	1.2	37,765	72.3	32,066	81.1
UK	126,743	3.3	38,746	65.8	28,075	74.8
EU-15	1,026,064	3.6	34,421	67.2	25,086	70.3
Acceding Countries¹⁾	141,064²⁾	4.9	6,134²⁾	59.8	5,099³⁾	76.3
CY	1,006	2.8	14,612	54.6	10,847	70.4
CZ	69,085	5.0	6,841	70.4		
EE	8,868	7.4	6,022	84.2	3,920	85.7
HU	33,287	4.4	5,612	45.4	3,867	67.3
LV	10,668	6.9	5,868	84.3	3,995	111.9
MT	725	2.3	32,000	109.0	12,555	89.2
PL					5,316	77.0
SI					9,286	78.9
SK	17,425	4.2	2,984	40.1	3,351	70.7

1) Year 2000; 2) CY, CZ, EE, HU, LV, MT, SK only; 3) CY, EE, HU, LV, MT, PL, SI, SK only

Source: Eurostat New Cronos 2003, estimates and calculation by DIW Berlin (2003)

The next enlargement will bring to EU about 0.6 million employees in the textile and clothing sector, a large share of which have been working for the EU market for a long time.

In 1980-95, the EU lost about 47% of jobs in textiles and 45% in clothing. In textile productivity growth was the main factor, while in clothing this was reinforced by increase of imports. Trends in employment are a consequence of the process of modernisation and the restructuring efforts carried out by European industry. The main reason for the dramatic loss of jobs is the gap in labour costs between EU-15 and Accessing Countries, not to mention Far East competitors. There are however, significant differences also among the EU-15 countries. In 2001, the average value added in clothing, e.g., stood at 25,500 Euro as an average, while it was 9,300 in Portugal and 40,700 in Denmark.

The leather industries employed about 452,000, out of which about 311,000 were in the footwear sector.

Exhibit 1-12: Employment, productivity and labour costs in the clothing industry (NACE 18) in European countries in 2001

Country	Employment		Productivity		Labour Costs	
	People employed	In % of manufacturing total	Value added per person employed	In % of manufacturing average	per employee (1000 Euro)	In % of manufacturing average
BE	10,815	1.6	26,692	40.9	28,072	65.0
DK	4,775	1.0	40,710	81.3	32,480	91.3
DE	74,658	1.0	35,944	65.7	29,028	68.6
EL	17,279	7.8	21,033	53.1	14,100	67.9
ES	134,489	5.1	18,380	46.9	14,720	57.0
FR	96,306	2.4	33,337	65.5	26,612	70.8
IE	3,975	1.6	34,387	26.2	22,079	71.6
IT	306,845	6.3	26,421	63.0	19,497	67.4
LU	42	0.1	29,917	44.2	26,403	61.9
NL	8,001	0.9	27,513	44.6	28,491	74.2
AT	10,572	1.7	28,538	50.1	25,080	64.1
PT	126,285	13.9	9,318	47.4	7,685	61.0
FI	6,657	1.5	29,818	41.8	25,262	66.8
SE	3,514	0.4	25,327	48.5	28,281	71.5
UK	83,198	2.1	38,055	64.6	20,683	55.1
EU-15	887,411	3.1	25,478	49.8	19,044	53.4
Accessing Countries ¹⁾	196,585 ²⁾	6.8	4,288 ²⁾	41.8	3,999 ³⁾	59.8
CY	2,833	7.8	14,861	55.5	11,039	71.6
CZ	64,179	4.7	4,174	43.0		
EE	13,663	11.4	4,443	62.1	3,476	76.0
HU	68,468	9.1	4,123	33.4	3,214	56.0
LV	14,317	9.3	3,674	52.8	2,706	75.8
MT	2,968	9.4	19,306	65.8	11,703	83.1
PL					4,040	58.5
SI					7,585	64.5
SK	30,157	7.3	2,653	35.7	3,082	65.0

1) Year 2000; 2) CY, CZ, EE, HU, LV, MT, SK only; 3) CY, EE, HU, LV, MT, PL, SI, SK only.

Source: Eurostat New Cronos 2003, estimates and calculation by DIW Berlin (2003)

Labour productivity, expressed in value added per employee, is nevertheless quite high in the EU by comparison with other countries. As far as labour productivity is concerned, the EU is more competitive in textile, where advanced technologies can be used more extensively, rather than in clothing and leather where the labour cost advantage can be exploited more. Within the EU, the

highest levels of labour productivity can be found in Nordic countries, with the exception of Italy. Overall, however, even relatively high levels of labour productivity cannot compensate for the huge differentials in terms of wage costs, especially with regards to overseas competitors.

Of the workforce, a particularly large share is female and carries out manual work, in particular in clothing and footwear. Recently, EU industry has experienced some difficulty in attracting highly qualified staff, such as staff with experience in ICT.

Exhibit 1-13: Employment, productivity and labour costs in the leather industry (NACE 19) in European countries in 2001

Country	Employment		Productivity		Labour Costs	
	People employed	In % of manufacturing total	Value added per person employed	In % of manufacturing average	per employee (1000 Euro)	In % of manufacturing average
BE	2,600	0.4	37,909	58.1	28,602	66.2
DE	27,932	0.4	36,030	65.8	28,389	67.1
ES	66,409	2.5	20,661	52.7	15,721	60.9
FR	44,874	1.1	35,408	69.5	25,730	68.4
IE	750	0.3	29,568	22.5	19,853	64.4
IT	203,694	4.2	30,141	71.8	20,396	70.5
NL	3,153	0.3	37,682	61.0	28,307	73.7
AT	6,488	1.0	42,139	74.0	25,330	64.7
PT	67,865	7.5	10,793	54.9	8,341	66.2
FI	2,638	0.6	34,496	48.4	24,690	65.3
SE	1,538	0.2	30,234	57.9	30,032	75.9
UK	19,630	0.5	54,238	92.1	27,456	73.2
other1)	4,738	0.7	23,890	51.1	18,782	60.8
EU-15²⁾	452,309	1.6	28,007	54.7	19,358	54.2
Acceding Countries³⁾	44,700⁴⁾	2.0	4,689⁴⁾	41.9	4,397⁵⁾	64.8
CY	694	1.9	18,300	68.4	13,343	86.6
CZ	20,502	1.5	4,336	44.6		
HU	22,636	3.0	4,170	33.7	3,510	61.1
MT	868	2.7	15,668	53.4	10,551	74.9
PL					4,600	66.6

1) DK, EL; 2) Luxembourg = 0; 3) Year 2000; 4) CY, CZ, HU, MT only; 5) CY, HU, MT, PL only.

Source: Eurostat New Cronos 2003, estimates and calculation by DIW Berlin (2003)

1.3 International trends and challenges

Due to increased imports from non-EU countries, weak demand and price pressures, the sector has undergone major changes including reduction of workforce, increase of productivity and re-orientation of production. The internationalisation of the production is also linked to a general increase in concentration in the clothing and footwear distribution sector.

To face global competition companies will have to engage in a continuous process of innovation and modernisation and deal with a number of challenges. In terms of the process of innovation and modernisation, the main issues are: product innovation, modernisation of organisation structure and the speed up of technologies. Main challenges to cope with will be: increasing competition and changes in the distribution system, evolution of international trade, evolution of markets and consumers.

Innovation

The EU is a world leader in developing new products such as technical textiles. Fibre innovation is fundamental in order to increase the technological content of final products, to keep competitive advantage in the international scenario, to anticipate or meet the end users' need and, for suppliers, to rebalance the bargaining power with respect to downstream industries and distributors. The development of high-technology fibres has become an important competitive factor in Europe, accounting for about 27.6% of European textile production.

For companies active in clothing and footwear, the main challenge is the capability to continuously innovate products and differentiate brand.

ICT take-up

Relevance and diffusion of e-business will be fully analysed in the following chapter. It is nevertheless worth reminding that the gap in ICT adoption and usage with respect to other sectors as well the delay of firms in recognising the role ICT in everyday activities are becoming risk factors for European textile, clothing and footwear firms across all size bands.

Given the varied sector composition in terms of number, size, specialisation and typology, it is difficult to generalise trends. It can, however, be expected that all sector firms will tend to maximise the values coming from the control on final customers and to leverage on the customer even in the management of partners' and providers' relationships. It can be expected that, besides ICT investments aimed at reducing transaction costs, big efforts will address the area of customer monitoring.

Competition, concentration and blurring boundaries between manufacturing and distribution

Quite a strong process of concentration is taking place both in manufacturing and distribution activities. This process is the result of rationalisation of organisation structures and of mergers and acquisitions. It is also related to a profound restructuring of the distribution system which has given more bargaining power to distributors and put pressure on prices.

Major distribution chains are tending to concentrate and to internationalise orders, but they also tend to be more demanding in terms of quality and service (more collections per year, speed of restocking and just-in-time working, pressures on pricing and quality, labelling by the producers, etc.). In addition to this, retailers are also broadening their range of activity. They are developing strong links with global suppliers, particularly in low labour cost countries. They increasingly push their own brands, they are price-competitive and very innovative in terms of product and service (continuous restocking).

Some suppliers have followed an offensive strategy, extending their distribution network, developing their marketing on an European scale, increasing productive capacity or restructuring the productive apparatus, or modifying their human resources policy (e.g. more highly skilled operators). Mergers and acquisitions and vertical integration, particularly towards distribution networks have been increasingly taking place over the past years. Acquisitions have been more common in clothing than in textile and there has been also a trend of diversification towards the making and marketing of accessories other than shoes (such as glasses, perfumes, jewellery) i.e. the so-called "*total look*". Through M&A companies pursue the objective of increasing profitability of investments in brands and distribution networks. In addition, many are moving to higher value added and technical textiles.

Successful companies in this sector are increasingly paying attention at strategic issues such as:

- further control on fixed costs
- optimisation of production processes with the aim of reducing time to market and lead time
- IT systems able to integrate the whole supply chain: from the point of sale (POS, bar code) to order management and logistics

- selection of suppliers in the framework of long-term strategies. The point is no longer (or not only) the minimisation of direct production costs but more and more the minimisation of the overall supply chain cost, including standardised and agreed mechanisms able to evaluate quality and timing performances

Liberalisation and internationalisation

In 2005, the process of trade liberalisation, started in 1995 with the signing of the WTO agreement on Textile and Clothing (ATC), will be completed. As a result of this, quantitative restrictions in exporting to EU (and US) will no longer exist and lower labour cost countries will fully exert their competitive pressure. The possibility for EU to remain a global player will depend on the capability to cope with challenges related to innovation, focus on high quality and fashion and productivity.

As a result of the liberalisation process, trends towards internationalisation and relocation of production and a more sophisticated diversification of supply sources will take place.

Consumers

It has already been highlighted that the market is increasingly pulled by the evolution of demand. Competitiveness depends on the consumer side and on the requirements of distribution. Demand trends are difficult to generalise at a European level, given that national culture and attitudes vary remarkably. There are nevertheless some macro trends which, to a different extent, can be ascribed to European consumers:

They spend less time on shopping, buy less items per single transaction and try to focus on products (such as accessories) and channels (alternative ones, such as outlets) which allow them to actualise look and style without spending much money. They appreciate new distribution channels (specialised stores, single-brand shops, outlets) with respect to traditional retail. They are increasingly oriented towards more informal life styles. Sportswear is being favoured versus more classic styles.

A concept which is increasingly used to define this market is "*mass customisation*". In summary: extreme fragmentation and diversification of purchases, price-sensitivity and low loyalty, request for differentiation.

2 The use of ICT and e-business in 2003/04

2.1 Introduction

As it has already been described, the production and distribution cycle in these industries is quite complex and not straightforward; instead it is based on backward and forward³ interchanges involving various players, among which are numerous micro and small enterprises.

All phases are characterised by high information intensity, although the physical process remains central. The fragmentation along the value chain has determined the development of ICT tools for the management of the various production processes. This resulted in the so-called “islands of activity” which have seen very little degree of integration so far.

To gain competitive advantage at value chain level, it is necessary to integrate, forward and backward, different technologies and applications in order to accelerate and optimise information flow. Advantages expected by the introduction of e-business and related speed up of information flows are:

- to shorten the development cycle by co-ordinating all information on marketing forecasts, design, production scheduling, dispatch and delivery, eliminating “hand-over” time between each stage of the process
- to improve links with all existing manufacturing operations – especially if outsourced – in order to shorten lead times and to save on administration and management costs. These manufacturing operations will increasingly be small batch ones requiring efficient and rapid management
- to capture and analyse information about distribution channels and final customers in order to adjust their marketing and production strategies

Activities which may bring more advantages are: co-design and related assistance, negotiation, administration management of the relation between fabric makers and their customers. Great efforts need to be made in areas such as technical production specifications, quality control, remote control and transmission of designs – modelling, samples – and process requirements. 3D applications in design and virtual catalogues are sector-specific applications which may bring relevant advantages.

To gain full benefits from e-business, it is also necessary to develop communication standards (beyond EDI and XML), particularly for identification and tracking purpose. The major transmission vehicle for e-business in this sector is likely to be the value chain rather than companies’ individual initiatives.

Barriers to e-business deployment

This industry shows a set of characteristics that have been delaying the process of incorporating e-business in everyday practice:

- the average micro/small size of the vast majority of the operators and the very limited degree of computerisation
- the textile and clothing industry is characterised by a very conservative culture. Despite a tradition of long-term partnerships, many of its members are reluctant to pass on information and to open up communication processes
- a broad group of firms is rather cautious and is implementing stand-alone ICT solutions. The laggard firms – many of them micro-enterprises – continue to rely on traditional methods even when they move towards closer co-operation with their partners

³ The cycle is initiated by design and production of samples, followed by sales, purchasing of raw materials production and distribution

- diversity of Information Systems (as for typology and architecture) and diverse quality of access to ICT which may inhibit the process of integration

The winners in this process of change are the companies that are embracing the new ICT in co-operation with their partners and that are open to new enterprises. This presents opportunities for smaller companies that can use ICT to increase their flexibility and responsiveness. The evidence shows, however, that in spite of the presence of some front-runners in the European industry, many companies have yet to realise the importance of ICT. Industry associations and initiatives as well as regional development centres have an important role to play in this transition.

2.2 E-business indicators – the statistical picture

Information presented in this section is predominantly based on the e-Business Surveys of the *e-Business W@tch*. The first survey was conducted in April 2002 and covered more than 9,000 enterprises from 15 sectors and all EU Member States. The 2003 survey was conducted in two waves. In March 2003, about 3,500 enterprises from seven sectors and five countries (France, Germany, Italy, Spain and the UK) were interviewed about their use of ICT and e-business. The second wave of interviews (about 7,000) was conducted in October and November 2003. It added new sectors and extended the regional coverage to the EEA and Acceding Countries.

In the second wave, some new indicators were introduced. Thus, although the main parts of the questionnaires used in the two waves were the same, not all information is available for all sectors or countries, depending on whether the survey of this particular sector in a country took place in the spring or autumn wave of the 2003 survey. The footnotes of the exhibits show the time, base, number of observations and weighting schemes for data reported.

More information about the methodology of the survey (definitions, sampling, weighting principles) and about the coverage of sectors and countries is available in the Annex to this report and on the website of the *e-Business W@tch* at www.ebusiness-watch.org.

2.2.1 Infrastructure and skills development

ICT infrastructure in the company

The usage of physical ICT infrastructure in the textile, clothing and footwear industries is well below average. 74% of enterprises representing 91% of employment use computers, the “all sector” percentages being respectively 89% and 95%. About one quarter of micro enterprises do not have any access to ICT.

As regard more sophisticated ICT, this sector shows even more relevant gaps. Only 17% of enterprises representing 50% of employment have a LAN, and the usage of WAN is limited only to a few large companies. Both numbers are significantly lower than the average of all sectors studied.

Looking at the usage by firms from different countries, textile companies from EU countries report usage of ICT above the average, with the relevant exception of Italy. Despite being the main producer in these industries, it lags behind in the diffusion of physical network infrastructure. Among the Acceding Countries, firms in Estonia and Slovakia are close to those from the sector in the advanced EU-15 countries, while the diffusion among companies from Latvia and Poland is lower.

This picture clearly mirrors the composition of the sector and in particular the large share of micro and small enterprises, many of which have the characteristics of handcraft workshops rather than companies playing on the market. Being production-oriented, often for very few – if not single – customers, providing them with input sources and determining production timing and flows, these

companies have little investment capacity and also limited needs: a stand-alone basic system is enough to suit their requirements.

Remote access is clearly limited within larger companies where it is available to 61% of employees. Wireless LAN have been adopted only within a few large players and are available only to 29% of employees.

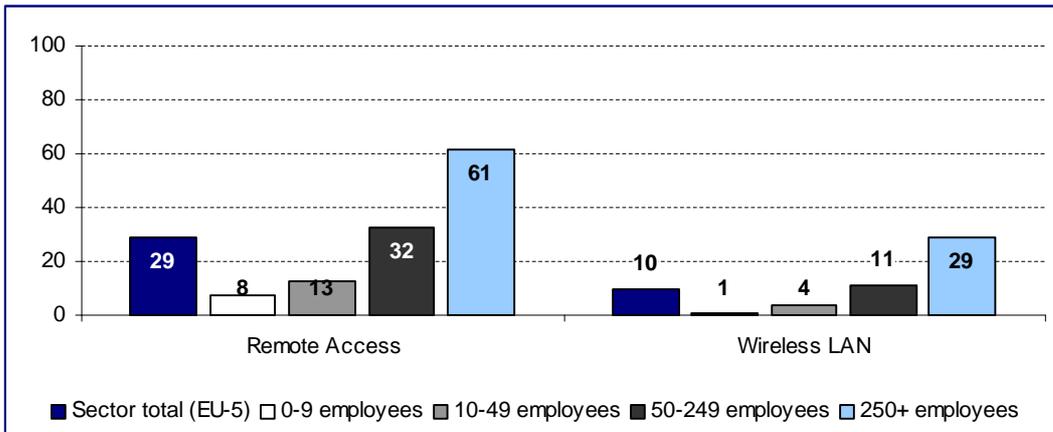
Exhibit 2-1: Use of physical network infrastructure in the textile, clothing and footwear industries (2003)

	Use computers	Local Area Network	Wide Area Network	Remote Access*	Wireless LAN
Sector total (EU-5)					
% of employment	91	50	17	29	10
% of enterprises	74	17	2	10	2
0-9 employees	70	11	0	8	1
10-49 employees	90	30	8	13	4
50-249 employees	99	69	21	32	11
250+ employees	100	95	45	61	29
All (9) sectors (EU-5)					
% of employment	95	61	29	39	n.a.
% of enterprises	89	32	5	18	n.a.
Sector by country (% of employment)					
DE Germany	99	81	25	51	30
EL Greece	99	61	17	19	9
ES Spain	93	46	16	12	7
FR France	94	52	22	29	6
IT Italy	85	34	10	23	4
NL Netherlands	97	57	31	56	9
FI Finland	97	59	19	53	12
UK United Kingdom	95	73	29	43	17
EE Estonia	97	77	36	16	22
LV Latvia	87	72	16	20	15
PL Poland	83	31	6	18	5
SK Slovakia	99	58	6	25	12
NO Norway	100	64	36	67	7

Base: all enterprises. EU-5 = DE, ES, FR, IT, UK. N=501 for EU-5 sector total and 50-100 per country. Except *: enterprises using computer N=455. Weighting: Figures for size-bands in % of enterprises. Figures for countries are weighted by employment ("enterprises comprising ...% of employees"). Reporting period: November 2003.

Source: *e-Business W@tch* (2003/04)

Exhibit 2-2: Enterprises enabling remote access to their computer system and enterprises using a Wireless LAN (2003)



Base: all enterprises. EU-5 = DE, ES, FR, IT, UK. N=501 for EU-5 sector total.

Weighting: Figures for size-bands in % of enterprises. Figure for "Sector total" is weighted by employment ("enterprises comprising ...% of employees"). Reporting period: November 2003.

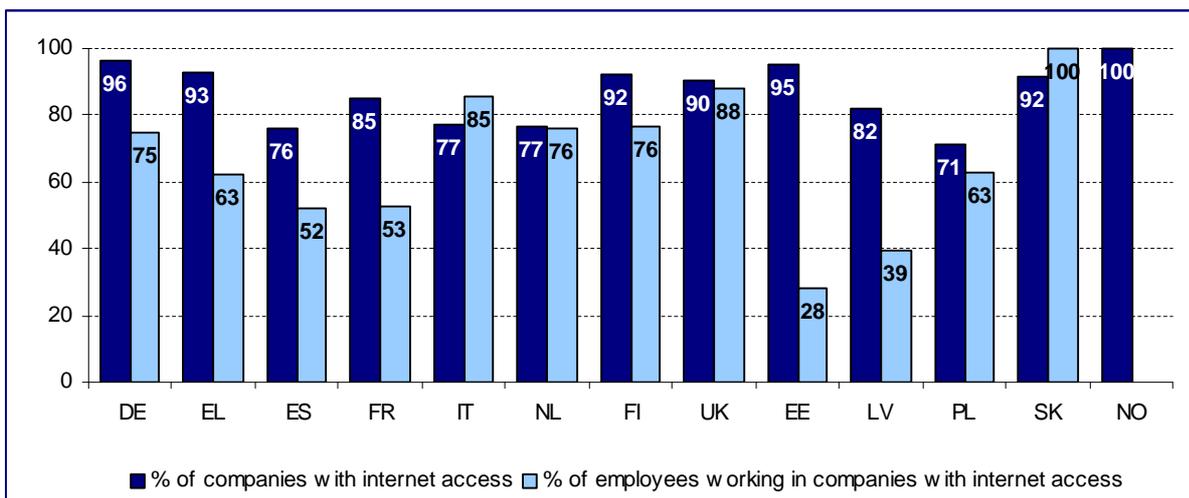
Source: e-Business W@tch (2003/04)

Internet access and use of basic Internet applications

These indicators confirm the gap between this sector and the average of the nine sectors compared: Internet is far from being a standard technology. In EU-5, only 58% of enterprises representing 82% of employment have access to Internet. The use of e-mail and the WWW is limited to less than half the enterprises. Overall, nearly 20% of employees in this sector do not have access to electronic means of communication.

Not surprisingly, the usage of Internet applications mirrors the diffusion of computers in the sector across countries and size classes. Companies from the Acceding Countries are in line with those from the EU with the exception of those from Poland.

Exhibit 2-3: Companies having Internet access (2003)



Base: all enterprises (N ~ 50-100 per country). Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

Exhibit 2-4: Internet access and use of basic internet applications (2003)

	Have access to the internet	Use e-mail	Use the WWW
Sector total (EU-5)			
% of employment	82	77	68
% of enterprises	58	48	40
0-9 employees	52	41	33
10-49 employees	79	68	61
50-249 employees	98	97	83
250+ employees	97	97	90
All (9) sectors (EU-5)			
% of employment	88	84	77
% of enterprises	76	68	58
Sector by country (% of employment)			
DE Germany	96	95	91
EL Greece	93	86	64
ES Spain	76	70	45
FR France	85	82	81
IT Italy	77	68	59
NL Netherlands	77	74	68
FI Finland	92	91	82
UK United Kingdom	90	88	87
EE Estonia	95	94	95
LV Latvia	82	79	79
PL Poland	71	64	60
SK Slovakia	92	91	90
NO Norway	100	100	100

Base: all enterprises. EU-5 = DE, ES, FR, IT, UK. N=501 for EU-5 sector total and 50-100 per country.

Weighting: Figures for size-bands in % of enterprises. Figures for countries are weighted by employment ("enterprises comprising ...% of employees"). Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

Broadband Internet access is not common in the textile, clothing and footwear industries. Of those firms that have Internet access, only 7% of enterprises representing 22% of employees have Internet access with more than 2Mbps/s; this is much lower than the all sector average. The low level of broadband usage depend on the preferred access technologies: 41% of enterprises still use analogue dial-up modem (the all sector average stands at 27%), 25% use ISDN and 27% DSL.

There is a clear distinction between size classes; however, even larger companies can rely on broadband in the minority of cases (44%). Such a quality of Internet connections seems to indicate that they are used mainly for accessing the web while not being suitable for data transmission and exchange.

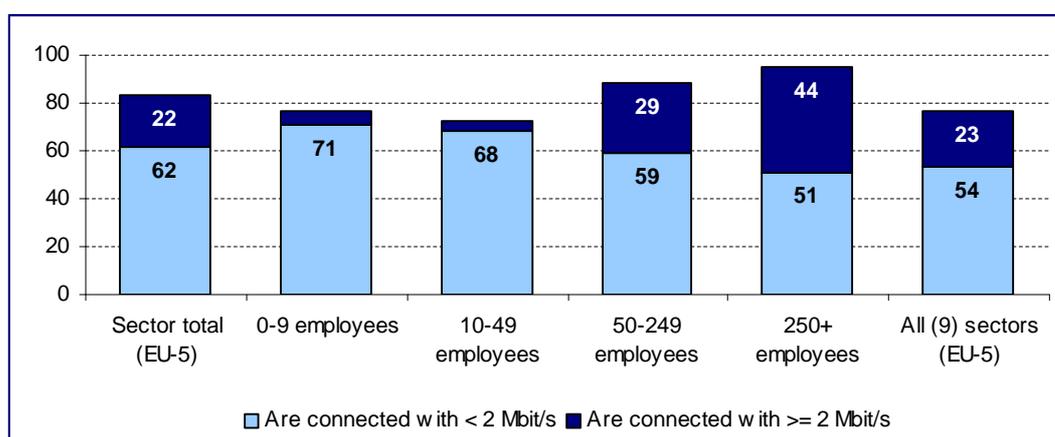
Exhibit 2-5: Quality of internet connection used by companies (2003)

	Still use analogue dial-up modem	Are connected with <2 Mbit/s	Are connected with >= 2 Mbit/s
Sector total (EU-5)			
% of employment	23	62	22
% of enterprises	41	69	7
0-9 employees	44	71	6
10-49 employees	37	68	4
50-249 employees	14	59	29
250+ employees	4	51	44
All (9) sectors (EU-5)			
% of employment	16	54	31
% of enterprises	27	64	15
Sector by country (% of employment)			
DE Germany	2	59	35
EL Greece	24	78	11
ES Spain	23	49	25
FR France	27	65	22
IT Italy	30	69	12
NL Netherlands	16	60	28
FI Finland	12	36	45
UK United Kingdom	22	55	32
EE Estonia	8	52	12
LV Latvia	7	86	2
PL Poland	48	77	16
SK Slovakia	41	84	13
NO Norway	4	69	20

Base: enterprises connected to the internet. EU-5 = DE, ES, FR, IT, UK. N=413 for EU-5 sector total and 50-100 per country. Weighting: Figures for size-bands in % of enterprises. Figures for countries are weighted by employment ("enterprises comprising ...% of employees"). Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

Exhibit 2-6: Quality of internet connection by size-band (2003)



Base: enterprises connected to the internet. EU-5 = DE, ES, FR, IT, UK. N=413 for EU-5 sector total. Weighting: Figures for size-bands in % of enterprises. Figures for "Sector total" and "All sectors" are weighted by employment ("enterprises comprising ...% of employees"). Reporting period: November 2003.

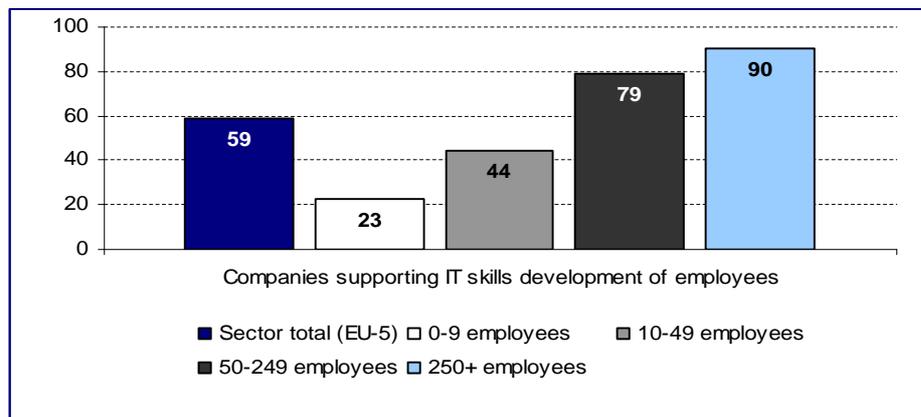
Source: e-Business W@tch (2003/04)

ICT skills – demand and supply

The interviewees were asked if their company supports employees in acquiring IT and networking skills development. Three options were offered: in-house ICT training, ICT training by third parties, usage of working time for learning activities. 59% of employees are offered this kind of support. This figure is well below the all sector average standing at 77%. Again it is only larger companies which offer these opportunities to the vast majority of employees.

In addition, there is a cultural gap between companies from different countries: a large group of – mainly Nordic – countries where textile companies tend to be more aware of the benefits associated with ICT skills development and fully support the related enhancement. The textile sectors in Southern EU countries, Estonia, Slovakia and Latvia follow, while firms in Italy and Poland tend to lag behind.

Exhibit 2-7: Companies supporting any kind of IT skills development (2003)



Base: all enterprises. EU-5 = DE, ES, FR, IT, UK. N=500 for EU-5 sector total.

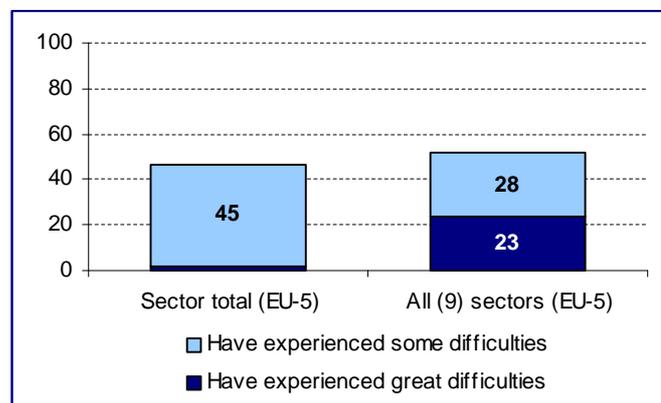
Weighting: Figures for size-bands in % of enterprises. Figure for "Sector total" is weighted by employment ("enterprises comprising ...% of employees"). Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

Only 2% of enterprises had recruited or tried to recruit staff with ICT skills in the 12 months preceding the survey. 12% of enterprises, representing 26% of employees, have outsourced at least parts of their ICT activities. It appears that whenever smaller enterprise have some ICT activity, they tend to externalise it. The picture of recruitment indicates that there is little working mobility and very limited increase in ICT employment within this sector. Small enterprises in particular tend to rely on existing staff, if any, for ICT support. Firms in Germany and Latvia show the most dynamic demand.

Exhibit 2-8: Companies which experienced difficulties in recruiting IT staff (2003)

Of the limited sample of companies which have recruited or tried to recruit specialised staff, only a limited share experienced severe difficulties. With respect to the sector average, indicating that 23% of companies have encountered great difficulties, it seems that in this sector the weak demand for IT specialists is making qualified personnel more available than in other sectors.



Base: enterprises having recruited or tried to recruit specialists. EU-5 = DE, ES, FR, IT, UK. N=65 for EU-5 sector total. In % of enterprises. Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

Exhibit 2-9: Recruitment activities, expected qualifications and outsourcing of IT activities in the textile, clothing and footwear industries (2003)

	Have made recruitment efforts during past 12 months period	Of those expected: Academic degree (Master, PhD) *	Of those expected: IT certificate *	Have outsourced some of their IT activities
Sector total (EU-5)				
% of employment	13	27	66	26
% of enterprises	2	19	42	12
0-9 employees	1	0	0	10
10-49 employees	6	22	56	19
50-249 employees	17	34	60	36
250+ employees	32	25	74	41
All (9) Sectors (EU-5)				
% of employment	22	0	0	0
% of enterprises	9	0	0	0

Base: all enterprises N=501/ *enterprises having made recruitment efforts. EU-5 = DE, ES, FR, IT, UK. N=65 for EU-5 sector total and 50-100 per country. Weighting: Figures for size-bands in % of enterprises. Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

2.2.2 Internal business processes

Data about the diffusion of e-business solutions and ICT to support internal process indicate a limited horizontal integration of ICT within companies.

The fragmentation of the industry, in terms of number of different players along the value chain, has determined the development of ICT tools for the management of the various production processes. This resulted in the so-called “islands of activity” which prove to be difficult and costly to integrate and consequently are not likely to be connected in the short term, at least among the smallest firms. Most of these operation processes require a significant amount of personnel and labour to operate, thus imposing a significant barrier to greater ICT diffusion.

Knowledge management and e-learning

Exhibit 2-10: Knowledge management and e-learning (2003)

	Use an intranet	Use a special knowledge management application	Use an e-learning application
Sector total (EU-5)			
% of employment	32	5	3
% of enterprises	10	1	1
0-9 employees	5	0	1
10-49 employees	24	4	0
50-249 employees	43	8	4
250+ employees	55	11	7
All (9) Sectors (EU-5)			
% of employment	45	10	13
% of enterprises	21	5	5

Base: all enterprises. EU-5 = DE, ES, FR, IT, UK. N=501 for EU-5 sector total and 50-100 per country. Weighting: Figures for size-bands in % of enterprises. Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

The usage of Intranet and knowledge management applications is not common practice in this sector. The survey results depict a scenario where information flows and access to knowledge within

companies are carried out electronically in the minority of cases. Whereas Intranets are available to 32% of employees in textile, clothing and footwear, mostly working in larger enterprises, knowledge management and e-learning applications are not yet part of the culture of this sector.

Use of online technologies to support internal business processes

Exhibit 2-11: Use of online technologies to support internal business processes in the textile, clothing and footwear industries (2003)

	To share documents internally / for collaborative work	To automate travel reimbursement	To track working hours / production time	To support human resources management
Sector total (EU-5)				
% of employment	30	7	15	13
% of enterprises	7	1	3	3
0-9 employees	4	0	1	1
10-49 employees	13	1	11	8
50-249 employees	41	6	20	19
250+ employees	67	25	29	26
All (9) sectors (EU-5)				
% of employment	40	11	20	21
% of enterprises	22	3	5	5
Sector by country (% of employment)				
DE Germany	44	13	35	19
EL Greece	57	3	32	27
ES Spain	23	3	17	19
FR France	43	6	12	7
IT Italy	19	4	10	8
NL Netherlands	43	3	42	29
FI Finland	46	22	44	49
UK United Kingdom	45	18	14	23
EE Estonia	54	12	43	29
LV Latvia	21	0	47	16
PL Poland	29	3	1	1
SK Slovakia	41	0	15	14
NO Norway	38	4	4	32

Base: all enterprises. EU-5 = DE, ES, FR, IT, UK. N=501 for EU-5 sector total and 50-100 per country. Weighting: Figures for size-bands in % of enterprises. Figures for countries are weighted by employment ("enterprises comprising ...% of employees"). Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

The use of e-business solutions might significantly enhance the efficiency of internal processes in a sector where the production process is complex and organised in a number of different activities. Studies on this topic⁴ show that information flows are relevant and critical in all phases. Most of the companies, however, are concentrated on single apportioned phases rather than being integrated. The need (and the capacity) for integration is therefore shifted more at value chain level than inside single businesses. Wherever internal information flows are relevant, they are currently carried out using traditional instruments such as telephone and fax – only e-mail has been recently included as a more sophisticated mean of information. Only larger enterprise are comparatively advanced in the usage of online technologies to support internal processes

⁴ see OECD, EBIP project textile-Clothing sector in Italy, 2001

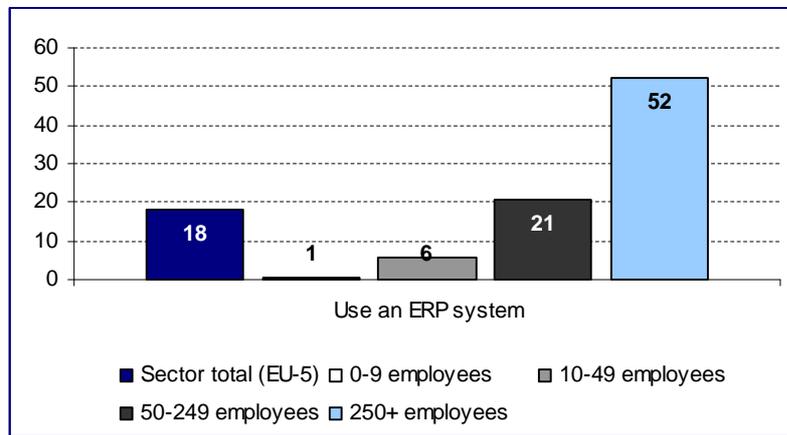
Looking at more advanced applications, such as the automation of travel reimbursements, the tracking of working hours and human resources management, survey results indicate that these applications are hardly used yet, except by textile firms in some countries, such as Germany, Netherlands, the UK, and – rather unexpectedly – Greece.

Use of ERP systems

Use of ERP is, not surprisingly, limited to larger enterprises. 52% of firms with more than 250 employees and 21% of medium-sized companies have adopted an ERP system. Overall, companies representing 18% of employment in this sector can rely on such systems.

Very few companies have implemented ERP systems to integrate their information systems with those of customers. On the contrary, information is generally still received on traditional supports and inserted manually into the system. The low percentage of companies currently using ERP is due, not only to their size and limited investments capacity, but also to the scarce availability of solutions specifically developed for small enterprises.

Exhibit 2-12: Companies using an ERP (enterprise resource planning) system (2003)



Base: all enterprises. EU-5 = DE, ES, FR, IT, UK. N=501 for EU-5 sector total.

Weighting: Figures for size-bands in % of enterprises. Figure for "Sector total" is weighted by employment ("enterprises comprising ...% of employees"). Reporting period: November 2003.

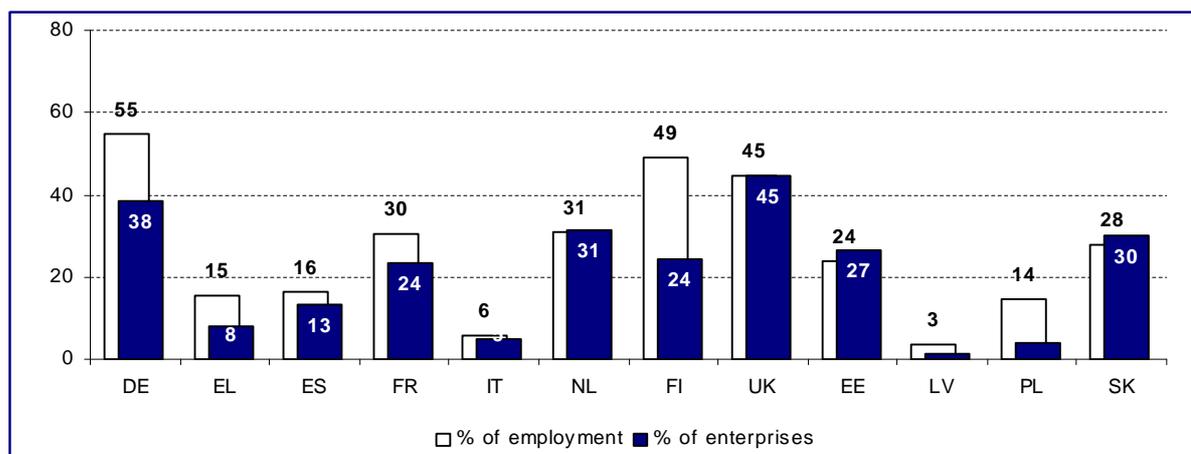
Source: e-Business W@tch (2003/04)

2.2.3 Procurement processes and supply chain management

Buy-side electronic commerce activities

Efficient management of procurement is a fundamental activity along a sector value chain which is very complex and fragmented. Online procurement can be carried out regardless of real integration without suppliers; it is often the first step towards the usage of the ICT in support of external processes. For this reason, online procurement is observed, at an all sector average, in about one third of the EU-5 enterprise representing 46% of employment. The textile, clothing and footwear industry stands at about half these percentages – even larger companies rely on online procurement in only 33% of the cases. Significant differences exist among firms from different countries, though: In Germany, the UK and Norway firms are more likely to use e-procurement than in other countries. Once companies decide to carry out online procurement, they tend to trade both MRO and direct production goods.

Exhibit 2-13: Companies from the textile, clothing and footwear industries making online purchases by country (2003)



Base: all enterprises. N ~ 50-100 per country. Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

Exhibit 2-14: Online purchasing activities by companies (2003)

	Make online purchases	Online purchase of MRO* goods *	Online purchase of direct production goods *
Sector total (EU-5)			
% of employment	23	62	40
% of enterprises	14	40	39
0-9 employees	14	37	38
10-49 employees	11	45	46
50-249 employees	35	64	39
250+ employees	33	77	36
All (9) sectors (EU-5)			
% of employment	46	62	49
% of enterprises	31	60	53
Sector by country (% of employment)			
DE Germany	38	79	66
EL Greece	8	25	49
ES Spain	13	41	41
FR France	24	19	30
IT Italy	5		
NL Netherlands	31	50	86
FI Finland	24	65	91
UK United Kingdom	45	58	54
EE Estonia	27	16	68
LV Latvia	1	100	50
PL Poland	4	10	88
SK Slovakia	30	52	48
NO Norway	43	50	72

* Maintenance, repair and operations goods (indirect production goods)

Base: all enterprises. EU-5 = DE, ES, FR, IT, UK. N=501 for EU-5 sector total and 50-100 per country. Except * Base= Enterprises procuring online N=114. Weighting: Figures for size-bands in % of enterprises. Figures for countries are weighted by employment ("enterprises comprising ...% of employees"). Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

Types and relative importance of online purchases by companies

The largest share of online purchasing is carried out through the supplier's website. B2B marketplaces are used by 11 % of firms, well below the sector average. As for web presence, although there has been a proliferation of initiatives, there are still relevant barriers to a real widespread presence, among these: poor content, weak systems and users' educational background (language barriers seem to be a major obstacle in this sector).

Business example

Wool.com

Woolmark is a global company, owned by Australian woolgrowers with the mission of improving demand for their wool and commercialising their investments in branding and innovation. They set up wool.com, an industry portal. They are working to make their site available in a number of languages, not just English, having recognised this as an important feature for fostering actual usage in B2B relationships

Source: articles, <http://www.wool.com>

Not surprisingly, survey data indicate that a very limited share of medium-sized and large companies have integrated their ICT systems with those of their suppliers through an extranet for placing orders. Only 6% of enterprises have adopted an extranet (22% is the all sector average and the share of those adopting EDI is close to zero)

These findings give clear evidence of the need for a better vertical integration in order to exploit the benefits from B2B e-business. This is true not only for micro and small businesses – large players lag behind in this respect too.

In order to develop online procurement, intelligent concepts and technologies based on sector expertise would be needed to permit both highly integrated personalised systems for crucial suppliers and customers (via EDI, extranet) as well as non-strategic activities like procurement of standards good or sales of overstocks.

For the vast majority of firms (62% of cases), the share of online purchases on total purchases is less than 5%.

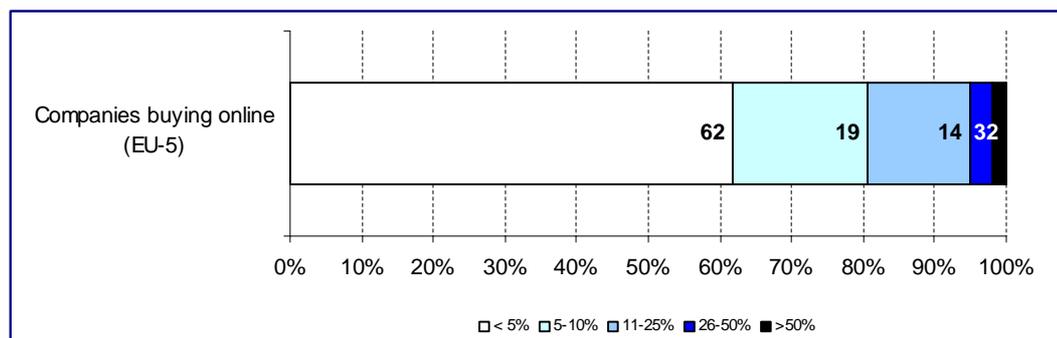
Exhibit 2-15: Distribution platforms and protocols used for online purchases in the textile, clothing and footwear industries (2003)

	Website of suppliers	B2B Marketplaces	Extranet	EDI	Mobile commerce (e.g. WAP)
Sector total (EU-5)					
% of employment	79	19	25	2	11
% of enterprises	56	11	6	0	5
0-9 employees	49	10	3	0	1
10-49 employees	79	9	12	0	24
50-249 employees	88	24	33	4	12
250+ employees	76	22	33	0	4
All (9) sectors (EU-5)					
% of employment	88	24	28	6	18
% of enterprises	85	21	22	3	18

Base: enterprises making online purchases. EU-5 = DE, ES, FR, IT, UK. N=114 for EU-5 sector total. Weighting: Figures for size-bands in % of enterprises. Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

Exhibit 2-16: Share of online purchases (all platforms) as % of total purchases in the textile, clothing and footwear industries (2003)



Base: enterprises making online purchases. EU-5 = DE, ES, FR, IT, UK. N=113 In % of enterprises.
Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

Business process integration in e-commerce (buy-side)

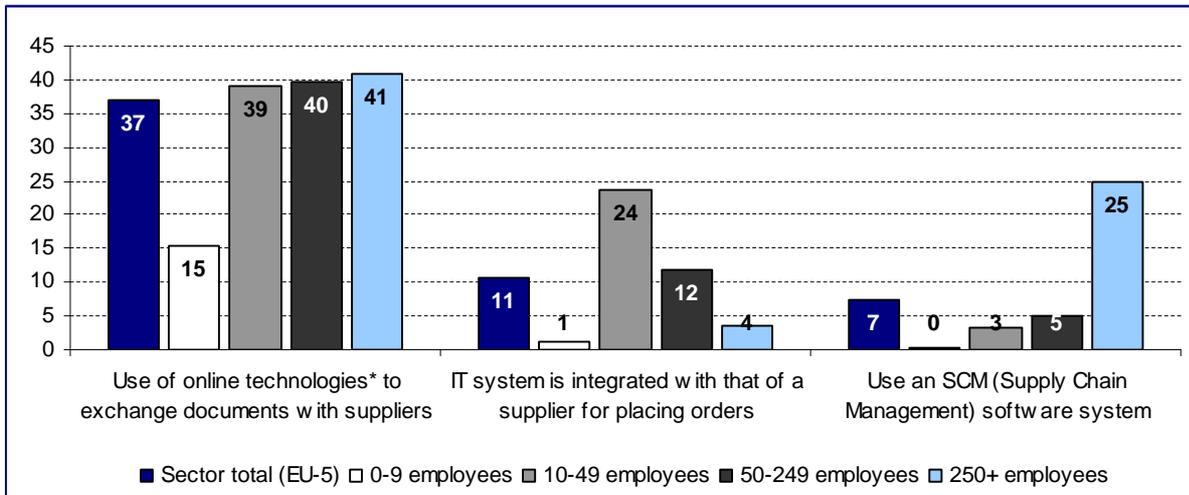
Exhibit 2-17: ICT integration with suppliers (2003)

	Use of online technologies* to exchange documents with suppliers	ICT system is integrated with that of a supplier for placing orders	Use an SCM (Supply Chain Management) system
Sector total (EU-5)			
% of employment	37	11	7
% of enterprises	23	5	1
0-9 employees	15	1	0
10-49 employees	39	24	3
50-249 employees	40	12	5
250+ employees	41	4	25
All (9) sectors (EU-5)	42	18	6
% of employment	42	18	6
% of enterprises	32	18	2
Sector by country (% of employment)			
DE Germany	35	9	11
EL Greece	41	7	7
ES Spain	34	19	10
FR France	46	18	6
IT Italy	31	0	3
NL Netherlands	37	40	1
FI Finland	48	6	0
UK United Kingdom	50	8	16
EE Estonia	52	60	11
LV Latvia	44	50	2
PL Poland	35	0	0
SK Slovakia	26	6	0
NO Norway	34	0	0

for base and weighting: see notes in Exh. 2-18

Source: e-Business W@tch (2003/04)

Exhibit 2-18: ICT integration with suppliers (2003)



* other than free text e-mail

Base: Use of online technologies to exchange documents = enterprises with Internet access. N=413

Base: ICT system integrated with suppliers= enterprises procuring online. N=114

Base: Use a SCM= all enterprises. EU-5 = DE, ES, FR, IT, UK. N=501 for EU-5 sector total and 50-100 per country.

Weighting: Figures for size-bands in % of enterprises. Figures for countries are weighted by employment ("enterprises comprising ...% of employees"). Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

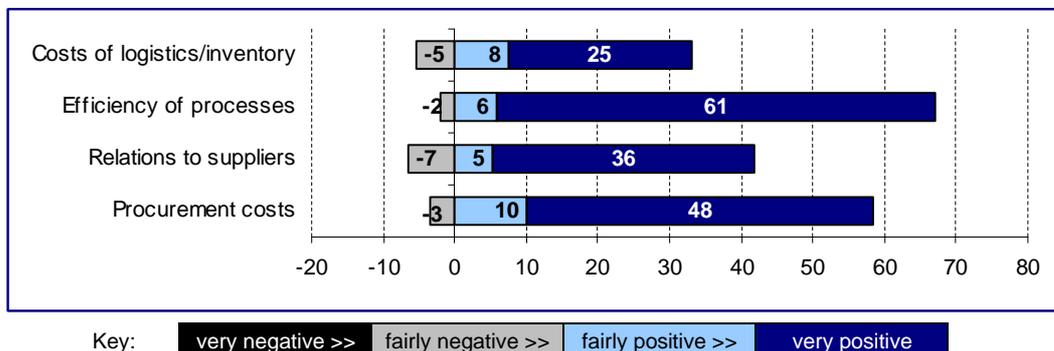
Survey data presented in the following table confirm that textile, clothing and footwear firms are far from being integrated in their supply chain. The exchange of documents with suppliers is carried out electronically by only 23% of enterprises (41% of larger ones). Integration of ICT systems, not to mention SCM, is hardly ever practised in the sector.

Perceived impacts of purchasing online

Enterprises in this sector experience the most positive effects on the efficiency of internal processes and procurement costs. For those companies which deal with a high number of transactions and need to be very price-competitive, even a limited increase in efficiency or saving on costs can be extremely effective. In a few cases, on line procurements seems to have affected the relationship with suppliers.

At an all sector average, online procurement resulted in a decrease of the number of suppliers in 9% of the enterprises; in this sector the effect is much more limited (3%).

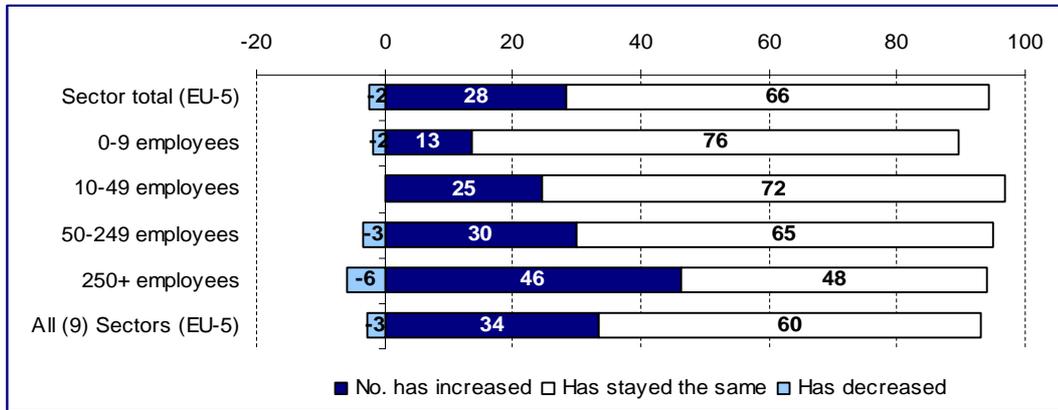
Exhibit 2-19: Perceived effects of purchasing online in the textile, clothing and footwear industries (2003)



Base: enterprises making online purchases, excluding DK. EU-5 = DE, ES, FR, IT, UK. N=60. In % of enterprises. Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

Exhibit 2-20: Reported effect of e-purchasing on the number of suppliers (2003)



Base: enterprises making online purchases. EU-5 = DE, ES, FR, IT, UK. N=114. In % of enterprises. Reporting period: November 2003.

Source: *e-Business W@tch* (2003/04)

2.2.4 Marketing and sales

A website on the Internet is a very simple way to address customers and provide information about products. Textile, clothing and footwear companies are less present on the web than companies from other sectors: only 22% of enterprises (about 80% among the largest ones). Only a minority of these make online sales. Even for firms successfully pursuing the strategy of selling via web, the share of online shares on total ones is less than 5% for most of the companies. This channel is complementary and relies upon brand and services shared with the traditional selling organisation.

Business example :

Mangoshop

Mangoshop.com is an example of successful e-commerce initiative as part of a multi-channel strategy. Mango is the second largest Spanish exporter of garments. It has an overall turnover of 1.1bn Euro, (+14% 2003/02).

With approximately 60,000 registered customers, Mangoshop receives and processes the dispatch of more than 1,700 orders every month; the turnover in 2003 was 1.8m Euro (+60% comparing 2003/02). The virtual store has 277,000 visitors per month. Products are the same as the ones sold in stores. Relying on a well-known brand, high level of service and competitive prices, the e-commerce formula is attracting customers in northern countries besides Spain.

Source: articles, mango.com

When looking at data about sales, it has to be borne in mind that for a large share of businesses in this sector, customers are not commercial/intermediaries and distribution channels buying finished products, but other business for which they perform part of the production activity. The relationships and transactions among these players are still mainly carried out in a traditional way. Although companies may recognise the potential of networking, the migration towards web-based sales activities hasn't really taken place.

In addition to this, it has to be highlighted that in all phases of the textile, clothing and footwear value chain the physical characteristics of the products are of utmost importance. It is not only a matter of cultural attitude, there also implications concerning the quality control of the features of the exchanged good (being yarn, fabric or finished goods) This aspect is especially relevant whenever the buyer is a final customer with no access to tools currently used to control quality in B2B relations.

Sell-side electronic commerce activities

Exhibit 2-21: Online marketing and e-commerce activities (2003)

	Have a website on the internet	Make online sales
Sector total (EU-5)		
% of employment	47	5
% of enterprises	22	3
0-9 employees	20	3
10-49 employees	24	1
50-249 employees	71	6
250+ employees	79	14
All (9) sectors (EU-5)		
% of employment	66	16
% of enterprises	35	9
Sector by country (% of employment)		
DE Germany	72	14
EL Greece	56	3
ES Spain	39	4
FR France	50	8
IT Italy	36	1
NL Netherlands	76	10
FI Finland	76	34
UK United Kingdom	64	9
EE Estonia	69	3
LV Latvia	35	3
PL Poland	39	2
SK Slovakia	60	6
NO Norway	94	12

Base: Have a website on the Internet, Make online sales= all enterprises. EU-5 = DE, ES, FR, IT, UK. N=501 for EU-5 sector total and 50-100 per country.

Weighting: Figures for size-bands in % of enterprises. Figures for countries are weighted by employment ("enterprises comprising ...% of employees"). Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

Types and relative importance of online sales

The percentage of companies selling on line is very low. For this reason data about the channels used can give only qualitative indications. Not surprisingly, the few companies selling online do so basically through their own web-site.

As for marketplace, there has been a proliferation of such initiatives in recent years, many at international level. However, data on usage seem to indicate that operations are still very limited, as well as the number of firms actually using it for commercial transactions beyond already consolidated relationships. Very well-known reasons, common to other sectors, account for this limited usage: the prevalence of micro and small companies with limited investment capacity and cultural barriers; the difficulty of evaluating and demonstrating benefits and gains from investments in this field, the flourishing of initiatives which make it difficult to select those best suiting company's needs. A very important sector-specific reason is also the difficulty of codifying the physical characteristics of the products which are, on the other hand, of utmost relevance. This proves to be a relevant barrier to a completely automated management of the transactions.

Survey data indicate very little usage of EDI at sector level. Networks based on EDI, however, do exist in the footwear and clothing sector. Although limited in number, they offer relevant competitive advantages especially to those companies which pursue integration with their distribution networks.

Exhibit 2-22: Distribution platforms and protocols used for online sales in the textile, clothing and footwear industries (2003)

	Own company website	B2B Marketplaces	Extranet	EDI	Mobile services (e.g. WAP)
Sector total (EU-5)					
% of employment	94	10	0	12	1
% of enterprises	67	12	0	1	9
All (9) Sectors (EU-5)					
% of employment	81	34	15	14	6
% of enterprises	79	38	4	5	1

Base: enterprises selling online. EU-5 = DE, ES, FR, IT, UK. N=26 for EU-5 sector total. Weighting: Figures for size-bands in % of enterprises. Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

Business example:

Hennes & Mauritz

H&M is a very successful and expansive Swedish fashion group. It is present in 13 EU countries and plans to expand in Eastern Europe. H&M's strategy has been developing along:

- *expansion, through the set up of a proprietary distribution network of centrally controlled stores*
- *price-competitiveness and profitability, through very efficient management of production and logistics*
- *very short lead times which ensure quick response to market trends and reduction of stocks*

What is peculiar to H&M is the "pioneering" choice of vertical integration with distribution and the leverage of store control in order to exploit information about sales and consumers

H&M is also an example of competitive advantages brought by integrated e-business solutions. Procurement and logistics can track sales and stock status as, owning the stores, they share a common ICT platform. This allows the company both to react quickly whenever new trends are identified and to avoid procurement of goods which are not appreciated by the market

H&M also relies on efficient and integrated systems for inventory management which have been able to reduce lead times while ensuring adequate stock management.

Source: articles, www.hm.com

Business process integration in e-commerce (sell-side)

The very limited number of enterprises selling online does not allow any statistical analysis how the incoming information about online sales is integrated with the company's information systems. Comparison with the all sector average highlights that, whenever carried out, online sales are transferred to the information system through traditional means without integration of the activities.

Exhibit 2-23: Business integration of online sales systems in the textile, clothing and footwear industries (2003)

	Information about order by fax	Information about order by e mail	Ordering system integrated with back end system
Sector total (EU-5)			
% of employment	11	70	17
% of enterprises	27	57	1
All (9) Sectors (EU-5)			
% of employment	4	53	33
% of enterprises	8	77	6

Base: enterprises selling online. EU-5 = DE, ES, FR, IT, UK. N=26 for EU-5 sector total. Weighting: Figures for size-bands in % of enterprises. Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

Exhibit 2-24: Exchange of documents and standardised data with customers (2003)

	Use of online technologies* to exchange documents with customers **	Use of an electronic invoicing system
Sector total (EU-5)		
% of employment	38	22
% of enterprises	17	9
0-9 employees	9	6
10-49 employees	34	17
50-249 employees	45	28
250+ employees	47	37
All (9) sectors (EU-5)		
% of employment	38	n.a.
% of enterprises	30	n.a.
Sector by country (% of employment)		
DE Germany	50	20
EL Greece	39	67
ES Spain	29	25
FR France	50	4
IT Italy	30	21
NL Netherlands	38	38
FI Finland	39	22
UK United Kingdom	42	40
EE Estonia	61	42
LV Latvia	44	51
PL Poland	37	15
SK Slovakia	18	20
NO Norway	11	68

* other than free text e-mail

Base: all enterprises / ** enterprises with Internet access. EU-5 = DE, ES, FR, IT, UK. N=413 for EU-5 sector total and 50-100 per country. Weighting: Figures for size-bands in % of enterprises. Figures for countries are weighted by employment ("enterprises comprising ...% of employees"). Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

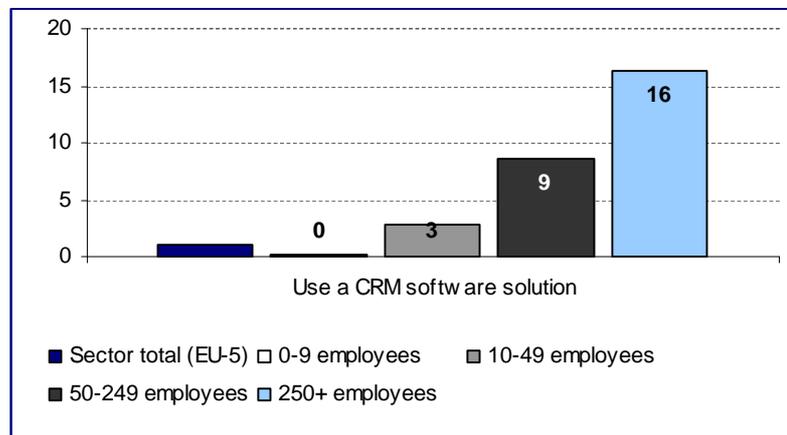
The exchange of documents with customers is carried out electronically by 17% of enterprises, about half the all sector average. This practice is quite common within larger enterprises, while the usage of electronic invoicing systems is less diffused.

Customer relationship management

As the market is strongly affected by demand trends, the main requirement for all the players involved is to have access to as many and as detailed data as possible on sales and consumers' behaviour. This would allow them to quickly adapt production planning to market trends, to decrease overstocks and to exploit information on consumers' taste in order to plan the forthcoming collections. At a general sector level, the introduction of CRM applications is nevertheless limited by the poor diffusion of the necessary infrastructure.

With regard to this indicator, the sector stands below the average (1% of enterprises of the textile, clothing and footwear versus 4%). CRM is used by 16% of larger companies and 9% of medium-sized ones.

Exhibit 2-25: Companies from the textile, clothing and footwear industries using a CRM (customer relationship management) software application (2003)



Base: all enterprises. EU-5 = DE, ES, FR, IT, UK. N=501 for EU-5 sector total.

Weighting: Figures for size-bands in % of enterprises. Figure for "Sector total" is weighted by employment ("enterprises comprising ...% of employees"). Reporting period: November 2003.

Source: *e-Business W@tch* (2003/04)

Perceived impact of online selling

As pointed out when analysing data about online sales, the percentage of companies selling online is very low and no statistical conclusion can be drawn. It is nevertheless interesting to look at how the (limited) sample of companies selling online perceive the impact of this activity. Main findings are:

- the high percentage of dissatisfied sellers which state fairly negative effects even as regards the possibility of expanding sales and number of customers
- relating to savings (logistics, efficiency of processes) the positive perception is counter-balanced by a nearly equal share of companies which are, instead, dissatisfied with the results

2.2.5 Functions of the extended enterprise

The concept of extended enterprise is that a company not only needs to efficiently manage the internal flows of information but has to provide all the players of the value chain with the information they need.

Use of online technologies for collaboration with business partners

The table shows that the share of textile, clothing and footwear companies collaborating online with their partners is not far from the average of the nine sectors compared. The exchange of data related to product design has a long tradition in this sector – the introduction of CAD/CAM dates back some decades – and is diffused even among micro and small companies, without relevant differences among companies from different countries. Other applications related to demand forecast and capacity inventory management are comparatively rather diffused; these applications, however, are applied mainly among larger companies.

Exhibit 2-26: Use of online technologies (other than free text e-mail) for business processes between companies (2003)

	Collaborative product design	Collaborative demand forecast	Capacity / inventory management	Contract negotiation
Sector total (EU-5)				
% of employment	13	9	10	9
% of enterprises	10	5	5	3
0-9 employees	10	5	3	2
10-49 employees	11	5	7	6
50-249 employees	12	10	13	10
250+ employees	17	14	12	17
All (9) sectors (EU-5)				
% of employment	17	12	14	13
% of enterprises	12	8	6	11
Sector by country (% of employment)				
DE Germany	11	12	7	2
EL Greece	17	13	7	10
ES Spain	5	3	10	4
FR France	18	11	15	9
IT Italy	13	6	9	11
NL Netherlands	11	3	3	2
FI Finland	14	12	28	39
UK United Kingdom	18	15	10	17
EE Estonia	18	15	14	46
LV Latvia	0	18	2	62
PL Poland	16	14	4	18
SK Slovakia	19	22	7	18
NO Norway	12	5	4	2

Base: enterprises with Internet access. EU-5 = DE, ES, FR, IT, UK. N=413 for EU-5 sector total and 50-100 per country. Weighting: Figures for size-bands in % of enterprises. Figures for countries are weighted by employment ("enterprises comprising ...% of employees"). Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

The prerequisite for online collaboration with external partners is the digitalisation of information to be exchanged. To allow for automatic processing, information has to be digitalised in structured, consistent and standardised formats. This prerequisite is particularly critical in a sector where the

supply chain is fragmented and production is carried out through complex relations among suppliers, sub-contractors and customers.

Several problems are presently impacting on the efficiency of this supply chain: the large usage of communication tools (such as telephone and fax) which are inefficient and cause delay and errors; information systems which are not able to interface; lack of common standards.

Electronic business can be really useful only where there is the right degree of consensus between companies and industries on issues such as product description or the order/payment process to be described. Without this, there is the risk of a company's information system not understanding data sent by those of the trading partners.

Business example:

Textilebusiness.it

This is an interesting example of e-supply chain integration, allowing participants to take advantage of an advanced e-business solution at low cost. The initiative was born to address SMEs active in the industrial district of Como (I).

Textilebusiness.it is based on a pre-existing marketplace, the strategic objectives and architecture of which have basically changed. At present, this initiative has retained in part the goal of enhancing companies' visibility and increasing transactions. The main objective, however, is to support B2B relations among the various players of the value chain through an innovative Internet-based architecture.

The solution is based on a peer to peer "PtoP" architectural paradigm in which communication among participating firms is totally symmetric. With respect to traditional marketplaces where a central server manages the system (and where problems related to privacy and data security may arise), in Textilebusiness.it, the central platform acts as a directory which locates the counterpart. Once the identification has taken place, direct communication is established between the two parties. Participants simply need to use an interface bridging XML standardised messages from other knots with their own IS.

The real challenge, however, has been the standardisation of the Communication protocol (in practical terms the definition of a commonly shared "vocabulary") that describes documents to be exchanged: orders and sub-contractors disposals, confirmation/modification of orders and disposals, transport documents and packing lists, order work in progress, fabric technical sheets, etc.. The project was publicly funded; the initiative has been supported by local institutions and now is managed by Textileitaly, the portal of the Italian Textile Association, with the aim of spreading the service to all firms operating in the textile supply chain.

Source: articles, www.textilebusiness.it

Exchange of standardised data with business partners

Looking at how standardised data are exchanged among companies, it appears that companies tend to use sector-specific and proprietary standards rather than common ones. EDI is only used by medium-sized and large companies.

Exhibit 2-27: Exchange of standardised data between companies (2003)

	Any standards	of those (multiple answers possible):				
		EDI based*	XML based*	STEP*	Proprietary standards*	Other*
Sector total (EU-5)						
% of employment	35	15	4	2	14	6
% of enterprises	13	2	0	1	5	3
0-9 employees	9	1	0	0	4	2
10-49 employees	24	3	1	2	5	4
50-249 employees	47	21	7	4	20	5
250+ employees	65	38	10	0	30	13
All (9) sectors (EU-5)						
% of employment	n.a.	18	0	0	0	0
% of enterprises	n.a.	5	0	0	0	0

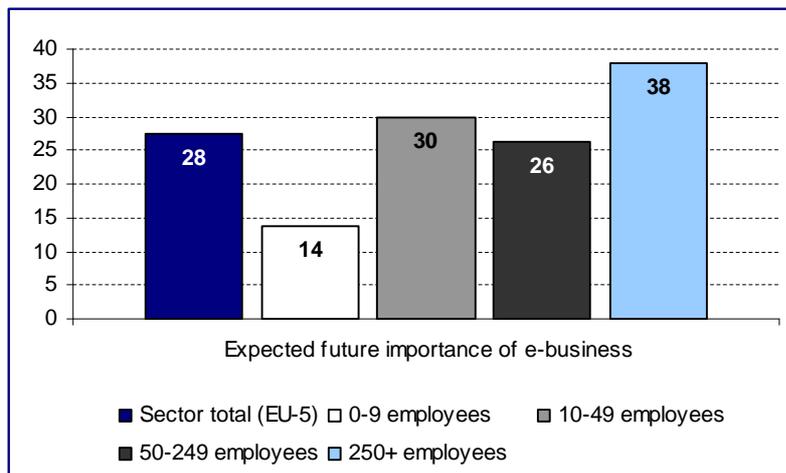
Base: all enterprises / * enterprises exchanging standardised data. EU-5 = DE, ES, FR, IT, UK. N=501 for EU-5 sector total. Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

2.2.6 Outlook: What will be important

The following table illustrates the evaluation of future e-business importance, independently of the distinction between adopters and non-adopters. The results are quite interesting since they support a view of e-business as a complementary element rather than a predominant asset within the everyday activity of firms. Less than one third of firms state that e-business is likely to constitute a significant part of their operations within the next two years. Findings of this survey show that activity in textile, clothing and footwear sector is very much based upon traditional means of communication and transaction and this situation is not going to change in the near future.

Exhibit 2-28: Assessment by companies: The expected future importance of e-business



Base: all enterprises. EU-5 = DE, ES, FR, IT, UK. N=501 for EU-5 sector total.

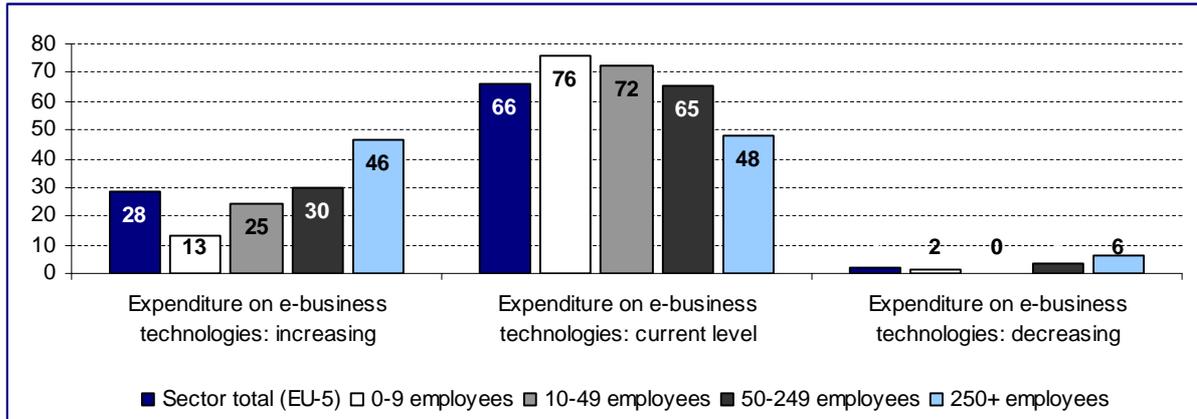
Weighting: Figures for size-bands in % of enterprises. Figure for "Sector total" is weighted by employment ("enterprises comprising ...% of employees"). Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

The survey results give an outline forecast of future expenditures on e-business which the enterprises will make in the next 12 months. As shown in the table, most of the companies said they would

maintain the same level of expenditure. Increases are expected in less than one third of the companies, more often among larger enterprises. The overall picture confirms limited ICT dynamics in the sector.

Exhibit 2-29: Assessment by companies: The expected expenditures on e-business

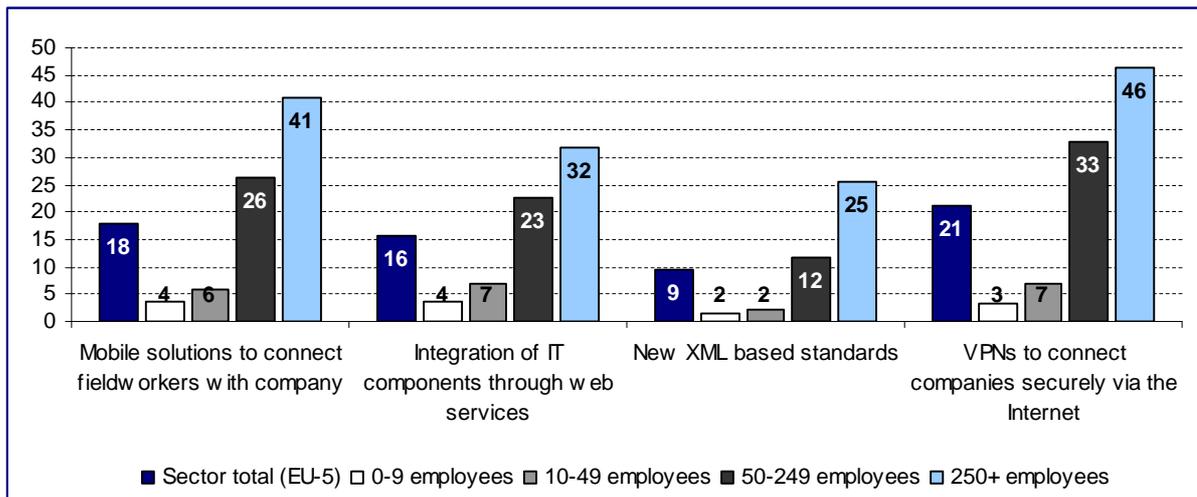


Base: all enterprises. EU-5 = DE, ES, FR, IT, UK. N=501 for EU-5 sector total.
 Weighting: Figures for size-bands in % of enterprises. Figure for "Sector total" is weighted by employment ("enterprises comprising ...% of employees"). Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

All companies were asked to indicate the importance they foresaw for a few technological developments under way, including mobile solutions for connecting workers working remotely, integration of ICT components through web services, new XML standards and virtual private networks. Again, only larger companies seem aware of ongoing developments.

Exhibit 2-30: Assessment by companies: The future importance of new developments



% of companies saying this will be "important for their company"

Base: all enterprises. EU-5 = DE, ES, FR, IT, UK. N=501 for EU-5 sector total.

Weighting: Figures for size-bands in % of enterprises. Figure for "Sector total" is weighted by employment ("enterprises comprising ...% of employees"). Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

2.3 The European e-Business Sector Scoreboard

2.3.1 Introduction

This Scoreboard compares the importance of ICT and e-business applications in 9 sectors of the European economy using 16 key indicators. For reasons of consistency and comparability, all indicators are based on data obtained through the e-Business Survey 2003 of the *e-Business W@tch*. Normally, benchmarking activities of this type imply that a higher score stands for a better performance. In this context, however, the main objective of the Scoreboard is not to make a statement about sectors' e-business performance. The goal is rather to make visible at a glance the fundamental differences between sectors with respect to the role and the relative importance of information technology and electronic business applications. For instance, the Scoreboard for the tourism sector shows that e-business is very important for marketing and sales, while the e-business intensity is below average in other business areas. For the chemical industries, the finding is just vice versa.

The indicators

The Scoreboard is composed of 16 component indicators for ICT and e-business which are grouped into four categories according to the business functions they refer to. These categories are: (i) the connectivity of the enterprise, (ii) Internal business process automation, (iii) procurement and supply chain integration, and (iv) marketing and sales. The scoreboard compares the level of e-business across different sectors in each of these categories.

The selection and definition of component indicators was driven by pragmatic requirements, considering data availability (a selection criteria was that data were available for all sectors monitored and for the EU-5 countries) as well as data reliability (in the sense that only a minimum of indicators which reflect subjective perceptions of the interviewee were used). Some of the component indicators consist of more than one variable by themselves. The Exhibit on the next page explains all 16 component indicators and their definition.

The Scoreboard is flexible in terms of scope and choice of indicators. Additional categories could be added on demand. If component indicators are modified or exchanged, however, aggregate values for the respective category will obviously be affected.

Percentages and index values

The Scoreboard presents data both as percentages and as indexed values.

- **Percentages** express the share of employees from a sector that work in enterprises using an application as defined in the following table.
- **Indexed values** take into account the percentages from all sectors and show how a specific sector differs from the all-sector-average. An index value is based on mean values and standard deviations. Constituting values are z-values, i.e. $z = (x - \text{mean}(x)) / \text{stddev}(x)$. This procedure results in a distribution with $\text{mean}(z) = 0$ and $\text{stddev}(z) = 1$. Thus, index values express the multiple of the standard deviation (1 or -1) for a specific sector and the selected indicator. 0 equals the mean value for all sectors, a value of +1 that the percentage is higher than the mean percentage of all sectors by the extent of the standard deviation. Negative values show that the percentage is lower than the mean percentage of all sectors.

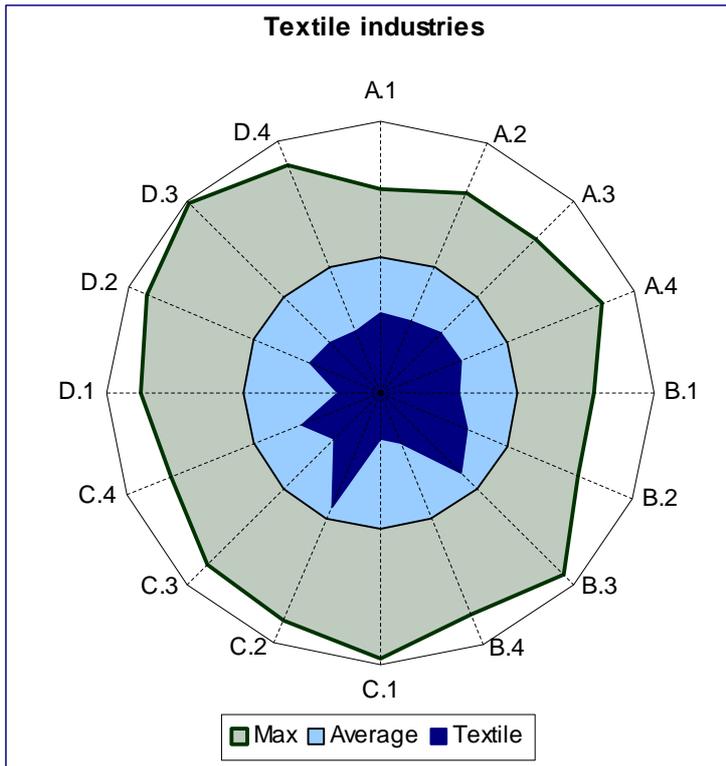
All spider diagrams are based on index values. The reason for preferring indexed values over simple percentages is that they adjust data for typical cross-sectoral gaps.

Exhibit: Definition of component indicators used for the E-Business Sector Scoreboard

A		
Connectivity of the enterprise		
A.1	Enterprises connecting computers with a LAN	= the percentage of employees from a sector working in enterprises that have connected computers with a Local Area Network (LAN).
A.2	Internet connectivity	= the percentage of employees working in enterprises that are connected to the internet, with a supplementary indicator for the type of internet connection in terms of bandwidth. The percentage of employees working in enterprises that are connected with a bandwidth of less than 2 Mbit/s is computed with a factor of 0.5, enterprises connected with ≥ 2 Mbit/s bandwidth with a factor of 1.0. The maximum value of 100 would be returned if all employees from a sector work in enterprises connected to the internet with ≥ 2 Mbit/s bandwidth.
A.3	Remote access to the company network	= the percentage of employees from a sector working in enterprises where it is possible to access data from the company's computer system from a remote location.
A.4	Wireless access to company network	= the percentage of employees from a sector working in enterprises where it is possible to access the company network through wireless technology, for example by means of a wireless LAN (W-LAN).
B		
Internal business process automation		
B.1	Use of an intranet	= the percentage of employees working in enterprises that use an intranet.
B.2	Use of online technology to track working hours and/or production time	= the percentage of employees working in enterprises that use online technologies for production process controlling purposes by tracking working hours of employees and / or production times
B.3	Use of ERP systems	= the percentage of employees working in enterprises that have implemented an ERP (enterprise resource planning) system
B.4	Perceived impact of e-business on internal work processes	= the percentage of employees working in enterprises that say that the use of e-business applications has significantly or somewhat changed their internal work processes
C		
Procurement and supply chain integration		
C.1	Enterprises purchasing at least 5% of their supplies online	= the percentage of employees working in enterprises saying that they purchase at least 5% of their supplies online via the Internet or other online networks (for example via EDI based connections to their suppliers)
C.2	Use of SCM systems	= the percentage of employees working in enterprises that use an SCM (supply chain management) system
C.3	Integration of the IT system with that of a supplier	= the percentage of employees working in enterprises that purchase some of their supplies online and have integrated their IT system with that of a supplier for this purpose
C.4	Electronic exchange of documents with suppliers	= the percentage of employees working in enterprises that exchange documents (other than plain text e-mails) electronically with their suppliers
D		
Marketing and sales		
D.1	Enterprises maintaining a website with a content management system	= the percentage of employees working in enterprises that have a website and use a content management system to maintain and update the website
D.2	Use of CRM software systems	= the percentage of employees working in enterprises that use a CRM (customer relationship management) software to organise data about their customers electronically
D.3	Enterprises selling at least 5% of their goods & services online	= the percentage of employees working in enterprises saying that online sales via the Internet or other online networks (for example via an extranet) constitute at least 5% of their total sales volume
D.4	Enterprises with an online sales system offering the capability of secure transactions	= the percentage of employees working in enterprises that make online sales and whose online sales system offers the capability of secure transactions by means of a secure server, for example using SSL, TLS or a comparable technical standard

2.3.2 E-Business Scoreboards for the textile, clothing and footwear industries

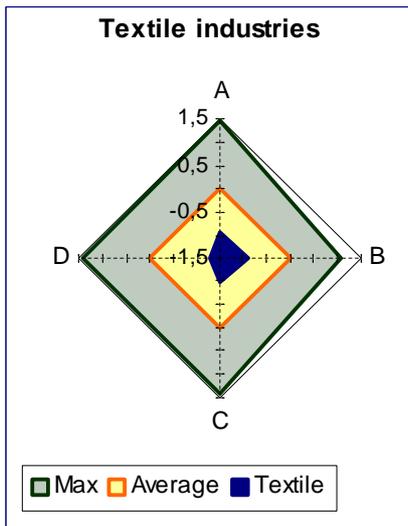
Indexed scoreboard: component indicators



Indicators

- A.1) LAN
- A.2) Internet connectivity
- A.3) Remote access to company network
- A.4) Wireless access to company network
- B.1) Use of an intranet
- B.2) Use of online technology to track working hours and/or production time
- B.3) Use of ERP systems
- B.4) Perceived impact of e-business on internal work processes
- C.1) Enterprises purchasing at least 5% of their supplies online
- C.2) Use of SCM systems
- C.3) Integration of IT system with supplier(s)
- C.4) Electronic exchange of documents with suppliers
- D.1) Enterprises maintaining a website with a content management system
- D.2) Use of CRM software systems
- D.3) Enterprises selling at least 5% of their goods & services online
- D.4) Enterprises with an online sales system offering the capability of secure transactions

Indexed scoreboard: categories (aggregate)



Categories

- A) Connectivity of enterprises
- B) Internal business process automation
- C) Procurement and supply chain integration
- D) Marketing and sales

Max = maximum indexed value for one of the 9 sectors

Average = mean value for the 9 sectors

Assessment: SMEs dominate - e-business less developed than in other manufacturing sectors

The textile, clothing and footwear industry is dominated by SMEs, a large share of which is concentrated in regional clusters.

Survey data indicate that there is a huge divide between these industries and the rest of manufacturing and service sectors. This divide is comparatively larger than the divide between larger and smaller companies within the sector itself.

Nevertheless, ICT and e-business are essential to speed up information flows along the value chain, even if adoption rates are lower than in other sectors.

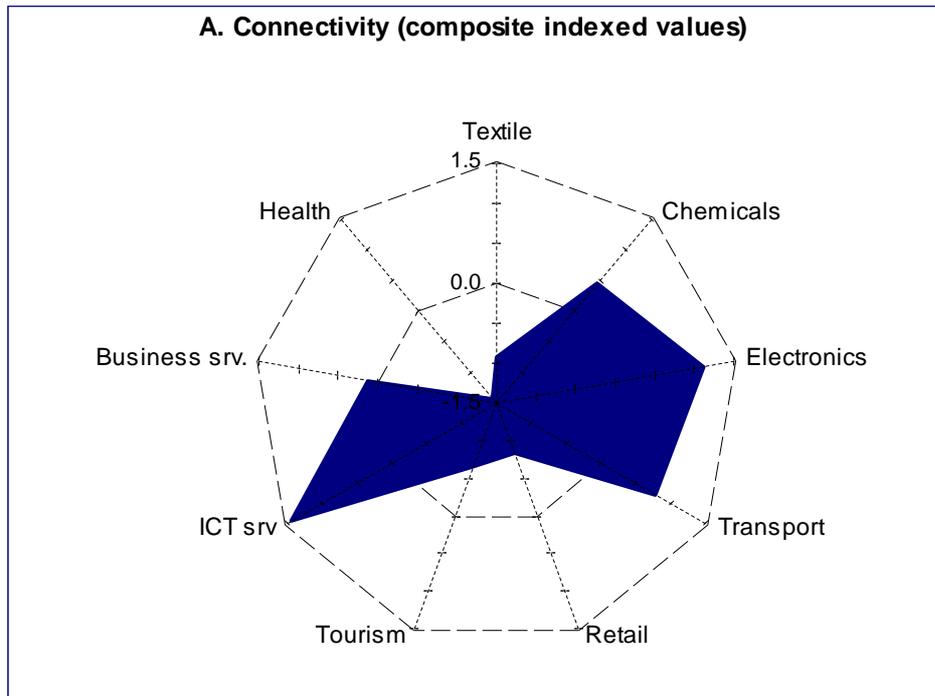
2.3.3 Cross-sector Scoreboards

Scoreboard A) Connectivity of the enterprise

Indicator	A.1 LAN		A.2 Internet		A.3 Remote access		A.4 Wireless access	
	%	Index	%	Index	%	Index	%	Index
Textile	50	-0.94	50	-0.99	26	-0.89	6	-0.88
Chemicals	83	0.82	63	0.31	57	0.63	12	0.01
Electronics	89	1.18	67	0.69	61	0.84	25	1.69
Transport equipment	88	1.13	71	1.10	70	1.25	9	-0.44
Retail	51	-0.91	51	-0.96	24	-1.03	9	-0.43
Tourism	49	-1.00	55	-0.49	28	-0.79	10	-0.36
ICT services	87	1.06	74	1.41	73	1.42	26	1.78
Business services	68	0.02	66	0.59	43	-0.08	12	-0.08
Health services	42	-1.36	43	-1.66	17	-1.35	3	-1.29
All sectors	61	(-0.33)*	58	(-0.26)*	37	(-0.38)*	11	(-0.25)*
Crafts & trade **	30	-1.68	42	-1.55	10	-1.50	3	-1.15

* Due to the larger number of firms and people employed, service sectors have more weight in the "all sectors" percentage. By contrast the mean percentage of nine sectors which is used to compute the indexed values does not consider different sector sizes. Therefore, the indexed value of the percentage for "all sectors" is not zero.

** Figures for the crafts' & trade sector were not included for computing the all-sector average and the indexed values for other sectors, because "crafts & trade" only include small enterprises. Values for crafts & trade result from a separate computation where this sector was included.



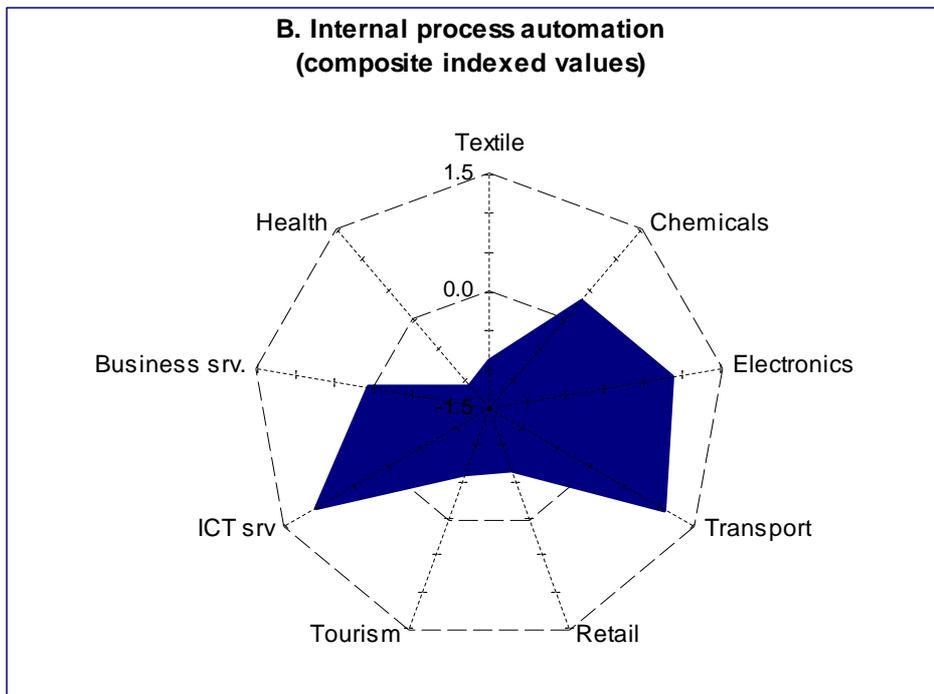
The connectivity scoreboard compares sectors with respect to the functionality of their IT networks. In general, companies from manufacturing sectors tend to be equipped with more powerful IT architectures than businesses from service sectors. The textile industries and the ICT services sector are the exceptions to this rule among the sample of sectors analysed by the *e-Business W@tch*. Results reflect the dominance of large enterprises with complex and sophisticated networking architectures in some manufacturing sectors (for instance in transport equipment manufacturing), compared to sectors such as business services, retail or tourism, where large players are less dominant. If only SMEs were considered, the connectivity gap would be much less pronounced.

Scoreboard B) Internal business process automation

Indicator	B.1 Intranet		B.2 Track production time		B.3 ERP use		B.4 Impact on work organisation	
	%	Index	%	Index	%	Index	%	Index
Sector								
Textile	32	-1.01	15	-0.74	18	-0.43	12	-1.39
Chemicals	62	0.47	33	0.60	48	0.96	16	-0.81
Electronics	77	1.18	36	0.85	45	0.84	25	0.47
Transport equipment	81	1.34	42	1.29	72	2.12	18	-0.51
Retail	37	-0.75	11	-1.06	13	-0.66	21	-0.13
Tourism	34	-0.91	10	-1.14	7	-0.96	26	0.57
ICT services	77	1.18	43	1.37	21	-0.28	34	1.80
Business services	49	-0.16	25	0.00	12	-0.71	29	1.09
Health services	25	-1.33	9	-1.18	9	-0.87	14	-1.08
All sectors	45	(-0.35)*	20	(-0.39)*	19	(-0.40)*	23	(0.11)*
Crafts & trade **	16	-1.48	8	-1.14	5	-0.95	11	-1.70

* Due to the larger number of firms and people employed, service sectors have more weight in the "all sectors" percentage. By contrast the mean percentage of nine sectors which is used to compute the indexed values does not consider different sector sizes. Therefore, the indexed value of the percentage for "all sectors" is not zero.

** Figures for the crafts' & trade sector were not included for computing the all-sector average and the indexed values for other sectors, because "crafts & trade" only include small enterprises. Values for crafts & trade result from a separate computation where this sector was included.



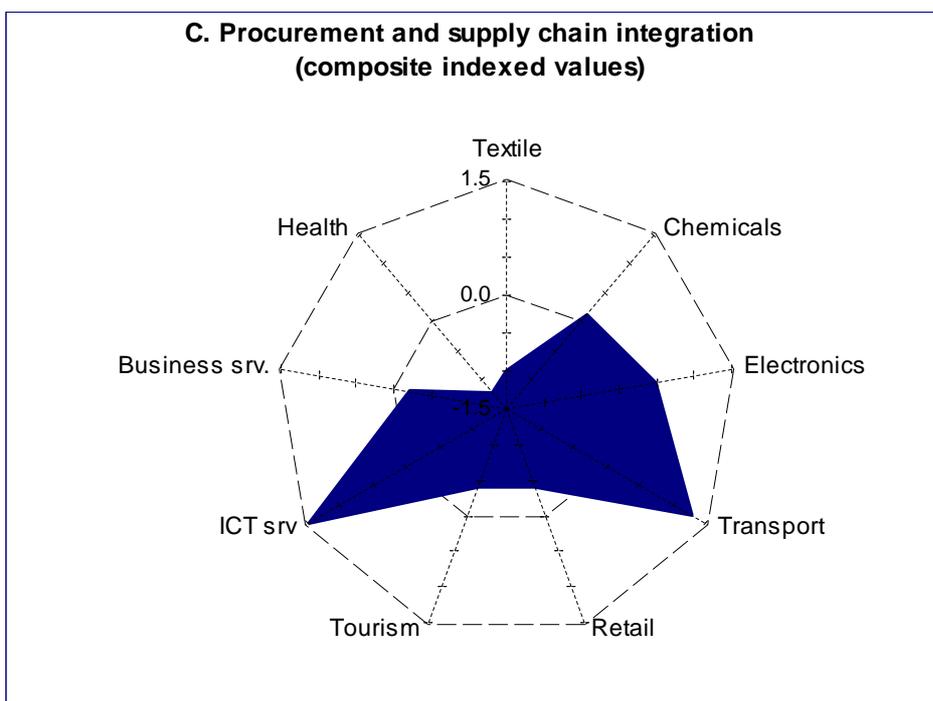
This scoreboard indicates to what extent sectors use ICT to automate internal business processes. Results are largely in line with the connectivity scoreboard. Again, the scoreboard suggests that companies from manufacturing sectors where large enterprises are particularly dominant tend to be most advanced in linking and automating internal business processes. This could be expected, considering that many internal e-business applications such as ERP systems are clearly more relevant for manufacturers and for large companies. However, service companies also use applications to link their internal processes, chiefly the ICT services and the business services sectors.

Scoreboard C) Procurement and supply chain integration

Indicator	C.1 E-procurement intensity		C.2 SCM use		C.3 IT integration with suppliers		C.4 Online exchange with suppliers	
	%	Index	%	Index	%	Index	%	Index
Sector								
Textile	6	-1.56	7	-0.22	2	-1.31	31	-0.93
Chemicals	23	-0.23	13	0.91	6	-0.55	43	0.33
Electronics	30	0.34	10	0.36	12	0.62	45	0.56
Transport equipment	31	0.47	19	1.98	14	1.03	55	1.58
Retail	16	-0.81	5	-0.63	11	0.43	34	-0.59
Tourism	28	0.16	3	-1.05	7	-0.37	35	-0.49
ICT services	54	2.29	11	0.53	19	1.89	50	1.05
Business services	23	-0.18	6	-0.44	6	-0.62	43	0.34
Health services	20	-0.47	1	-1.44	3	-1.12	21	-1.85
All sectors	23	(-0.18)*	6	(-0.42)*	8	(-0.19)*	37	(-0.27)*
Crafts & trade **	10	-1.11	3	-0.97	6	-0.58	30	-0.86

* Due to the larger number of firms and people employed, service sectors have more weight in the "all sectors" percentage. By contrast the mean percentage of nine sectors which is used to compute the indexed values does not consider different sector sizes. Therefore, the indexed value of the percentage for "all sectors" is not zero.

** Figures for the crafts' & trade sector were not included for computing the all-sector average and the indexed values for other sectors, because "crafts & trade" only include small enterprises. Values for crafts & trade result from a separate computation where this sector was included.



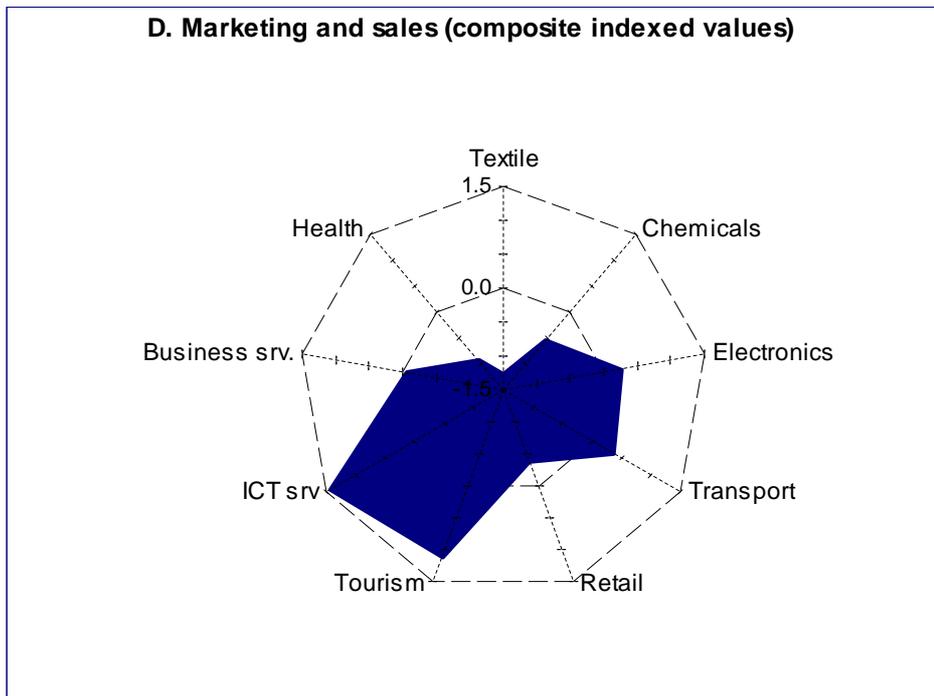
This scoreboard compares sectors with respect to the intensity and sophistication in their e-procurement activities. Results suggest that two sectors are outstanding in this regard: the ICT services sector and the automotive industries. From the other sectors, only electronics and the chemical industries have indexed scores above average. The retail and the tourism sector are closer to the sector average (=0 in the spider diagram) than in the scoreboards for their industry-wide connectivity and internal process automation. E-procurement activities in the textile industries seem to be at a surprisingly low level for a manufacturing sector where managing the supply chain is a core business function.

Scoreboard D) Marketing and sales

Indicator	D.1 Website with CMS		D.2 CRM use		D.3 E-commerce		D.4 Secure transaction capability	
	%	Index	%	Index	%	Index	%	Index
Textile	7	-1.64	7	-1.05	1	-1.11	4	-1.24
Chemicals	17	-0.51	16	-0.01	2	-0.95	5	-0.83
Electronics	28	0.73	23	0.73	8	-0.11	8	-0.27
Transport equipment	23	0.13	26	0.98	13	0.63	8	-0.16
Retail	17	-0.53	7	-0.97	9	0.00	9	-0.04
Tourism	26	0.48	14	-0.28	24	2.36	18	1.92
ICT services	38	1.78	36	2.03	11	0.33	16	1.56
Business services	28	0.70	13	-0.35	6	-0.30	8	-0.25
Health services	12	-1.14	6	-1.07	3	-0.85	6	-0.70
All sectors	22	(-0.03)*	13	(-0.36)*	9	(0.03)*	9	(0.04)*
Crafts & trade **	6	-1.51	3	-1.24	1	-0.95	1	-1.50

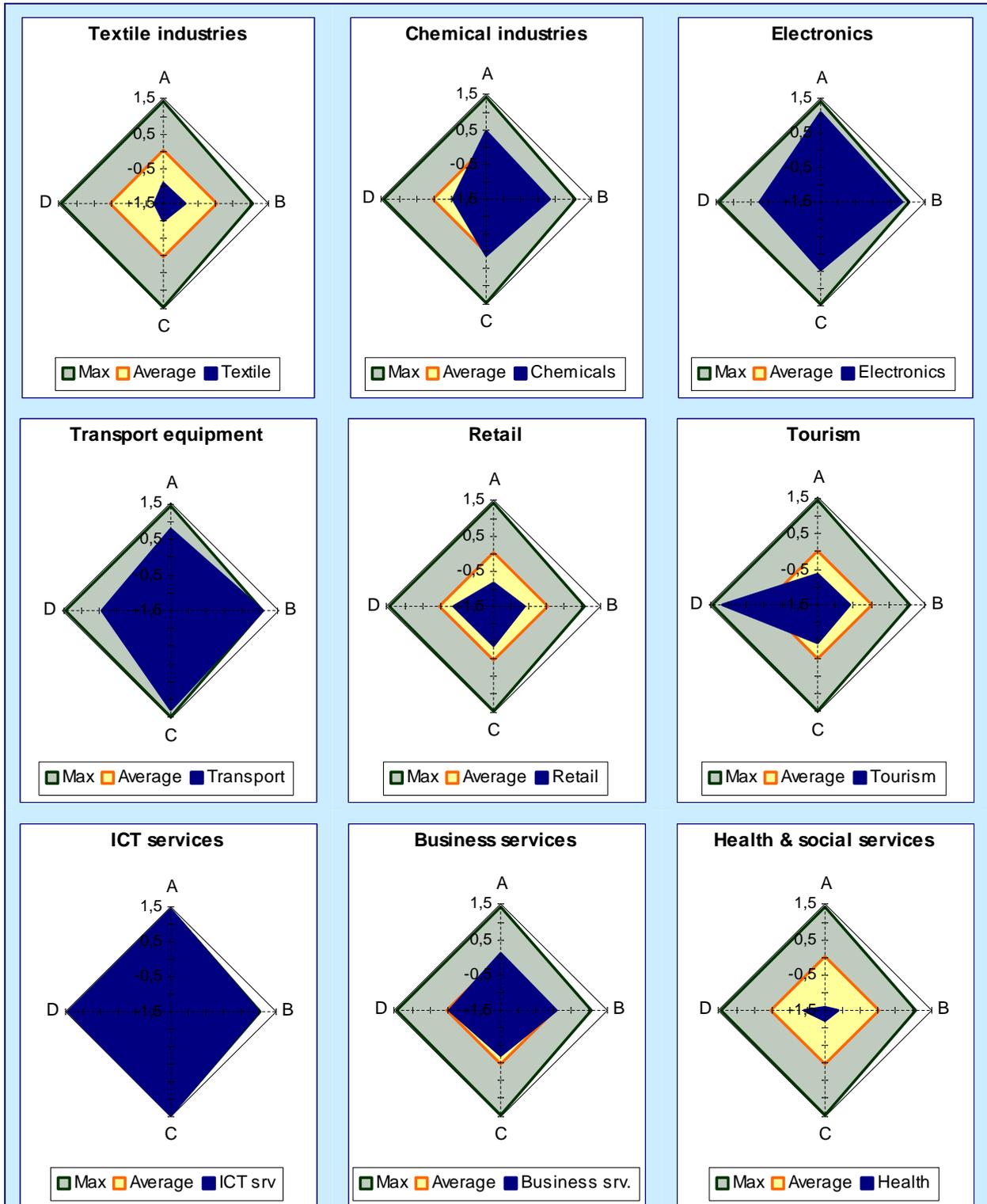
* Due to the larger number of firms and people employed, service sectors have more weight in the "all sectors" percentage. By contrast the mean percentage of nine sectors which is used to compute the indexed values does not consider different sector sizes. Therefore, the indexed value of the percentage for "all sectors" is not zero.

** Figures for the crafts' & trade sector were not included for computing the all-sector average and the indexed values for other sectors, because "crafts & trade" only include small enterprises. Values for crafts & trade result from a separate computation where this sector was included.



This scoreboard compares sectors with respect to e-marketing and e-sales activities. Results are quite different from the other scoreboards and show that using e-business for marketing and sales is a different story than, for instance, automating procurement and supply chain. Tourism, which is below average in all other sectors, is a leader and forerunner in the use of customer facing e-business applications. The sector is topped only by companies from ICT services which manage a large deal of their customer relationship electronically. Retail also scores higher than in the other business areas, although still below average which is quite astonishing considering the e-commerce boom in specific retail markets (for instance books, software).

2.3.4 Sectors in profile



Indexed values by business functions (categories A-D). Each index is based on 4 key component indicators. (A) = Connectivity of the enterprise; (B) = ICT use for internal business process automation (C) = E-procurement and supply chain integration; (D) = E-marketing and sales
 Max = Highest value in one of the 9 sectors benchmarked; Average = Mean value of all 9 sectors

3 Summary and conclusions

3.1 Summary of main findings

The macro economic scenario

The textile, clothing and footwear industry is dominated by SMEs, a large share of which is concentrated in regional clusters. It is one of the most fragmented industries, and is possibly one of the most global industry sectors.

In some Acceding Countries, textile, clothing and footwear have been traditionally a major sector in manufacturing. The relative importance is, in some, cases, well above the EU average. In the year 2000, the production value generated by these industries in Acceding Countries was about 5% of the production value generated in EU-15 in the same year.

In the Candidate and Acceding Countries, the main comparative advantage of the textiles and clothing industry has been their low (labour) costs and (in a few cases) their textile and clothing traditions, which guarantee adequate quality. It is common practice, for EU companies, to carry out the so-called OPT, i.e. outward processing transactions. They consist of the export of EU fabric, cuttings or semi-finished garments to low-wage countries, which make them up into finished garments for re-import into the EU.

The Candidate and Acceding Countries continue to attract European industry; they have also become familiar with the modern production techniques used in the EU. As a result, more and more EU businesses are developing internationalisation and co-operation strategies within them. The most part of the exports from these countries is towards the EU; this incidence ranges between two thirds and close to 100% for countries such as Romania and Poland. They are also very important outlet markets for EU export of intermediate products (for transformation and back import).

In EU-15 countries, the share of employment on total employment in manufacturing is slightly more than 3% in textile and clothing and about 1.6% in leather. In Acceding Countries these percentages are slightly higher, particularly in the clothing sector (more than 6%).

The next enlargement will bring about 0.6 million employees in the textile and clothing sectors to the EU, a large share of which have been working for the EU market for a long time.

Competitive factors

The competitive scenario of the textile, clothing and footwear industries underwent profound changes in the past year. The main macro trends which have been – and still are – affecting this evolution are:

- liberalisation of trade and globalisation of production and markets
- strong competitive pressure related to price-competition
- concentration in manufacturing and distribution
- pressure on innovation
- differentiation

Competitiveness increasingly depends on the – quickly changing – consumer side and the requirements of distribution. Successful companies in this sector are increasingly paying attention to strategic issues such as

- further control on fixed costs,
- optimisation of production processes with the aim of reducing time to market and lead time,
- IT systems able to integrate the whole supply chain, from the point of sale (POS, bar code) to order management and logistics,
- and the selection of suppliers in the framework of long-term strategies.

The point is no longer (or not only) the minimisation of direct production costs but more and more the minimisation of the overall supply chain cost, including standardised and agreed mechanisms able to evaluate quality and timing performances.

In this scenario, the role of industrial districts and their degree of internationalisation is also changing: the production of traditional and more low-level products is bound to disappear, local subcontractors are decreasing in number and competition is focusing on value-added activities.

Districts, nevertheless, are deeply integrated production systems and are organised according to behavioural codes which, in principle, may exploit maximum benefits from e-business. The way they will react to the changes under way and be able to exploit e-business potential will be crucial for EU competitiveness.

The role of ICT and e-business

The application of ICT and e-business in this sector is essential to speed up information flows along the value chain, bringing the following related advantages:

- shortening the development cycle by co-ordinating all information on marketing forecasts, design, production scheduling, dispatch and delivery, eliminating “hand-over” time between each stage of the process and, eventually, stocks
- improving links with all existing manufacturing operations – especially if outsourced – in order to shorten lead times and to save on administration and management costs. These manufacturing operations will increasingly be small batch ones requiring efficient and quick management
- capturing and analysing information about distribution channels and final customers in order to adjust their marketing and production strategies
- enhancing the bargaining power vis-à-vis larger customers for those small firms which are able to integrate or interface the respective Information Systems, thus challenging the asymmetric structure of the market

The textile, clothing and footwear sector shows, on the other hand, a set of features which have been delaying a full exploitation of e-business. These features are related to the companies’ size and the cultural attitude, lack of trust and knowledge as well as problems related to ICT competences.

Overall results from the survey

Survey data indicate that there is clearly a divide between these industries and the rest of manufacturing and service sector. This divide is comparatively larger than the divide between larger and smaller companies within the sector itself.

The usage of ICT infrastructure is well below the “all sector” average and even the Internet is far from being a standard for smallest companies e-business. E-mail and www are not part of everyday practice for many firms in this sector. Broadband is limited to a minority of larger firms.

Looking at results from a geographical perspective:

- In a group of Northern countries, namely Germany, UK, Norway and Finland, companies from the sector tend to be more advanced with respect to nearly all areas of e-business.
- Firms in France and in the Netherlands follow in terms of infrastructure, while they are in line with the group of frontrunners for solutions related to internal and external process integration, purchasing and selling.
- Among firms from the Southern countries, companies in Greece are comparatively advanced in the Infrastructure usage and in solutions supporting internal processes, while there is quite little usage of customer and supplier facing (external) applications. Firms from Spain, and from Italy in particular, show considerable gaps in most e-business areas. In the case of Italy, the strong competitive position of a number of textile companies in the international market still

rely on tacit knowledge that is difficult to codify and convey on the internet. These assets are largely intangible.

- Among the firms from the Acceding Countries, those in Slovakia and Estonia are only slightly below their counterparts in the most advanced ICT regions. Diffusion of e-business applications is lowest among companies from Poland and – partly – Latvia.

Internal processes

Data about the diffusion of e-business solutions and ICT to support internal process indicate a limited horizontal integration of ICT within companies. The fragmentation of the industry, in terms of number of different players along the value chain, has determined the development of ICT tools for the management of the various production processes. This resulted in the so-called “islands of activity” which prove to be difficult and costly to integrate and consequently are not likely to be connected in the short term, at least among the smallest firms. It is questionable whether a better horizontal integration electronically supported is always necessary at individual level. Empirical evidence seems to indicate that for micro and small enterprises internal efficiency does not necessarily rely on more advanced technological applications. The picture is different for larger enterprises which may benefit significantly from technological support for internal processes.

Supply chain integration

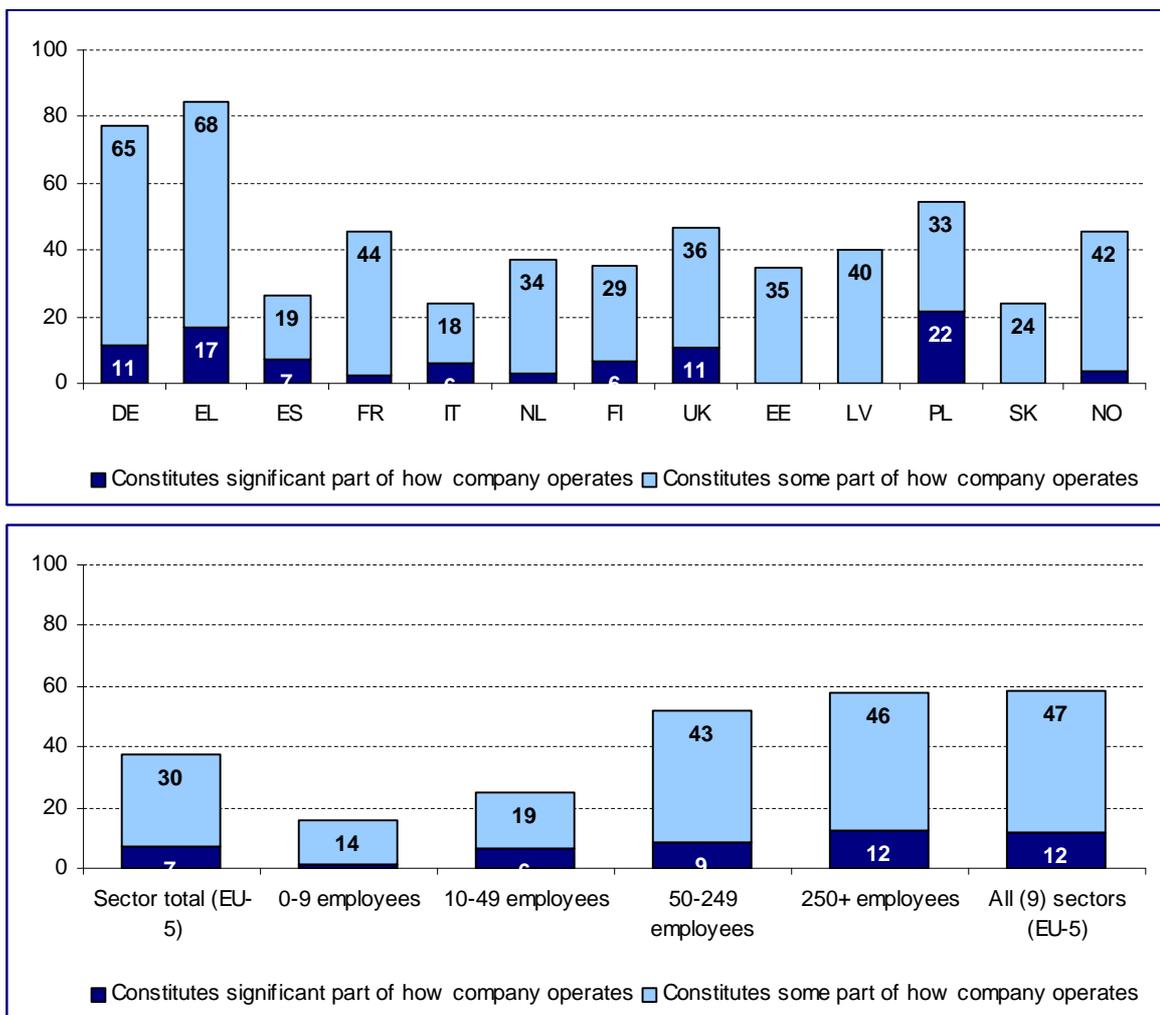
Analysis of the sector value chain indicates the need for further vertical integration. Survey data, however, show that only a limited share of companies in this sector are integrated in their supply chain. Even larger companies, so far, have not had yet a leading role in this direction. The lack of commitment of larger players in guiding innovation at a supply chain level is surely one of the most important factors in explaining the delay of this sector in adopting e-business. Among smaller players, the very limited degree of computerisation and related know-how, cultural barriers and the diversity of technological equipment are accompanied by a lack of trust and knowledge about the potential benefits of e-business. With regard to this latter point, awareness should be raised not only about efficiency and savings but also about the competitive and commercial benefits, i.e. the enhancement of bargaining power vis-à-vis larger customers for those firms which are able to integrate or interface the respective Information Systems.

3.2 Economic impacts

3.2.1 Impacts on individual enterprises

All enterprises, independently of the distinction between adopters and non-adopters were asked for an overall evaluation of the impact of e-business. At a sector level, only one third of firms indicate that they have already seen some transformation in their activity as a result of e-business. This evaluation clearly reflects the degree of e- business diffusion and neatly divides micro and small enterprises from medium-sized and large ones.

Exhibit 3-1: Overall significance of e-business for companies in 2003 (by region and by size-band)



Base: all enterprises. EU-5 = DE, ES, FR, IT, UK. N=502 for EU-5 sector total and 50-100 per country.
 Weighting: Figures for size-bands in % of enterprises. Figures for countries are weighted by employment ("enterprises comprising ...% of employees"). Reporting period: November 2003.

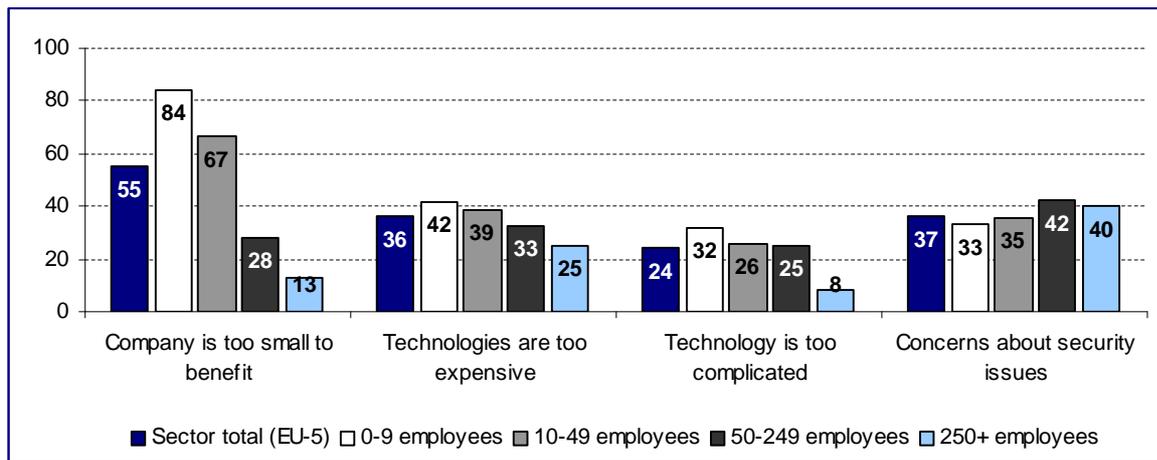
Source: e-Business W@tch (2003/04)

Out of the former group, a percentage of firms ranging from 15% to 25% attributes significance to e-business, while the majority of larger companies state that e-business constitutes a significant or some part of how they operate.

The picture by country mirrors the more general picture of e-business diffusion. German and Greek companies are the most active in incorporating e-business in their everyday practice, followed by firms from the UK, Norway and Poland.

There is a clear relation between company's size and motivations to non adoption of e-business. The main reason why companies do not adopt such solutions is that they feel that their size does not justify such a choice. This motivation is given by the larger majority of micro and small firms but also by a significant share of medium sized companies. There is clearly a need for solutions able to match differentiated requirements, especially simplified mechanisms for co-ordination and integration. This is also reflected by motivations concerning costs and complexity. Concerns about security are rather homogeneous across all the size bands.

Exhibit 3-2: Reasons why e-business does not play a role in companies



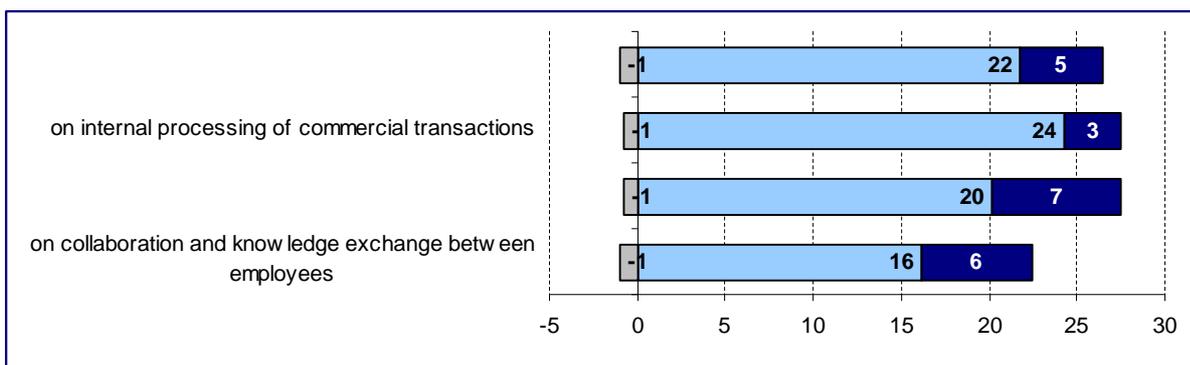
Base: enterprises not using e-business applications. EU-5 = DE, ES, FR, IT, UK.

Weighting: Figures for size-bands in % of enterprises. Figure for "Sector total" is weighted by employment ("enterprises comprising ...% of employees"). Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

About 27% of firms perceive fairly or very positive impacts of the internet on various business processes. There is no real differentiation in how companies perceive these impacts on their own activities; this indicates that they are not very familiar with them.

Exhibit 3-3: Perceived impacts of the internet and e-business technologies



Key: very negative >> fairly negative >> fairly positive >> Very positive

Base: enterprises using the internet. EU-5 = DE, ES, FR, IT, UK. In % of enterprises. Reporting period: November 2003.

Source: e-Business W@tch (2003/04)

3.2.2 Implications for the industry

Increasing globalisation and evolution of international trade imply stronger competitive pressure

Complete removal of quotas by the year 2005, EU enlargement and acceleration of the concentration process in manufacturing and distribution will push the growth of international trade and globalisation.

A further trend toward the re-location of production is likely. Major players will be more aggressive in searching for new foreign outlet market and will seek further efficiency in domestic and EU markets. Access of new countries will have a twofold effect. On the one hand, those which already account for significant share of manufacturing will be fully part of the competitive arena. On the other hand, the fast improvement of living standards in some of these countries will contribute to foster the overall European demand.

There will be stronger competitive pressure on production process organisation and the related capability to deal with increasingly complex organisations will be a major challenge.

The EU will have to keep investing in quality, functionality, environmental friendliness and added value for customers in order to differentiate and overcome price competition from third countries. Innovation will be increasingly a key success factor.

All platforms (marketplaces, portals, websites, electronic catalogues) aimed at increasing transparency and facilitating the establishment and management of international business partnership will become increasingly important.

In principle e-business can play a valuable role in supporting competitiveness, however, there is a risk that the impact will be markedly different between those firms which can afford investments in technology and those which cannot.

Increasing complexity calls for ICT support

The evolution of the competitive scenario depicted above will increase dependence on suppliers, customers, technology providers, service providers and intermediaries, and possibly geographically spread. In such a complex organisation context, efficient management of information flows is fundamental in all company functions.

Solutions aimed at gaining higher efficiency and integration along the whole value chain will be increasingly needed. It appears that presently few e-business technologies available are sector-specific and, therefore, they may need substantial modification to work efficiently and effectively in the sector.

A specific obstacle to the widespread diffusion of such solutions is the still limited availability of sector specific description and messaging standards for data exchange via Internet based platforms. Interesting initiatives in this area have been nevertheless taking place, e.g. the TEX-SPIN –Textile Supply Chain Integrated Network (www.atc.gr/texspin) project. The aim of this project has been the upgrading of EDITEX – EDIFACT textile sector specific subset – to conform with the EANCOM framework and to develop XML/EDI pilot applications.

A demand driven market: the need for customer intelligence

The market for textile products is strongly demand driven. The purchasing behaviour is evolving along the lines of fragmentation and diversification, price-sensitiveness and low customer loyalty. Distribution has increasing demand for more valued added services and a frenzy of new collections proposals. In contrast to the traditional two collections per year, the market is shifting toward four, sometimes even six, collections per year.

These trends are imposing dramatic changes to manufactures. Quick response capability, reduced time to market and lead time, small batches production are becoming essential to compete.

Firms will have to develop further the capability to detect market changes and to quickly turn information into innovative and quick production.

Changes in labour market

The labour market for textile, clothing and footwear industries has undergone a severe loss of jobs. At the same time, highly specialised competences are being increasingly requested in the areas of product development and design, production simulation, security etc. Looking in more detail at companies needs as for ICT competences, it appears that this sector shows limited demand for specialised staff and companies searching for qualified staff are experiencing less difficulties than in other sectors.

The limited availability of sector-qualified personnel may impact negatively on the working mobility and know how flow within this industry. Moreover this sector is clearly lagging behind as for investment in ICT training which is limited to larger enterprises and to a few, mainly Nordic, countries.

3.3 Policy implications

Improve EU competitiveness through research & innovation: the role of e-business

The European textile, clothing and footwear industry has a longstanding tradition for being worldwide leader in terms of quality and innovation. Despite relocation of manufacturing to low wages countries, it has preserved its leading role in the global market through investments in automation of production, flexible organisation, quality of products and efficiency of services. New materials and innovative process technologies will continue to be fundamental.

According to *e-Business W@tch* survey data, about one out of four large companies (23%) have innovated their products and processes in the 12 months preceding the survey. This percentage stands at 9% and 4% at a sector level and is much lower for micro and smaller enterprises. There is, therefore, a strong case for support to sector-specific innovation especially among SMEs.

What the survey data clearly show however is the gap between the innovation capability and sector-specific know-how –which is still a point of strength in EU industry- with respect to ICT deployment and usage in the sector. This has two main implications. On one side firms find it difficult to make visible and accessible to the external world their competences and capabilities. This penalises their competitiveness in the global context. Moreover, presently innovation in this sector is increasingly demand driven. It is therefore increasingly important for companies to work closely with their customers in order to quickly exploit opportunities for innovation. Only adequate ICT infrastructure and e-business solutions can support this process.

Encourage standardisation and the development of sector-specific solutions, especially focusing on SMEs' needs

The variety of players and the amount of information exchanged along the sector value chain require coherent and efficient solutions for supply chain management. The low level of exchange of standardised data within the sector (as indicated by survey results) calls for support measures to improve existing and possibly develop new sector-specific standards, which facilitate information flows between firms. It is particularly important in this context to foster the migration toward emerging tools and standards which offer data access flexibility, openness, ease of use and low cost (XML/EDI). In particular, it will be necessary ensure the awareness on availability and functionality among micro enterprises and SMEs.

Exploit customer related information: encourage the access to relevant solutions

Firms' capability to collect and exploit information on sales and customers will depend upon the actual diffusion and usage of ICT. In particular, the development of CRM solutions will be conditional upon

the migration towards more sophisticated infrastructure and the availability of skills. In this respect it will be necessary to encourage diffusion and usage of ICT infrastructure as well as the related training in order to support the implementation of more sophisticated solutions.

Encourage ICT training, especially among micro and small enterprises and in the Accessing Countries

There is a strong case for supporting training in this sector. Current investments in ICT are limited and poorly directed. It will be important to encourage companies, especially smaller ones to regard training as a key investment. On the other hand, it will be important to make available tailored training programmes.

In the Accessing Countries, firms will have to be encouraged to fully exploit the e-business potential in the process of integration and modernisation. They will have to face a more demanding business environment than they were used to. In this context, ICT will play a key role in improving methods of production and distribution and access to information on markets and consumers.

References

e-Business W@tch (2003). The European e-Business Report 2003 edition. A portrait of e-business in 15 sectors of the economy. Second Synthesis Report of the e-Business W@tch. Luxembourg: Office for Official Publications of the European Communities.

DTI (UK Department for Trade and Industry), E-commerce Impact Study of the Footwear sector, 2002

Euratex. European Research in the Textile and Clothing sector. Common Strategy Paper. March 2000

Report on the promotion of competitiveness and employment in the European footwear industry (2001). Commission of the European Communities.

The textile and clothing industry in the EU. A survey. Enterprise papers N°2 , 2001. DG Enterprise. Available at <http://europa.eu.int/comm/enterprise/library/enterprise-papers/paper2>

Impact of electronic commerce on the textile industry. CELTTA, 2000

OECD, EBIP project. Textile-clothing sector in Italy. Future Centre Telecom Italia Lab, 2001. Available at www.oecd.org/dataoecd/41/11/2675551.pdf

Textile and Clothing Strategy Group, A National Strategy for the UK Textile & Clothing Industry, 2002

Web sources

European Confederation of Footwear industry, www.cecshoe.be

Euratex (European association of Textile Industries), www.euratex.org/

SATRA, (Shoe & Allied Trades Research association), www.satrapro.co.uk

Annex I: Methodological Notes on the e-Business Survey 2003

Background

Most of the data presented in this report are results of a decision-maker survey about e-business in European enterprises in 2003. This is an annual survey carried out by the *e-Business W@tch* – the first one took place in 2002 –, constituting a cornerstones of its monitoring activities. For organisational and contractual reasons, the e-Business Survey 2003 was split into two parts. The first part consisted of 3,515 telephone interviews which were conducted in March 2003 with decision-makers in enterprises from five EU countries. The second part had a scope of 4,570 interviews in the EU, 100 interviews in Norway and 2,632 interviews in the 10 new EU Member States (NMS) and was conducted in November 2003. The questionnaires used in the two parts of the survey were largely the same. A few new questions were added in the second part in order to cover issues of special topical interest for policy.

Fieldwork

The fieldwork of the surveys in the EU-15 and in Norway was carried out by Ipsos Germany in co-operation with its partner organisations on behalf of the *e-Business W@tch*. Fieldwork in the 10 new Member States was carried out by NFO Aisa (Czech Republic) and its network.

Country	Organisation	Country	Organisation
Belgium	INRA Belgium, Avenue de la Couronne 159-165, 1050 Brussels	UK	Continental Research, 132-140 Goswell Road, EC1V 7DY London
Denmark	Gallup TNS Denmark, Masnedogade 22-26, 2100 Copenhagen	Norway	Norfakta Markedsanalyse, Kjøpmannsgt. 5, 7013 Trondheim
Germany	INRA Deutschland GmbH, Papenkamp 2-6, 23879 Mölln	Cyprus	Synovate (member of the Aegis Group plc), Nicosia
Greece	Synovate, 24 Ippodamou St., 11635 Athens	Czech Republik	NFO AISA s.r.o., Slezská 113, 130 00 Praha 3, Česká republika
Spain	IPSOS ECO Consulting, Avda. de Burgos, 12-8a, 28036 Madrid	Estonia	Saar Poll, Veetorni 4, 10119 Tallinn, Estonia
France	Ipsos Insight Marketing, 99, rue de l'Abbé Groult, 75739 Paris Cedex 15	Hungary	MEDIAN, Opinion and Market Research, POB 551, BUDAPEST, H-1539
Ireland	TNS mrbi, Blackrock, Co. Dublin 2	Lithuania	BALTIC SURVEYS, 6A Šermukšnių str., Vilnius LT-2001, Lithuania
Italy	Ipsos-Explorer, Via Mauro Macchi 61, 20124 Milano	Latvia	TNS – baltic data house, Kronvalda Blvd. 3 – 2, Riga LV-1010, Latvia
Netherlands	INRA in Belgium, Avenue de la Couronne 159-165, 1050 Brussels	Malta	MISCO – Market Intelligence Services Co. Ltd., Valetta
Austria	Spectra Marktforschung: Brucknerstr. 3-5/4, 4020 Linz	Poland	CASE Consumer Attitudes & Social Enquiry, ul. Nowy Świat 64, PL 00-357 Warsaw
Portugal	Ipsos Portugal, Rua Joaquim António de Alguiar 43-5.º, 1070-15 Lisbon	Slovenia	CATI – Marketing, Media and Social Research & Consulting, Tržaška 2, 1000 Ljubljana
Finland	Taloustutkimus Oy, Lemuntie 9, 00510 Helsinki	Slovakia	NFO AISA s.r.o., Slezská 113, 130 00 Praha 3, Česká republika
Sweden	GfK Sverige, Box 401, 221 00 Lund		

Interview method

The fieldwork was carried out using mostly computer-aided telephone interview (CATI) technology. Face-to-face interviews were used in Lithuania, and a mixed approach in Malta. The decision-maker in the enterprise targeted by the survey was normally the person responsible for ICT within the company, typically the IT manager. Alternatively, particularly in small enterprises without a separate IT unit, the managing director or owner was interviewed.

Population coverage and sampling

The highest level of the population for the e-Business Survey was the set of all enterprises which are active at the national territory of one of the respective countries and which have their primary business activity in one of the sectors specified by NACE Rev. 1 categories (see table). The selection and composition of sectors took into account their economic importance and the relevance of e-business activities.

The most important viewpoints used for breakdown of the population in the survey were (i) the economic activity, (ii) the national territory of the enterprise and (iii) the size in terms of employees. The survey was carried out as an enterprise survey, i.e. data collection and reporting focus on the enterprise (rather than on the establishment), defined as a business organisation of one or more establishments comprised as one legal unit.

The sample drawn was a random sample of companies from the respective sector population in each country where the respective sector was to be surveyed with the objective of fulfilling strata with respect to company size class. Strata were to include a share of at least 10% of large companies (250+ employees) per country-sector cell, 30% of medium sized enterprises (50-249 employees) and 25% of small enterprises (10-49 employees). Micro enterprises with less than 10 employees were also included in the survey. Samples were drawn locally by fieldwork organisations based on acknowledged business directories and databases (see table).

Population coverage of the e-Business Survey (2002)			
No.	NACE Rev. 1		Sector Name
	Section	Division/Group	
01	D	17, 18, 19	Manufacture of textiles and textile products, leather and leather products
02	D	24, 25	Manufacture of chemicals and chemical products
03	D	30, 31 (except 31.3 - 31.6), 32	Manufacture of Electrical machinery and electronics
04	D	34, 35	Manufacture of transport equipment
05	D	Parts of (17-19), 20, (30-32), (34-35), 36, 45	Crafts And Trade: In addition to companies from sub-sections covered by other sectors: Manufacture of wood products; manufacture of furniture; construction and site preparation. Only enterprises with 0-49 employees.
06	G	52.11, 52.12, 52.4	Retail
07	H / I / O	55.1, 55.2, 62.1, 63.3, 92.33, 92.52, 92.53	Tourism
08	K	74	Business services
09	I / K	64.2, 72	Telecommunications and computer-related services
10	N	85.11, 85.12, 85.3	Health and social services

Country	Directory / Database	Country	Directory / Database
Austria	Herold BUSINESS MARKETING database	UK	Dun & Bradstreet
Belgium	Dun & Bradstreet	Norway	Dun & Bradstreet
Denmark	KOB (Købmandsstandens Oplysnings Bureau)	Cyprus	Census of economic activity
Germany	Heins und Partner Business Pool	Czech Republic	Merit – CDF, Meritum Software, Enterprises database 2003
Finland	Blue Book - TDC Hakernistot OY	Estonia	Estonian statistical bureau + Kredinfo (register of taxpayers)
France	IDATA, based on INSEE Siren file (the National Institute of Statistics) and other directories	Hungary	Company Information Data Store, provided by Hungarian Central Statistical office
Greece	ICAP directory (the major database for Greece)	Lithuania	Department of Statistics and National Register at Ministry of Economics
Ireland	Bill Moss	Latvia	Business Register of Republic of Latvia
Italy	Dun & Bradstreet	Malta	National Statistics Office, Employment and training corporation
Netherlands	Dun & Bradstreet	Poland	REGON (GUS) data (National register of business)
Portugal	MOPE database	Slovenia	IPIS directory, published by Noviforum (list of active Slovenian enterprises)
Spain	Dun & Bradstreet	Slovakia	Albertina, Albertina Data, Enterprises database 2003
Sweden	Swedish Post Address Register (PAR)		

Scope of the e-Business Survey 2003: No. of interviews per country and sector

Scope	Part I (March 2003)	Part II (Nov/Dec 2003)
No. of sectors covered	7 sectors	10 sectors
No. of EU Member States involved	5 countries	25 countries
No. of sector-country-cells	35	98
No. of interviews	3515	4670 (EU+NO) + 2632 (NMS) = 7302

	Food, beverages and tobacco	Textile industries	Chemical industries	Electronics	Transport equipment	Crafts & trade (Construction ; Wood & furniture)	Retail	Tourism	ICT services	Health & social services	Business services	Total int.
Belgium			101				100				100	301
Denmark							67	67		66		200
Germany	100*	100	100*	100*	100*	100	100*	101*	100*	100	100	1101
Greece		84		76	89	75		75				399
Spain	100*	101	100*	100*	100*	108	100*	100*	100*	101	100	1110
France	100*	100	100*	100*	101*	101	101*	99*	100*	100	100	1102
Ireland			70					70	71			211
Italy	102*	100	101*	101*	100*	100	102*	102*	101*	100	101	1110
Luxembourg **												0
Netherlands		100							101	102		303
Austria					68			132		100		300
Portugal					104		100				100	304
Finland		75		75					76			226
Sweden			80	75	79						80	314
United Kingdom	100*	100	101*	101*	100*	100	101*	100*	101*	100	100	1104
Cyprus							64					64
Czech Republic			60		60			60	60	60		300
Estonia		50	50	50	21	65	50	50	50	50	50	486
Hungary				80	80						80	240
Lithuania							57					57
Latvia		51	49				51					151
Malta								51				51
Poland		80	80	80	80	80	80	80	80	80	80	800
Slovenia				56				51	53	55	58	273
Slovakia		50		50			50				60	210
Norway		30					70					100
TOTAL	502	1021	992	1044	1082	729	1193	1138	993	1014	1109	10817

* interviews carried out in March 2003 ** was covered in the e-Business Survey 2002

Problems encountered

No major problems were reported by the fieldwork organisations with respect to interviewing (e.g. comprehensibility of the questionnaire, logical structure). The overall feed-back from the survey organisations was that fieldwork ran smoothly and that they had the impression that the questionnaire was well understood by most respondents. Some difficulties occurred, though, mainly with respect to the following issues:

- The main challenge was the fulfilment of quotas regarding company size-bands. In many countries, it was not possible to accomplish the objective of including a minimum share of large or even medium-sized enterprises in specific sectors. In such a case, these were replaced by interviews with smaller companies or from other sectors.
- Another well known issue in this type of survey stems from the difficulties of conducting research projects among ICT decision-makers in general. Dedicated ICT professionals are heavily researched and therefore securing their participation can be difficult. This is a particular problem in larger companies.
- In some countries it was difficult to carry out interviews within businesses and retailers not using or with a very basic use of computers, because of the number of questions on related issues. The French fieldwork

organisation, for instance, reported that the questionnaire was too specific for some organisations, for example for small companies in the health & social services sector. These are mostly doctor's surgeries, where it was felt that the e-business related questions were not applicable to them. Also, small companies from the crafts' & trade sector, which often have just a computer but no network at all felt that the questionnaire was not sufficiently adapted to their activities.

- A related issue is that there are some compromises to be made if the same questionnaire should be used for micro-enterprises as well as for large companies. Some of the questions, while only scratching the surface of e-business activities in large companies, are hardly relevant for micro-enterprises with less than 10 employees. The Hungarian survey company, for instance, reported that some questions seemed to have little relevance for companies with only one or a few employees.
- Finally, an issue which was known in advance but is unavoidable in telephone interviews is that there is no "ideal target person" to be interviewed. Fieldwork organisations reported that sometimes a data processing manager is not very aware of the consequences of e-business on the whole of the company, on the personnel and on the financial level. On the other hand, the general manager may not always be aware of the technical implementation status. The Irish fieldwork organisation, for instance, reported that some of the smaller companies were not familiar with technical terms such as used for standards ("EDI" or "EDIFACT").

Weighting principles

Two weighting schemes have been applied: weighting by employment and by the number of enterprises. Data are presented in either way depending on the kind of the analysis to be made.

- Values that are reported as weighted by employment should be read as "enterprises comprising x% of employees". To give an example: The indicator "percentage of companies selling online" – if weighted by employment – is defined as "companies comprising x% of employees sell online". The reason for using employment weighting is that there are very many more micro enterprises than non-micro enterprises. The unweighted figure would effectively represent mainly the smallest sizes of firm.
- Values that are reported as enterprise-weighted figures are to be read as "x% of enterprises", reflecting the number of enterprises as legal entities but not their relative economic importance in terms of employment.

Weighting was based on the latest available universe figures by Eurostat. Missing or undisclosed universe data had to be imputed. The imputation procedures depended on auxiliary or proxy data availability, taking into account where available information about higher industry aggregations, nearest neighbour data, turnover-employment correlation and secondary sources other than Eurostat. It also allowed for the constraint of predetermined ranges such that imputed data had to be contingent with published sectoral, national and European universe totals as well as for final plausibility checks for every single imputed data item. The weighting cells correspond to the data reporting pattern used as regards industries and employment size-classes. Uniform expansion factors are applied to enterprises within one of the four size-classes per industry per country. As for data that refer to a base other than the universe of all enterprises (e.g. indicators appropriately reported for online selling enterprises only), expansion factors are adjusted to the different shares of observations per cell that build the computation base.

Variables - indicators

The set of ICT and e-business indicators for which data were collected in this survey was organised into the following modules:

- Background information (basic company data, innovation activities)
- ICT infrastructure and e-skills development in the company
- E-commerce and e-business activities (internal business process automation, procurement and supply chain integration, exchange of standardised data between trading partners, marketing and sales activities, use of e-business software)
- Impact of e-business (impact of selling and procuring online, perceived effects on work processes, satisfaction with outcome)
- Assessment of future importance of various e-business technologies

The choice of indicators considers relevant statistical work by the OECD and Eurostat and includes a basic set of widely accepted measures for e-commerce and e-business, but also tries to introduce innovative indicators which have a pilot character and are not yet widely tested.

The full list of variables which was the basis for preparing the questionnaires can be downloaded (as a spreadsheet) from the *e-Business W@tch* website (<http://www.ebusiness-watch.org>).

Annex III: Glossary of Technical Terms

Term	Definition
Access	The ability to retrieve information and to communicate online through the use of digital information and communication technologies.
B2B	Business to Business. Electronic transactions between companies.
B2B e-marketplace	Electronic trading platforms on the Internet where companies can sell and/or buy goods or services to/from other companies. They can be operated by a single buyer or seller or by a third party. Many marketplaces are industry-specific. Some marketplaces require registration and membership fees from companies that want to conduct trade on them.
B2C	Business to Consumer. Electronic business processes between companies and consumers.
Bandwidth	The physical characteristic of a telecommunications system that indicates the speed at which information can be transferred. In analogue systems, it is measured in cycles per second (Hertz), and in digital systems in binary bits per second. (Bit/s).
Broadband	High bandwidth internet access. In this report, broadband is defined as the capacity to transfer data at rates of 2Mbit/s (megabits per second) or greater.
Channel	In communications, a physical or logical path allowing the transmission of information; the path connecting a data source and a receiver.
CRM	Customer Relationship Management. Software systems that promise the ability to synthesize data on customers' behaviour and needs and thus to provide a universal view of the customer.
Dial-up	The process of establishing a temporary connection (to the Internet) via the switched telephone network.
DSL	Digital Subscriber Line. A family of technologies generically referred to as DSL, or xDSL, capable of transforming ordinary phone lines (also known as "twisted copper pairs") into high-speed digital lines, capable of supporting advanced services. ADSL (Asymmetric Digital Subscriber Line), HDSL (High data rate Digital Subscriber Line) and VDSL (Very high data rate Digital Subscriber Line) are all variants of xDSL.
E-business	Electronic business. The <i>e-Business W@tch</i> uses the term "e-business" in the broad sense, relating both to external and to company internal processes. This includes external communication and transaction functions, but also ICT supported flows of information within the company, for example, between departments and subsidiaries.
E-commerce	Electronic commerce. As distinct from the broader concept of e-business, e-commerce refers to external transactions in goods and services between companies (B2B), between companies and consumers (B2C), or between companies and governments (B2G) and may therefore be seen as a subgroup or component of e-business activities.
EDI	Electronic Data Interchange. A way for unaffiliated companies to use networks to link their businesses by using a common technical standard for exchanging business data. While electronic mail between companies is common, electronic data interchange passes bigger bundles that replace large paper documents such as bills and contracts. Besides saving paper, computers could save time by taking over transactions such as regular purchase orders that now require human intervention.
E-readiness	Readiness for e-business is defined as the capability to engage in electronic transactions. This comprises appropriate network access (including sufficient bandwidth), internal hardware and software solutions as well as the procedural and managerial readiness to deal with online transactions from simple web presence through to fulfilment of customer orders and related after sales services.

ERP	Enterprise Resource Planning. A software system that helps to integrate and cover all major business activities within a company, including product planning, parts purchasing, inventory management, order tracking, human resources, projects management, and finance.
Extranet	A network using Internet protocols that allows external organisations (for example customers or suppliers) access to selected internal data. Essentially it is an Intranet which gives external users restricted access (often password protected) to information through the firewall.
ICT	Information and communication technology. ICT includes networks, computers, other data processing and transmitting equipment, and software. The application of ICT in business processes leads to e-business, if non-proprietary networks are used.
Information security	Measures taken to protect information systems against unauthorised use and attacks
Internet	The world's largest computer communication system, with an estimated 600 million users worldwide. ⁵ The Internet is a loose confederation of principally academic and research computer networks. It is not a network but rather the interconnection of thousands of separate networks using a common language.
Interoperability	The technical features of a group of interconnected systems (includes equipment owned and operated by the customer which is attached to the public telecommunication network) which ensure end-to-end provision of a given service in a consistent and predictable way.
Intranet	An internal Internet, that is an internal network running using TCP/IP, which makes information available within the company. Most intranets are connected to the Internet, and use firewalls to prevent unauthorised access.
ISDN	Integrated Services Digital Network. An international telecommunications standard for transmission of voice and data over dial-up lines running at 64 Kbit/s (kilobits per second). It allows sharing of multiple devices on a single line (for example, phone, computer, fax).
LAN	Local Area Network. The most common way of connecting computers in a small area (typically inside a building or organisation) for sharing databases and communication facilities. The two most common versions are Ethernet and Token Ring. Implementation is based on coaxial cables or plain wires. Speed achieved ranges from 10 Mbps to 100 Mbps.
Leased line	A private communication channel leased from the common carrier. It is usually a dedicated fixed-route link (e.g. point-to-point frame relay).
M-commerce	Mobile commerce. E-commerce that takes place using mobile connection devices and through data transmission via technical standards for mobile communication.
Micro enterprise	A company with less than 10 employees.
Modem	Modulator/Demodulator. A device that modulates outgoing digital signals from a computer or other digital device to analogue signals suitable to be transmitted through a conventional telephone line (copper twisted pair telephone). The reverse procedure takes place for incoming signals.
MRO goods	Maintenance, repair and operating goods. Supplies which companies need to maintain their operations, for example office supplies, in contrast to "direct production goods" which are components of the goods and services the company produces.
Processes	Business processes are operations that transform the state of an object or a person. This can, for example, be an order placed via the internet. Ordering an object or a service creates a liability for the supplier to deliver, and initiates the transfer of property

⁵ cf. Nua Internet Surveys, How many online, June 2003
(http://www.nua.com/surveys/how_many_online/index.html).

	rights from one entity to another. The electronic handling of processes is likely to speed them up and to introduce new processes in the realisation of the same transaction.
Remote access	The ability of a company computer network's transmission points to gain access to a computer at a different location.
SCM	Supply Chain Management. Software that helps businesses to match supply and demand through integrated and collaborative planning tools.
Sector	Sectors of the economy with comparable business activities. These constitute the main research unit of the <i>e-Business W@tch</i> . Aggregated information at the industry level is used to document the diffusion of activities within the industries as well as the overall importance of the observed phenomena for changes in the economy as a whole. The definition of sectors follows NACE Rev.1 classifications.
SME	Small and medium-sized enterprises with 0-249 employees. To be classed as an SME, an enterprise has to satisfy the criteria for the number of employees and one of the two financial criteria, i.e. either the turnover total or the balance sheet total. In addition, it must be independent, which means less than 25% owned by one enterprise (or jointly by several enterprises) falling outside the definition of an SME or a micro-enterprise, whichever may apply. The thresholds for the turnover and the balance sheet total will be adjusted regularly, to take account of changing economic circumstances in Europe.
Transaction	Electronic transactions can be subdivided into several steps, each of which initiates a process. There are pre-sale (or -purchase) phases, sale and after-sale phases. Typically a transaction starts with information gathering, price and quality comparisons and possibly pre-sale negotiations. During the sale phase contracting and delivery are the core processes, and payment is the final stage of this phase. After-purchase transaction stages comprise customer service, the administration of credit payments and the handling of returns as well as marketing activities preparing for the next purchase.
Value added	Gross output minus intermediate inputs. It is valued at producers' prices and includes all indirect taxes but excludes VAT and subsidies.
WAN	Wide Area Network. A network allowing the interconnection and intercommunication of a group of computers over a long distance.
WAP	Wireless Application Protocol. A communication protocol for delivering data over mobile telephone systems, allowing cellular phone sets and other mobile hand-set systems to access WWW pages and other wireless services.
Website	A related collection of World Wide Web files that includes a beginning file called a home page.
Wi-Fi	Short for "wireless fidelity", popular term for a high-frequency wireless local area network (W-LAN). Wi-Fi technology is rapidly gaining acceptance as an alternative or complementary infrastructure to a wired LAN.
W-LAN	Wireless Local Area Network. An implementation of a LAN with no physical wires, using wireless transmitters and receivers. It allows a mobile user to connect to a LAN or WAN through a wireless (radio) connection. A standard, IEEE 802.11, specifies the technologies for wireless LANs.
WWW	World Wide Web. The collection of pages in html format which reside on web-servers. Although WWW and the internet are different, the terms are increasingly becoming interchangeably used.

Annex III: Sector Impact Studies of the e-Business W@tch in 2003/04

No.	Sector	Date
1	Textile, clothing and footwear industries	
	<ul style="list-style-type: none"> • Report I: The Quantitative Picture: Diffusion of ICT and e-business in Europe • Report II: Assessment and Case Studies: Economic implications and policy recommendations. 	<p>May 2004</p> <p>August 2004</p>
2	Chemical industries	
	<ul style="list-style-type: none"> • Report I: The Quantitative Picture: Diffusion of ICT and e-business in Europe • Report II: Assessment and Case Studies: Economic implications and policy recommendations. 	<p>May 2004</p> <p>August 2004</p>
3	Electrical machinery and electronics	
	<ul style="list-style-type: none"> • Report I: The Quantitative Picture: Diffusion of ICT and e-business in Europe • Report II: Assessment and Case Studies: Economic implications and policy recommendations. 	<p>May 2004</p> <p>August 2004</p>
4	Transport equipment manufacturing	
	<ul style="list-style-type: none"> • Report I: The Quantitative Picture: Diffusion of ICT and e-business in Europe • Report II: Assessment and Case Studies: Economic implications and policy recommendations. 	<p>May 2004</p> <p>August 2004</p>
5	Crafts' and trade sectors	
	<ul style="list-style-type: none"> • Report I: The Quantitative Picture: Diffusion of ICT and e-business in Europe • Report II: Assessment and Case Studies: Economic implications and policy recommendations. 	<p>May 2004</p> <p>August 2004</p>
6	Retail	
	<ul style="list-style-type: none"> • Report I: The Quantitative Picture: Diffusion of ICT and e-business in Europe • Report II: Assessment and Case Studies: Economic implications and policy recommendations. 	<p>May 2004</p> <p>August 2004</p>
7	Tourism	
	<ul style="list-style-type: none"> • Report I: The Quantitative Picture: Diffusion of ICT and e-business in Europe • Report II: Assessment and Case Studies: Economic implications and policy recommendations. 	<p>May 2004</p> <p>August 2004</p>
8	ICT services	
	<ul style="list-style-type: none"> • Report I: The Quantitative Picture: Diffusion of ICT and e-business in Europe • Report II: Assessment and Case Studies: Economic implications and policy recommendations. 	<p>May 2004</p> <p>August 2004</p>
9	Business services	
	<ul style="list-style-type: none"> • Report I: The Quantitative Picture: Diffusion of ICT and e-business in Europe • Report II: Assessment and Case Studies: Economic implications and policy recommendations. 	<p>May 2004</p> <p>August 2004</p>
10	Health and social services	
	<ul style="list-style-type: none"> • Report I: The Quantitative Picture: Diffusion of ICT and e-business in Europe • Report II: Assessment and Case Studies: Economic implications and policy recommendations. 	<p>May 2004</p> <p>August 2004</p>