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Critical Issues Pertaining to the Code of Practice for Global E-work

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VIP – Voluntary Industrial Code of Practice for
IST-enabled Cross-border Work Arrangements
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CONTENT

Summary

The development and diffusion of computer-related information and communication technologies has had an enormous impact on the organisation of business and employment relationships. Not only have global business contacts increased in numbers and size to a large extent, but also completely new kinds of work arrangements have developed, consisting of virtual co-operation between spatially dispersed co-workers and company departments. In social science research, these arrangements have commonly been termed either "e-work" – referring to co-operation between remote individuals or departments – or "e-collaboration", referring to co-operation in virtual teams.

Since employment legislation is only just beginning to catch up with specific aspects of e-work and e-collaboration, the VIP project aims at developing a Code of Practice covering the most important e-work-related issues and making a step towards common standards for global e-work arrangements. The most important aspects singled out within the project and presented in the main chapters of the current code draft are:
- e-work conditions,
- data protection, security and integrity,
- work technologies and tools,
- contribution to progress in countries of operation and
- environment.

In this report, we present material on issues pertaining to these aspects including
- findings from international social scientific research,
- findings concerning existing legislation and its limits,
- arguments from ethical discussions,
- selected case studies,
- useful formulations from existing codes, and
- results of qualitative interviews CSI conducted with experts and e-workers regarding their personal viewpoints and experiences.

This paper consists of two parts. In **Part A**, acting as a starting point, we develop a more detailed definition of e-work and e-collaboration, contrasting them with similar theoretical concepts like "telework" or "online-work", and then present general findings on the frequency of e-work and e-collaboration arrangements in different parts of the world.

The report continues with **Part B**, in which we discuss relevant e-work issues following the structure shown in the figure below, that is, specifically addressing the items in the

draft version of the code of conduct for global e-work. Part B consists of 10 chapters. Although any one chapter refers to several others, the single chapters are not necessarily presented according to any logical sequence. Thus, to make this report user-friendly, any chapter in Part B can be read without details being required from any other, according to individual interests.

Within this report, we do not discuss issues in the context of environmental control that are also part of the draft code. This is due to the existence of a large amount of literature dealing with ecological and sustainability matters in both the national and international perspective.

Figure S.1 Structure of the code for global e-work (5 chapters) and Part B of this report (10 chapters)

	Main issues / relevant discussions	National and / or cross-border issue	Some relevant initiatives
1. *E-working conditions* • B.1 Teleworking conditions • B.2 Quality of work and employment	• telework and e-work conditions • knowledge work conditions	• both • both	• e.g. guidelines for telework in Europe
2. *Data protection* • B.3 Electronic Monitoring • B.4 Protection of IPR	• surveillance and privacy at work	• both	• EU directives, online rights initiatives
3. *Working technologies* • B.5 Usability of workplace • B.6 Virtual collaboration • B.7 IT-Training	• management of tele-collaboration	• both	• EU directive, ISO and other standards, online associations
4. *Host country progress* • B.8 Cross-cultural diversity • B.9 Digital divide • B.10 Core labour rights	• CSR on societal, technological, business development	• cross-border	• many, e.g. on IT issues like digital divide
5. *Environmental control*	• sustainability	• both	• many, e.g. www.gesi.org

In chapter **B.1**, individualised modes of remote work outside a company's office premises are examined – i.e. full-time or occasional home-based telework. After an empirical overview of the socio-economic characteristics of teleworkers, typical phenomena and problems arising from individualised remote work are identified. The chapter con-

tinues with a summary of the discussion on legal frameworks for individualised telework, closing with case studies and a good model code of practice for telework.

E-work can be divided into individualised and office-based modes. Whereas in chapter B.1 crucial matters involved in individualised forms of telework are investigated, it is clear that office-based e-workers share some of the characteristics of white-collar workers or knowledge workers in general. Hence, chapter **B.2** gives an overview of the most relevant aspects of employment and job quality with a focus on knowledge workers.

Chapter **B.3** is devoted to data protection and privacy in the context of the emerging possibilities of electronic performance monitoring and work surveillance. We outline what kinds of data maybe obtained using the present technical possibilities, then review evidence concerning the actual use of these possibilities, what reasons employers have for using them and what effects electronic performance monitoring has on employee productivity and well-being. We furthermore sketch the legal situation with regard to personal data protection in different parts of the world and review ethical discussions regarding the relationship between monitoring needs and individual privacy rights.

Chapter **B.4** addresses the possibility of claiming intellectual property rights on work outcomes in the context of computer-related products and online data exchange. We explore what measures may be taken to render corporate data traffic secure and how IPRs on computer-related products may be properly shared between developers and their companies. We sketch relevant national and international legislation and review existing discursive and case-study-based material.

In Chapter **B.5**, we examine the potential impact of working at computer workstations upon the health and well-being of e-workers. We report findings on the quantity of health problems connected with computer work and on both behavioural and technical factors contributing to them. We also give a sample ergonomic principles and guidelines that have been developed in response to these problems and then provide a summary of findings concerning both the diffusion and the effects of such principles. The chapter is completed by legislation reviews and case-study material.

Within chapter **B.6**, following a general assessment of virtual collaboration, teamwork in virtual environments is examined. First, obstacles and success factors for virtual teams in general, and second, aspects of virtual teams that collaborate over national borders and across different cultures are discussed.

Chapter **B.7** deals with IT training as a central prerequisite for individual and corporate success in a business world largely founded on computer technology. We review findings concerning the present IT training market in different national contexts, future prospects, employers' reasons for investing in IT training and returns on training investments. We furthermore discuss related ethical issues including the repayment of training costs after the end of an employment relationship and the applicability of training content beyond an employee's current position.

When operating worldwide, companies need to understand cross-cultural diversity. The central concern of chapter **B.8** is to describe how different cultures can influence business behaviour. For example, promoting implementation of codes of conduct that do not seriously respect different cultural perspectives risks widening misunderstandings and setting the stage for hostilities that could otherwise have been avoided.

Businesses as corporate citizens play a major role in the economic, social and cultural development of industrialised and developing countries alike. Chapter **B.9** does not intend to give a detailed picture of the activities companies are involved in toward societal development in all areas of interest. Instead, we refer to one specific aspect of corporate responsibility in the context of global e-work, namely the contribution toward reducing the digital divide between industrialised and developing countries.

Whereas in chapters B.1 to B.9 topics related to e-work in the context of the global knowledge-based economy are treated, chapter **B.10** discusses fundamental worker rights such as collective bargaining. Although issues such as forced labour or child labour are hardly relevant for the target group of white-collar workers whom the global code for e-work addresses, basic labour rights are, nevertheless, of central importance for working conditions in the knowledge-based economy.

Within this chapter we first want to clarify what e-work is all about as compared to concepts such as telework, online work, knowledge-based work or even white collar work. Second, target groups for e-work, that is, those to whom a global code for e-work would apply, are defined. Following this, empirical overviews on the extent of e-work in industrialised countries as well as in developing or newly developed countries are presented. The empirical evidence on the diffusion of e-work is nonetheless still very fragmentary, and this is especially true for developing countries. The most relevant source of data for developing countries used in this report is the World Employment Report 2001 by the ILO. Part A of this report serves as a theoretical and empirical basis for Part B, in which 10 critical issues on working conditions within the context of global e-work are to be examined.

A.1 What is e-work?

First of all, it should be stated that certain attempts to define e-work have produced more confusion than clarity. This is due to the fact that several relevant discourses have been taking place parallel to one another, each with its own specific tradition as well as target groups upon which it focuses. The most popular concept in the last decade in the area of "distance working facilitated by information and communication technologies" has been "teleworking", in which case the target groups discussed are primarily individual teleworkers, working away from the office premises of a company, i.e. full-time or occasional, home-based teleworkers or multi-locational workers, whether employees or self-employed. The European Commission has also used the framework of teleworking, focusing on individual remote workers. Thus, teleworking has been defined as "work performed by a person (employee, self-employed, home-worker) mainly or for an important part at (a) location(s) other than the traditional workplace for an employer or a client, involving the use of telecommunications and advanced information technologies as an essential and central feature of the work" (cf. Blanpain 1997).

Within recent years, discussions on teleworking have not been superseded by the framework of e-work, but become more specific and at the same time enhanced by it (cf. European Commission, Status Report on e-work 2001). In a very broad definition, e-work "encompasses any work which is carried out away from an establishment and managed from that establishment using information technology and a telecommunications link for receipt or delivery of the work" (Huws 2001: 22). Hence, the use of the term "e-work" in the place of "telework" includes not only individual, remote home-

workers and mobile workers, but also groups of workers based in the same remote locational, such as "back-office" staff located in a call centre. Yet it should be noted that call-centre staff was also a subject of the older telework discussion, specifically in the case of call centres using home-based staff as agents, each connected to the central call-handling system using telecom links. Using home-workers in this way (which can provide staffing flexibility, particularly at peak times) has been described as creating "virtual call centres" (Di Martino 2001: 13).

Within the EMERGENCE-project (www.emergence.nu), e-work has been moved into an overall framework involving relocation or tele-mediated, controlled remote work, be it domestic or cross-border relocation. Hence, e-work is work that is done outside of a "source" or demand location (i.e. where the tasks come from or are managed from) by a "destination" or supply location (i.e. where the relocated e-work tasks are carried out). According to the figure below, destination locations may be individual (employed or self-employed) teleworkers away from office premises (at home, multi-locational etc.) or a workforce on shared office premises belonging to the company or a contractor, i.e. external employees.

Figure A.1.1: Typology of e-work

		Contractual variations	
		Internal/employees	**External/outsourced**
Variations in type of workplace	**Individualised** (away from "office" premises)	• Employed tele- or at-home-workers • Mobile employees	• Freelance or mobile workers
	On shared "office" premises	• Remote back offices / call centres • Employees working on other, third-party premises	• Specialist business service supply companies • Outsourced call centres

Source: Huws / O'Regan 2001: 5

According to EMERGENCE, typical business areas identified as relevant for domestic and trans-national forms of e-work are:
- sales (telemarketing and mobile sales)
- customer services, including providing information, counselling and advice to the public or to business customers (call centres)
- data processing, typing and other forms of data input
- creative or content-generating work including research and development, design, editorial work and multimedia production

- software development, maintenance and support
- general management, human resources management and training
- accounting, debt collection and other financial services (cf. www.emergence.nu)

Definitions of e-work that only include modes of tele-mediated work, that is, remote-controlled and/or relocated, seem to be too narrow in the light of global outsourcing and co-sourcing activities in the network economy. Thus, this framework should be enhanced by relevant concepts such as collaborative e-work, tele-cooperation or virtual teamwork. If all workers who do some sort of tele-cooperation with co-workers from distant locations are included in the definition of e-work, the proportion of e-workers to the whole working population in Europe is by far higher than assumed up to now. According to the ECATT-survey, carried out in 1999, comparing the share of teleworkers to the percentage of those involved in tele-cooperation leads to the following results (cf. www.ecatt.com): whereas all teleworkers in the EU10 (Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Spain, Sweden, U.K.) account for 6.1% of the labour force, workers who occasionally or regularly tele-cooperate with co-workers make up about 35% of all workers! (More detailed empirical figures on tele-working, e-working and tele-cooperation are presented within this chapter below.)

Definition of e-work

In summary, we define e-work as any mode of work organisation within a country or between countries practising

- telemediated, controlled, remote work (individualised/isolated or office-based)
- telemediated, collaborative work (tele-cooperation, virtual teams)

Using this definition, e-work can be distinguished from similar concepts that are either more restricted or more widespread:

Figure A.1.2: e-work and similar theoretical concepts

Telework
Individualised/isolated,
home-based or mobile

E-work
any telemediated, controlled, remote work
or telemediated, collaborative work

Online work
i.e. including just having access to eMail,
Intranet or Internet at the workplace

Knowledge-based work
with or without computers

White collar work
vs. blue collar work
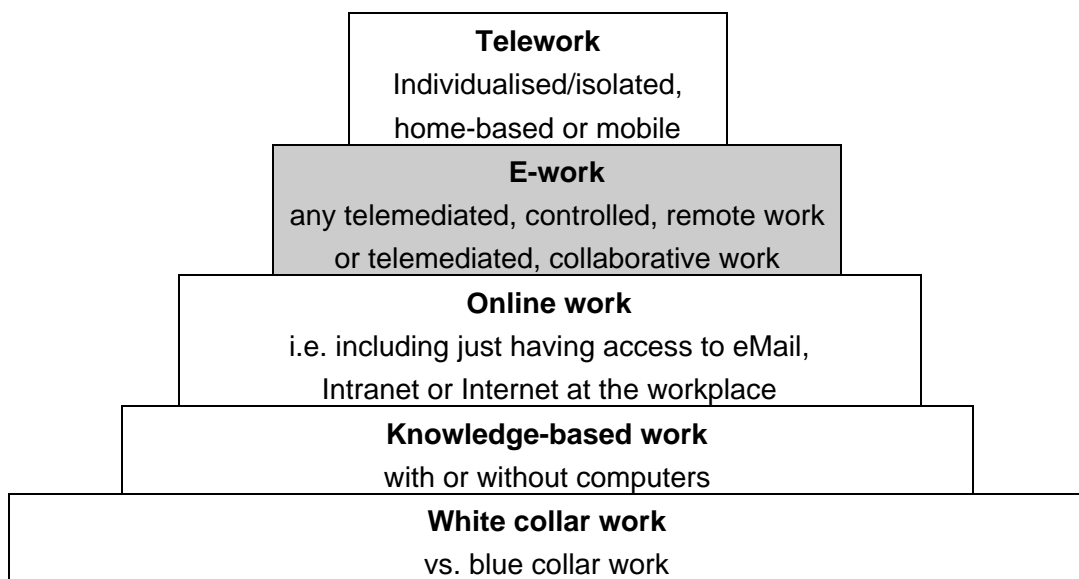
A.2 Who should be covered by a voluntary code for global e-work?

While it is not possible to quantify the extent of the workforce to be covered by a global code for e-work, target groups can be specified. Multi-national companies should, of course, be surveyed, as they have the largest potential for providing fair employment standards and working conditions, occupational health and safety policies and participation in training programs. For a MNC, the strongest argument for integrating its e-workforce dispersed over countries and continents, is not only to improve workers' job satisfaction, but also to increase productivity and output by means of fair arrangements, thus strengthening commitment to the company (cf. Schwepker 2001).

Recent estimates assume that about 45 million people were working for approximately 65,000 MNCs and their subsidiaries around the world in 2000, most of the headquarters being located in industrialised countries (cf. Kluge 2001). There is no indication as to how many of these workers can be viewed as knowledge workers or even e-workers. According to the ILO (2001: 111), "information" workers (as compared to non-information or manual workers) can be divided into data workers and knowledge workers (only those generating ideas and new knowledge). According to this definition, the number of knowledge workers has increased substantially over the past few years. For example, in the United States, their number increased by 2.5 million – 18 per cent of all new jobs created – between 1990 and 1998. The "networking economy" will accelerate the growth of the "knowledge economy", since networking promotes the sharing of knowledge by expanding access to the inexhaustible pool of knowledge from which more knowledge can be created. With this in mind, it is not surprising that around 35% of the workforce within the EU are involved in some sort of tele-cooperation. Moreover, more detailed figures given below show that the larger the company, the higher, in general, the proportion of employees involved in tele-cooperation with co-workers within the company or with externals.

Coverage of the global code for e-work

The workforce to be covered by the global code of e-work to be endorsed by MNCs, is, on the one hand, all persons doing some sort of e-work for a MNC, its subsidiaries and suppliers. On the other hand, the specific types of e-workers to be protected, as compared to on-site employees at the parent company, can be classified as follows:

Parent company on-site employees ←→ e-workers in any country of operation

- e-employees in office-type premises of all distant units and subsidiaries of a multi-national company
- e-employees in non-office-type premises; i.e. individualised/remote home-workers or multi-locational workers
- e-lancers and self-employed; i.e. external or outsourced staff

- e-employees of suppliers and subcontractors of a multi-national company

At this point, a short treatment of the main causes and effects of the so-called "knowledge-based economy" or "networking economy" would be beneficial. The causes of current changes in the whole labour market system (external flexibility) as well as in organisations (internal flexibility) are varied, and here only some keywords can be stated, hinting at complex interdependence.

Macro level of economies:

- Politically motivated steps toward liberalisation since the 1970s have led to increasing economic globalisation and caused improvements in competition in almost all economic fields.
- The growth in the service sector is increasing economies' dependence on knowledge, a dependence which is developing steadily due to the dynamic innovation provided by the computer, telecommunication and multimedia industries. The use of knowledge as a resource has, therefore, become the central factor of production.
- Individualisation and variation of lifestyle archetypes are causing changes in social structures and differentiated value attitudes and lifestyle practices (cf. Castells, 1996).

Meso level of companies, especially MNCs:

- International or global conditions of competition in markets as well as regulation are making for institutional convergence.
- Regional diversity of subsidiaries, their contexts, markets and environments are making for persistent organisational divergence (cf. Harzing and Sorge, 2001).

Micro level of workplaces:

- Decentralisation of organisational forms are leading to boundaries between independent and dependent working contracts (employed, atypical employed, self-employed, freelancing) being blurred.
- Virtualisation of working relations is leading to different forms of e-work organisation in terms of space arrangements and working time (anytime, anywhere).
- Work organisation models are at a crossroads, i.e. rise in taylorist forms of organisation (low autonomy, low participation in decision-making) as well as post-taylorist forms of organisation (high autonomy, strong co-operation with participation in decision making; semi-autonomous team work), (cf. Bosch 2000, for Germany).

All factors mentioned accelerate social change and tend to put a strain on the adjustment framework of national welfare states; supranational "compensation" in the form of re-adjustment is about to take place. Hence, working life is increasingly influenced by the growing importance of knowledge-based work and results-oriented forms of control and coordination. Conversely, the systems for regulating labour and representing interests which developed in industrialised societies, designed mostly to meet the needs of industrial workers for representation and protection, no longer seem adequate (Töpsch / Menez / Malanowski 2001: 306).

New modes of work organisation involving e-work also raise a lot of questions for companies, e.g. how to establish control and co-operation in the light of global business activities by using ICT networks toward integrating complex patterns of value chains

and a culturally diverse workforce spread across different countries and continents. Especially those working at a distance from the company headquarters either on subsidiaries' or suppliers' premises or even as "stand-alone" workers need to be better integrated, as compared to on-site workers on premises where the work is managed from. Whereas within the borders of well-industrialised economies at least some aspects of e-work are regulated by labour and social security legislation, other problems may arise in the face of e-work across borders. Moreover, e-work across borders can be sub-divided into "trans-border" and "offshore" e-work (Di Martino 2001: 12). Trans-border e-work generally applies to situations where the provider and receiver of work are located in countries that share a common border (e.g. Germany/France or Germany/Poland); thus, there is a kind of proximity despite working at a distance. Offshore e-work across continents usually refers to work that has been transferred to lower-cost or less-regulated working environments, generally much more distant in geographical terms. Regulation of work arrangements across countries and continents still has a long way to go (→ chapter B.1).

Table A.2.1: Some typical problems in companies participating in the networking economy

Individuals	Organisation
Work demands increase, more pressure	Competition increases, lifecycle of products shortens
Greater competence and demands lead to stronger wishes for self-determination and participation	The changing economic structure alters the nature of work, making it into knowledge work
Optional and at the same time compulsory self-organisation	Decentralisation of control from direct to indirect control (management by objectives)
Increasing worker income from different sources (e.g. stock options)	Differentiation between core and peripheral staff
Tendency towards individualised representation of interest	Higher staff turnover, drop-out rate
Differentiation of values and lifestyles	Difficulty in creating trust and integration (diversity management)
Work becomes more and more important for individual identity and social integration	"Good" organisational climate and corporate identity as an advantage to productivity
Job satisfaction is a decisive basis for individual identity	Workers loyalty/commitment is a decisive basis for business success

A.3   Empirical findings on e-work in industrialised countries

A.3.1 Empirical findings on remote, controlled e-work in industrialised countries

According to various studies, teleworking is expanding. Recent surveys covering the teleworking situation in the European Union, such as the Third European Survey on Working Conditions 2000 (Paoli/Merllié 2001), reveal that teleworking is no longer an exceptional phenomenon. When restricting the focus to teleworking at home, tele-working on a full-time basis is carried out by just over 1% of the working population in the European Union, whereas occasional teleworking is more widespread (5% of workers). One self-employed person in ten and 4% of all employees telework during at least one quarter of their time. As figure A.3.1 shows, there are wide disparities be-tween European countries, with the UK and northern European countries having the highest number of persons teleworking at least one quarter of the time. These country differences correspond to those regarding the general use of computers at workplaces.

Figure A.3.1: Individuals teleworking from home (by country); Paoli/Merllié 2001: 8
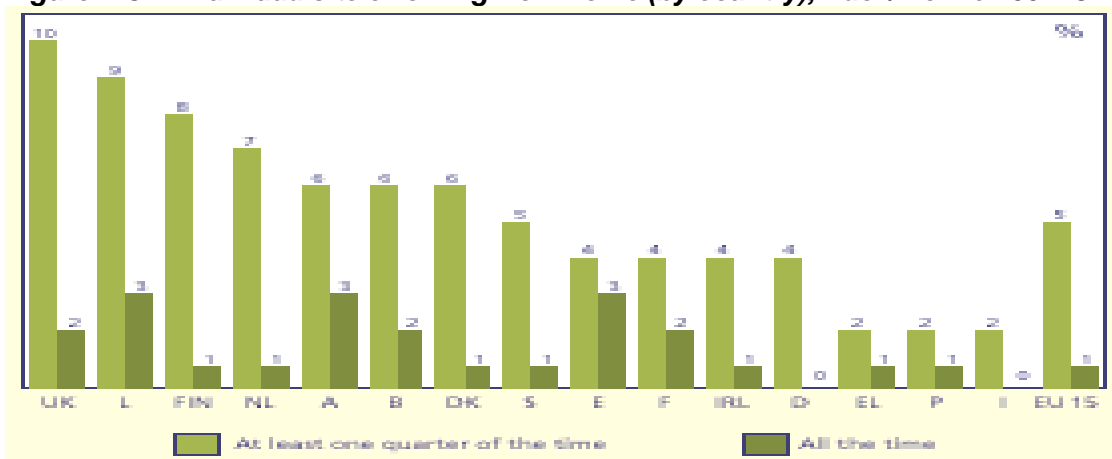
Figure A.3.2: Individuals working with computers (by country); Paoli/Merllié 2001: 8
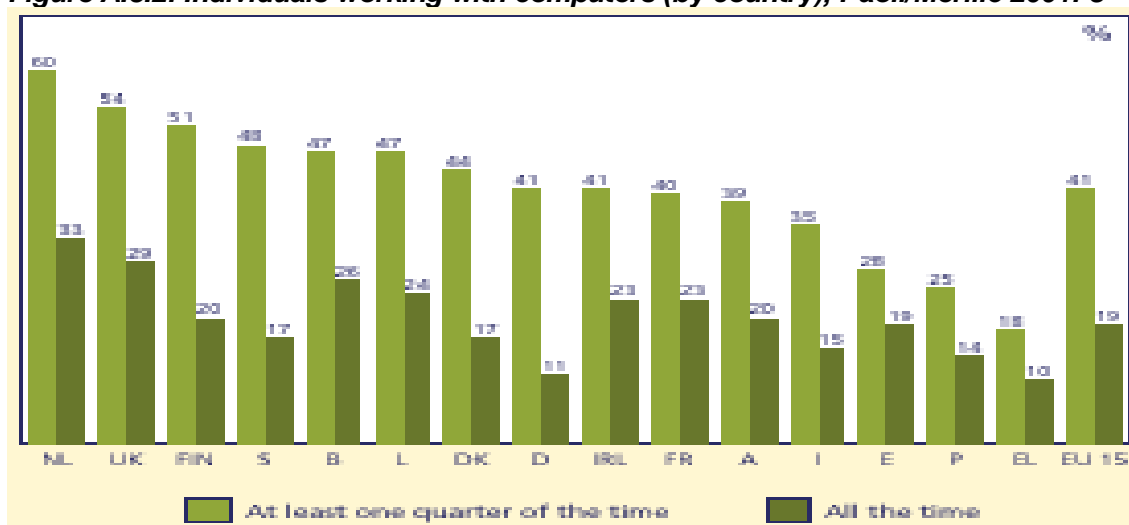
Telework is sometimes carried out under a "particular type of contract": around half of those involved are self-employed; among employees who telework 10% have fixed-term contracts and 11% have "atypical" contracts. Moreover, there is empirical evidence that teleworking from home is more common in certain occupations and higher professional categories: 15% of managers, 12% of professionals, 8% of technicians and 4% of clerks engage in teleworking at least one quarter of the time, compared to only 1% of skilled workers and machine operators. Teleworking is also common in the financial broking and real estate sectors (Paoli/Merllié 2001: 8).

If regular and occasional teleworking is not restricted to home-based work, but also is made to include mobile or multi-locational working, e.g. on clients' premises etc., the percentage of teleworkers within the working population is even higher. A survey carried out by the ECATT project in 1999 put the overall level of teleworking in the European Union at around nine million, which would represent a figure approaching 6% of the total workforce. According to the ECATT findings, northern European countries such as Finland (17%), Sweden (15%), Netherlands (15%) and Denmark (11%) are the forerunners, whereas countries like Spain (3%) and Italy (4%) are lagging behind (www.ecatt.com).

In order to put empirical data for individualised teleworking situations in Europe into perspective, it would be helpful to briefly review other industrialised nations. According to an overview of Di Martino (2001: 29 ff), the number of teleworkers in the US is somewhere between 7.5 million (those using a modem) and a maximum of 12.5 million (those using a computer). This would mean that, already by 1997, between 6% and 10% of the total workforce in the US was teleworking from home for a minimum of one day a month. Unfortunately, information on other types of telework such as mobile working is not so readily available. In Australia, the number of teleworkers was esti-

mated at between 5 to 6 % of the total workforce in 1999, in Canada the share varied between 7% (Quebec, central region) and 12% (Alberta, periphery) in 1999. Empirical findings for Japan estimated a total of 3 million teleworkers including mobile workers in 2000.

Turning from the individual to the company point of view, results of the Employer Survey 2000 carried out by the EMERGENCE project in the EU (15) plus Hungary, Poland and the Czech Republic show that nearly half – 49% – of all European establishments with more than 50 employees are already practising some form of e-work, as can seen from Table A.3.1. In this survey e-work included any forms of remote work carried out away from an establishment, yet managed by that establishment using information technology and a telecommunications link for receipt or delivery of the work. Thus, remote work excluding the use of ICT – like traditional home-based work or outsourcing contracts to suppliers delivering some form of service – was not considered.

About 12% of the companies reviewed engage employed teleworkers, of which the majority are multi-locational workers or remote, back-office workers, whereas the stereotype of the isolated teleworker based solely at home is in fact one of the least popular forms of e-work. Even more widespread than teleworking on the part of employees are several forms of outsourcing to companies and freelancers. 43% of all establishments have contracts with supply companies or freelancers providing some sort of specialised IT service such as call-centre services or software engineering. Here, it is interesting to note that much of this e-outsourcing is carried out within the region where the employer is based (34.5%), whereas substantial numbers (18.3%) outsource to other regions within the same country, whilst only 5.3% outsource outside their national borders.

Table A.3.1: E-work in European companies by type of e-work (in %)

Any e-work		**49.0**
Within the organisation	All e-employees	**11.8**
	Employees working in remote back offices	6.8
	Multi-locational teleworking employees	9.9
	Home-based teleworking	1.4
	Remote call centre in company-owned back office (outside own region)	1.4
	Employees working in tele-centres, tele-cottages or other office premises owned by third parties	0.9
	Call-centre employees in tele-cottages or tele-centres	0.3

Outsourced	All e-outsourcing (outsourcing using a telecommunications link to deliver work)	**43.0**
	E-lancers (freelancers using telecommunications link to deliver work)	11.4
	E-outsourcing within own region	34.5
	E-outsourcing to other region in own country	18.3
	E-outsourcing to companies in other countries	5.3
	Outsourced call centre	15.0
	Outsourced call centre with telecommunications link	11.1

Source: Huws/O'Regan 2001: 16; EMERGENCE European Employer Survey, 2000; weighted figures; % of establishments with >50 employees in EU (15) plus Hungary, Poland and Czech Republic.

Hence, international outsourcing, relocation and co-sourcing is a matter of larger companies or MNCs, as is teleworking in general. ECATT results on the practising of teleworking by size of establishment reveals that 73% of companies with more than 500 employees are engaged in remote working compared to 15% of companies with less than 10 employees. In addition, Flecker and Kirschenhofer (2002: xvi), who published a series of e-work related case studies within the EMERGENCE project, argue that outsourcing and relocation across borders have up to now been confined to larger businesses because these activities need to comply with certain specific requirements. Besides the primary drivers of e-work relocation such as cost savings achieved by economy of scale, cost differences between regions and/or companies and the availability of skilled labour and expertise, the following organisational facilitators seem to be the most important ones:

- Existing contacts with partner companies and support from parent companies
- Workers' involvement in preparation and execution of the relocation
- Clearly delineated tasks or projects including a high degree of standardisation and formalisation as well as exact specification and documentation of the e-work to be done
- Adaptation of work organisation and technology to the new environment
- Organisational change at the source in order to adapt to the new division of labour
- Dedicated and extensive efforts regarding knowledge transfer and training.

Case study: Siemens Austria

Expansion in Central Europe: Siemens Austria's Programme and System Development business area provides software for all Siemens operations worldwide. With nearly 5,000 employees at 20 locations in seven European countries and the US, it is a major player in this field. After having operated and developed successfully only in Austria for 30 years, the company expanded dramatically into the Central and Eastern European Countries during the 1990s. The motivation for this move was the pressure to cut costs, made possible by achieving a mix of wage rates from high-cost and low-cost countries. This led to the decision not to expand the operation in Austria any further but to set up subsidiaries in the neighbouring CEE countries. In 1991 and 1992, companies were taken over in Bratislava and Prague; Budapest and Zagreb followed in 1994 and 1995. When competition on the labour market increased in the capital cities, new units were set up in smaller university towns in Slovakia, Hungary, Croatia and Romania. Some of the subsidiaries are now among the biggest software companies in their countries, and total employment has increased to 1,500, while the headcount in the Austrian operations has remained stable.

An important pre-condition for the successful expansion into other regions was support from the Siemens parent company, which was already present in all of the countries concerned. Not only did this provide good business contacts but also the technical infrastructure. Close relationships with local universities turned out to be important, too. At the organisational level, the company-specific method of software development supported co-operation at a distance. At the beginning, joint development projects were led by the Austrian operation, with employees from the other countries contributing from a distance or working temporarily in Vienna. A recent tendency to devolve responsibilities for project management and customer contact as well is making the subsidiaries more self-reliant.

The main criteria for selecting locations in this case were wage costs and the availability of university graduates. In addition, preference was given to geographic proximity and a successful alternative to relocating to India or other Asian countries was found.

Source: Flecker and Kirschenhofer 2002, http://www.emergence.nu/news/cases.html

Which activities are most important for e-outsourcing? 60 per cent of the establishments implementing e-work use it for software development and support, which is the function most likely to be carried out remotely using a telecommunications link. The second most common tele-mediated function, at 38%, is "creative work", a category which includes design, editorial work, multimedia content generation as well as research and development. This is followed by management, training and human resource management (HR) functions at 19% and customer services at 18%. At 9% and

8% respectively, data processing activities and finance/accounting services also play a significant role in e-work, with sales following at 6 per cent (Huws/O'Regan 2001: 19).

Data from the EMERGENCE survey also shows an interesting breakdown by European countries. Countries with high levels of e-work fall into two broad categories: advanced high-tech economies such as Finland (76%), Sweden (60%) and the Netherlands (58%), which make use of IT for a wide variety of e-work practices; and countries in central, eastern and southern Europe such as Greece (74%), Italy (60%), Hungary (67%), Poland (63%) and the Czech Republic (72%), which have very high levels of outsourcing, sometimes rooted in economic systems which favour small firms or display a large, informal economy. The new information technologies have clearly enabled institutions in these countries to develop electronically-based subcontracting networks to a considerable extent (Huws 2001: 24).

A.3.2 Empirical findings on collaborative e-work in industrialised countries

According to the table below, showing figures from Europe, there is empirical evidence that forms of tele-cooperation between workers who are located at a distance has become a common working mode for an increasing share of workers, at least in industrialised countries. Tele-cooperation is sometimes also called "in situ telework", because, although workers appear to be co-located in central office buildings, in fact they often work together closely with project partners at faraway locations, while work-related interaction with next-door colleagues is comparatively low (Gareis 2001: 41). As tools for virtual collaboration over ICT networks are being implemented at workplaces all over the world at great speed, data concerning the workplace level from the ECATT survey in 1999 reveals that the share of all workers who regularly or at least occasionally tele-cooperate with co-workers makes up for about 35% of the working population in the EU10 (regularly 28%, occasionally 7%). Similar to the diffusion of telework, northern European countries like Finland, Netherlands and U.K. are the forerunners, whilst countries like Italy and Spain are lagging behind. The definitions used for tele-cooperation are as follows:

- Occasional tele-cooperation: Workers who collaborate with others not located at the same site at all (either externals or same-company workers located in other establishments) using e-mail, video-conferencing, the transfer of computer files or shared joint databases (e.g. Intranet)
- Regular tele-cooperation: Workers who use email for collaboration with others not located on the same site daily, or use video-conferencing or file sharing at least once a week.

Table A.3.2: Tele-cooperation in Europe

	Workers who tele-cooperate as % of all workers			Self-employed workers who tele-cooperate as % of all self-employed [a]		
	Regularly (in %)	Occasionally (in %)	Never (in %)	Regularly (in %)	Occasionally (in %)	Never (in %)
Denmark	26.0	5.9	68.1	35.7	0.0	64.3
Finland	43.3	6.9	49.7	40.5	0.0	59.4
France	21.7	4.8	73.5	10.7	3.6	85.8
Germany	26.8	5.3	67.9	13.6	9.8	76.7
Ireland	32.1	5.4	62.5	16.6	6.5	76.8
Italy	17.6	9.8	72.6	9.7	11.7	78.6
Netherlands	29.9	15.5	54.6	20.0	28.9	51.2
Spain	19.7	4.2	76.1	12.7	6.4	81.0
Sweden	29.9	7.9	62.2	21.0	16.3	62.7
U.K.	37.5	5.2	57.3	14.7	1.7	83.6
EU10	**28.2**	**6.7**	**65.1**	**13.6**	**8.1**	**78.3**

Source: EcaTT 1999; in: Gareis 2001: 42

[a] Excluding workers in the primary sector

From a functional point of view, some tele-cooperating workers are not very different from self-employed persons interacting with their partners over global ICT networks. Nevertheless, the share of workers in Europe who tele-cooperate regularly or at least occasionally is substantially lower among the self-employed than among the total work force with the single exception of Denmark. Tele-cooperation with external workers is more widespread among employees working in companies than among the self-employed, although the latter have more external contacts with clients and customers (Gareis 2001: 42).

A.4   Findings on e-work in developing/newly developed countries

E-work in developing or transition countries can be a "hidden" issue, i.e. in several countries the presence of teleworking is neither properly detected nor acknowledged, thus, there is seldom reliable data. Yet, using available data, investigations into the prevalence of individualised telework in developing countries reveal that working at a distance from the employer's office premises is still a rare occurrence (Table A.4.1). The World Employment Report of the ILO shows, for example, that in India in 1998, out of a sample of 500 firms in Mumbai, about 1 per cent of employees were home-based workers, 0.7 per cent were mobile workers, and 1.1 per cent were back-office workers.

Among firms that record experience with telework, actual practice is often confined to a few workers from managerial staff. In Malaysia, 7.5 per cent of firms were found to use teleworking and 3.4 per cent of the workers in the sample were involved in telework, most of them doing mobile rather than home-based telework. Nevertheless, "in both Malaysia and India, other sources suggest that in certain key sectors such as software, finance and banking, printing and publishing, and telecommunications, there is a discernible incidence of telework" (ILO 2001: 127).

Table A.4.1: Summary of telework estimates outside Europe, US and Japan (millions)

	1998	1999	2000	2001	2002	2003
Argentina	0.210	0.269	0.340	0.429	0.535	0.655
Australia	0.353	0.431	0.522	0.627	0.749	0.892
Brazil	0.013	0.019	0.029	0.045	0.069	0.104
China	0.001	0.002	0.003	0.005	0.008	0.012
India	0.027	0.039	0.058	0.084	0.121	0.173
Indonesia	0.001	0.001	0.001	0.002	0.003	0.005
Malaysia	0.022	0.033	0.051	0.075	0.109	0.155
Philippines	0.005	0.008	0.010	0.014	0.020	0.026
Singapore	0.019	0.026	0.036	0.049	0.067	0.090
Thailand	0.005	0.007	0.010	0.015	0.022	0.032
United States	18.643	21.408	23.815	25.862	27.563	28.992

Source: Nilles 1999: 43

While individualised forms of telework still seem to be an exception in developing countries or countries in transition, relocalised, "off-shore" e-working or back-office work like data processing, teleservices or software engineering on premises of local businesses or MNCs subsidiaries are becoming more and more widespread. This is made possible due to low cost technologies, generous tax regimes, competitive labour costs and new skills in countries like Singapore, India, Malaysia, Thailand, Philippines, Brazil, Mexico, South Africa, Morocco or Turkey. Inexpensive facilities not requiring a large-scale infrastructure make this particularly attractive for companies. Especially call centres – telephony-based services to customers in a variety of business sectors – are becoming the most common form of telematically supported work. There is an upward trend, not only in industrialised countries but also in developing countries. In Malaysia and Morocco, call centres have been found to attract diploma and degree holders, the majority of them working full-time, many of them women. Women especially have welcomed the opportunities of employment outside the home afforded by call centres (ILO 2001: 129).

Case study: Morocco benefits from the call-centre boom

France Telecom, SNCF (the French railways company) and Attento (the Spanish business company) are just three of the major international companies that have chosen Morocco as a site for new call centres. Reasons for choosing Morocco range from targeted marketing strategy on the part of local firms, governmental efforts to attract foreign investors – by liberalising the infrastructure and finance sectors, adapting its trade and fiscal policies and introducing labour reform – and the low wages for skilled labour (skilled youth unemployment in Morocco is above 30 per cent).

Source: ILO 2001: 131

Yet there are concerns about possible health hazards brought about by repetitive work in high-pressure working environments. Moreover, technology is progressively taking over more and more simple functions, it seems to be permanently "catching up" with work previously being undertaken by people. This has been the case with data entry functions and is likely to be the case with a number of functions in call centres. There is a risk that in the not too distant future employment even in currently booming forms of e-working, such as call centres, will decline rather than increase. Thus, the manifestation of globalised forms of e-work is a mixed blessing. "The process is laden both with unique opportunities for development and with new risks for isolation, discrimination and social fragmentation. For developing countries the road to be followed is a narrow one, which could lead to the exacerbation of economic dependency and the growth of two-tiered societies, but which could also provide a chance of leapfrogging at least part of the gap with the industrialised world" (Di Martino 2001: 45).

A.4.1 Which developing countries are participating in the digital economy?

Broadening the focus from e-work to cross-border B2B (business-to-business) in the global information economy, there is evidence that international relocation of employment has become a key issue. Technological change and open economic and geographic frameworks have not only enabled opportunities for the globalisation of tangible goods, but also of intangible services. Within ICT-enabled services, the potential for an international division of labour determined by relative costs is enormous, as high-cost economies move up the value chain, leaving lower value-added activities, such as remote processing and back-office functions, to be contracted out to lower-cost developing economies. Limits to the externalisation of work arise not so much from technical barriers anymore, but from considerations of managerial efficiency. "Inherent in the technologies is the possibility for developing countries to become better integrated within global value chains, with the greatest degree of integration occurring through trade in intangible products. Opportunities in this area include software development, back-office work for banks and insurance companies, publishing, medical transcription,

data processing, the creation of web pages and databases, or the digital transcription of engineering drawings and maps" (ILO 2001: 99).

Case study: the Indian software industry

The most often cited example of cross-border B2B transactions is the Indian software industry. It has grown at an annual rate of 56 per cent over the past five years, contributes 10 per cent of India's GDP growth, and currently generates revenues of nearly US$4 billion annually. In 1997, revenues from trade in software in India were US$3 billion – the world market was valued at between US$300-500 billion. A total of 500,000 people are now employed in the industry, 27 per cent of whom are women. Women's share in the employment total, moreover, has been increasing in recent years.

To a great extent, the activities in software and related services, including informal sector activities, are delivered by small and micro-enterprises. The majority of workers in these establishments have at least a college degree or a higher qualification in addition to some training. Most employees treat their jobs with informal sector establishments as stop-gap arrangements while they are still under training or studying.

The links between the informal and the organised formal sector are nearly always vertical, with most of the customisation and data entry firms serving the end-user clients in the organised sector. The attractiveness of these smaller firms lies in their price competitiveness and more personalised services. As in other sectors, software development projects are considered to pass through a series of lifecycle phases that can be represented as a "cascade" of activities. These activities propel systems-relevant knowledge through a series of transformations from the "upper end" of the cascade where knowledge is viewed from a business-oriented perspective to the "lower end" where a computer-oriented perspective is adopted. "Upper-end" tasks such as business analysis or more complex software solutions for individual clients are still often confined to industrial countries or larger businesses, whereas the well-specified "lower- end" tasks like coding and producing standard solutions are carried out in smaller firms.

Source: ILO 2001: 99, 122, 143

Nevertheless, the World Employment Report 2001 by the ILO points out that the success of countries like India, Brazil, the Philippines, Israel or Romania in participating in global value chains is the exception, not the rule. For many other countries to take advantage of this trade in intangible products, a wide range of business pre-conditions need to be met. Thus, evidence of successful cross-border B2B in some other countries is more anecdotal: "In Morocco, for example, a local Internet service provider (ISP) is converting the paper archives of the National Library of France into digital form. In Togo, the world's first Internet-based call centre has been set up to provide globally competitive telephone support services for companies with customers in North

America. In Senegal, a company employs 30 skilled CAD technicians in computer-assisted architectural design for European clients" (ILO 2001: 99f).

In brief summary, there are important niches in the market for long-distance services that can be successfully exploited by developing economies with a literate workforce and a modern telecommunications system. Potentials to exploit such niches depend upon the local skills base, infrastructure, market and regulatory environment. Jack Nilles, among others, argues that although large developing countries such as China or India have a high long-term potential for both e-work and e-commerce, these are not likely to attain significant international impact for at least a decade.

- Most of the developing countries have yet to put into place the information infrastructure necessary for efficient e-commerce or e-work. Telephone penetration is low and telecommunications prices are excessive when compared to consumer/business purchasing power.

- There are teleworkers in all of the countries surveyed, but most of these countries have no telework policy or plans for support of demonstration projects. The exceptions are Malaysia and Singapore (Nilles 1999: 43f).

Thus, whether the global information economy will become an inclusive "high road" to e-work or only a "low road", exploiting cheap labour on a global scale, is an open question far removed from simple forecasts. The table below presents outlooks following a more pessimistic and a more optimistic scenario, both applying not only to developing countries, but obviously to industrialised ones as well.

Table A.4.2: Scenarios for work, flexibility and ICT

Dimension of job quality	Pessimistic scenario	Optimistic scenario
Employment opportunities	ICT destroys work (automation and rationalisation)	ICT creates work (develops new markets and human capital)
Labour relations	ICT isolates and imposes stress on individuals (working in different times and places and being overloaded with information) Dismantling of traditional ties between the employer and the employee presents new opportunities for the employer to shift risk onto his employees	ICT interconnects and stimulates individuals Dismantling of traditional ties between the employer and the employee provides less constrained opportunities for broader work experience and skills development for the worker
Skills	ICT downgrades skills and competence to single-task machine-tending	ICT upgrades skills and competence, multi-tasking creativity
Pay	ICT reduces pay (downgrades skills and weakens workers' collective bar-	ICT increases pay (augments skills; skill shortage)

	gaining power; increase in part-time contracts)	
Career opportunities	ICT creates "dead-end" jobs (surveillance and threat of outsourcing; part-time)	ICT expands career opportunities (strengthens connectedness among organisations)
Discrimination	ICT excludes older workers and women from the labour market	ICT opens up new opportunities for vulnerable groups
Job protection and collective bargaining	ICT leads to fragmentation and new employment contracts, undermining systems of collective bargaining and employment regulation	ICT blurs the boundary between employee and employer and thereby reduces the need for traditional employment protection/regulation; calls for new forms of protection
Power and autonomy	ICT leads to a divided society (centralises power, control)	ICT leads to more individual flexibility and freedom of choice
Work intensity	ICT leads to work intensification	ICT reduces time taken to perform tasks and thereby provides opportunities to reduce work effort
Health	Cumulative impacts of many hours working at a computer (e.g. physical ailments such as screen fatigue and carpal tunnel syndrome)	ICT reduces the physical burden of work
Work-life balance	Work takes over life (pressure to work everywhere and all the time)	Work is integrated with and subordinated to daily life (work is adjusted to the needs of family and personal life)

Source: ILO 2001a: 146

PART B. RELEVANT ISSUES IN GLOBAL E-WORK

B.1   Teleworking conditions

Within this chapter, individualised modes of remote work outside a company's office premises are to be examined – i.e. full-time or occasional home-based telework. In discussing home-based teleworking, some crucial issues to be addressed are: isolation; reduced support in personal development and the risk of deskilling; overlapping of working time and free time; lower job security; weakened contractual force; more precarious work; increased work stress; and a less suitable working environment.

First, an empirical overview of the socio-economic characteristics of teleworkers is presented by using data from the UK. Literature reviews have shown that there are still limits to being able to quantify this issues, especially on a global scale. Second, typical phenomena and problems arising from individualised remote work are identified (other aspects of individual working conditions are discussed in the following chapters below). Third, the chapter continues with a summary of the discussion on legal frameworks for individualised telework, closing with a case study involving British Telecom and a good model code of practice for individualised telework.

B.1.1 Socio-economic characteristics of teleworkers

Although, quite clearly, the technology is now available to make telework an attractive option for employers, the empirical data included above indicates that fully home-based telework is very uncommon in industrialised countries, at least as far as the employed workforce is concerned. In contrast, individualised forms of remote work such as occasional telework or multi-locational work are more widespread. Such employees can benefit from a more flexible working life as compared to that offered by the traditional workplace. Thus, when e-workers are embedded in the organisational life of the company in adherence with acknowledged regulations, working at home is seen as an enriching and liberating experience. Yet there are disadvantages, too, including precarious contracts or the feeling of being isolated from one's employer and from fellow employees. The risk that women seeking to combine work with child care or those disadvantaged in the labour market get stuck with isolated, exploitative and low-paid work at home seems to be confined to cases of fully home-based workers or atypically employed persons. The latter lack adequate agreements with their employers or inade-

quate labour legislation in general exists – this is especially true in developing countries as well as countries in transition.

Case study: Datamatics Technologies Private Ltd., an Indian software company

The operation of the Indian stock exchange is now nationally distributed among small traders with the help of ICT. Today, 8,000 people work behind 4,000 terminals, compared with earlier when only 200 people formed the trading ring. [...] Teleworking made available in 260 cities by the National Stock Exchange has created this indirect employment. In a similar way, the newspaper *Asian Age* is produced simultaneously in Delhi, Mumbai and London using satellite technology. Another example is Datamatics, a new software and data-entry firm that outsources work to a network of teleworkers. Datamatics is one of the fastest growing software companies in India. Outsourcing a large part of its work to teleworkers, it has been creating a revolution in the Indian software market. While data warehousing is done internally, electronic publishing and back-office processing are delegated to teleworkers. With 265 internal employees at present, the number of teleworkers has grown to 600 since the company introduced teleworking, beginning with ten teleworkers in 1990. Women form 98 per cent of the teleworking workforce and are entirely home-based. In fact, one of the company's main reasons for outsourcing work to teleworkers is to utilise the latent pool of talented individuals, mostly women, who cannot work full- time due to various obligations. They are given work involving tasks such as entry and word processing. More specialized tasks are assigned to core staff.

Source: ILO 2001a: 131f

A more detailed picture of the socio-economic structure underlying one of the forerunners of telework – UK – is provided by figures from the Labour Force Survey of 1998 (ILO 2001: 128). In the UK the numbers working "mainly" at home rose to 2.5% in 1998. Those working at home for at least one day a week account for 3.5% of the employed workforce, while those reporting working at home at least "sometimes" account for a further 22%. Three out of five people who work at home at least one day a week rely on keeping in contact with clients and colleagues via computers and telecommunication, compared to just under half of those working mainly at home. But who are the teleworkers in the UK?

- Compared with the rest of the working population, teleworkers are more likely to be graduates, to be married and to be in the middle of their careers (in their thirties or forties).
- Most teleworkers are found in senior jobs: 28% are managers, 22% are professionals and 18% work in associated professional or technical occupations.
- Over a quarter of all teleworkers (27%) work in business services sectors with another 25% in the public and voluntary sectors.

Are women more prone to work at home?

- Women outnumber men among those working mainly at home (69% versus 31%). However, the opposite is true among those who work at home less frequently.
- For women there appears to be an association between working at home and child care; women who work mainly at home are more likely to report having dependent children than peers who work elsewhere.

Do those who work at home receive lower rates of pay than their peers?

- On the average, home-based teleworkers receive rates of pay well above their office-bound colleagues (11.37 GB pounds/hour compared to 9.07 GB pounds). After controlling for other factors considered to affect rates of pay, women who perform non-manual jobs at home receive a 16-percent premium, while men's working location makes little difference to the pay they receive.
- Among a fifth of all home-based teleworkers, the incidence of low pay is relatively high.

B.1.2 Crucial aspects of individualised forms of remote work

The crucial aspects to be faced when home-based teleworking is accepted may be: isolation; reduced support for personal development and risk of deskilling; overlapping of working time and free time; lower job security; weaker contractual force; more precarious work; increased work stress; and a less suitable working environment. Roughly speaking, four areas can be identified when requirements are clustered according to a trade union perspective. A number of teleworking guidelines by the MSF Information Technology Professional Association are reported below. These guidelines aim to address the problems teleworkers might face and to ensure that they are treated in the same ways as other employees (source: ILO 2001: 154, see also: www.eto.org.uk)

Legal and contractual situation of teleworkers
- Teleworkers should be employees of an enterprise and not deemed self-employed.
- Teleworking should be voluntary with a right to return to working from the office.
- Teleworkers should enjoy the same rates of pay and employment benefits as office-based workers, including child care provision and family leave.

Technical equipment and privacy at home
- There shoud be a separate room available at home for teleworking, a separate telephone and payment for additional costs such as heating and lighting.
- All computer equipment should be provided, paid for and serviced by the employer, who will be responsible for installation, maintenance, insurance and compliance with health and safety requirements. The employer should also accept legal responsibility for any accident or injury.

Isolation, exploitation and work-life balance

- To avoid isolation, contracts of employment should require home-based workers to periodically attend the office.
- There should be a defined number of working hours. Teleworkers should be included in career development and appraisal schemes including training opportunities.
- Teleworkers should have access to trade union representation and be able to attend meetings within working hours. Health and safety advisers and trade union representatives should be able to visit teleworkers.

Management of teleworkers and communication with peers

- There should be regular meetings between teleworkers and electronic mail and telephone links with other teleworkers should be provided at the employer's expense.
- There should be regular weekly liaison discussions between a teleworker and his or her supervisor/manager.

Meanwhile a large number of evaluation studies covering teleworking pilot projects in companies as well as in public administration (www.ecatt.com, www.euro-telework.org, www.eto.org.uk) exist. Some examples are presented in the following:

- The telecommunications multinational Nortel found that among its teleworkers work satisfaction increased by 45%, productivity improved by 30% and stress reduced by 46%.
- The computer company 3Com switched 120 staff to using their homes as their base and found these subsequently spent 25 hours a week with customers (against 12 to 15 hours previously) and 40% less of their time was taken up by internal meetings.
- Computer manufacturer Compaq reported productivity increases ranging from 15 to 45% as a consequence of teleworking (Di Martino 2001: 70).

The lessons learned from such evaluations can be roughly summarised as follows: productivity rates and job satisfaction among teleworkers are high and even increase (when compared to the figures for the former, company-based workplace) as long as two pre-conditions of telework are met: first, telework is done not fully home-based, but only occasionally; second, there are collective framework agreements between the employer and bodies representing employees as well as arrangements including most or all of the aspects formulated above with the respective teleworkers. The combination of occasional teleworking and binding agreements are the basis of mutual trust and prevent precarious tele-workplaces, i.e. the risk of lay-offs or being outsourced. Experts interviews which CSI has carried out with teleworkers in large Austrian companies like Siemens Austria and Austrian Airlines, both of whom have company-wide

teleworking arrangements, confirm that teleworking carried out by professionals is more a positive incentive than a threat.

Case study: British Telecom Options 2K

Initially, teleworking in BT was launched with the aim of reducing operating costs. However, the focus has shifted now, with cost still the primary driver, but to include a greater appreciation of facilitating the demand for teleworking arrangement from employees. Indeed, this is the main rationale for naming the project Options 2000 – recognising people as "options".

The target group is the white-collar workforce. The programme team comprising Facilities, IT and Human Resource specialists formally planned the initiative. It has received full backing from the company's board. It was preceded by a well-organised promotion campaign aimed at creating and further raising awareness about teleworking, its potential and benefits. Initial response from employees was very enthusiastic – 3,500 people registered in the first 60 days, expressing a desire to telework. There is an onus on line managers to consider their requests. The emphasis is on complying with them where both the job and the person are deemed suitable for teleworking. It is also envisaged that the target number of 4,000 could even be higher, but the company wants to follow a previously tested route, doing trials in business units and then rolling out each individual teleworking scheme. In addition, the logistic task of setting up and maintaining organisational arrangements for 4,000 teleworkers is in itself enormous.

Benefits of the initiative

It is estimated that work productivity has been increased by 20% (data based on previous initiatives). Furthermore, there has been a positive impact on the environment, quality of work life, and employees' morale. It has also been reported that good teleworking managers regularly become even better managers, since their communication effectiveness increases even further. Unfortunately, "bad managers", that is to say those who did not communicate effectively with their teams in the first place, simply remain so. Thanks to teleworking, the speed at which the products reach the market is improved. The managers get their teams, necessary for developing new products, working together much more quickly by using teleworking.

Barriers to the initiative

The barriers reported relate mostly to the previous teleworking initiative. It was reported that recruiting graduate teleworkers was difficult, primarily due to the fact that they did not get a chance to absorb corporate culture. Another reported barrier related to the opposition offered by some sections of senior management to teleworking arrangements. Another potential barrier could be the tendency noted among some teleworkers to work too hard. One of their managers' tasks is to identify and prevent this from occurring, and to adequately manage overwork.

Impact(s) of the initiative

The biggest impact of the teleworking initiative in BT has been to change the organisation from supporting buildings to supporting people. The initiative has brought some changes for managers too, who need to work in a different way and learn to manage people remotely. Of course, the managers still bring their teams together at least once a month whenever possible, in order to supplement virtual with physical interaction. In addition, the practice widely adopted in BT is to manage by objectives, which can be effectively applied to teleworking. The company has become more aware of employees' demands regarding work arrangements and more responsive towards them.

Expectations and future organisational plans

It is envisaged that the volume and type of services provided by using teleworkers will expand, consistent with the increase in their numbers. Generally, it is expected that teleworking will become even more efficient and effective. Thus, with the increase in numbers of teleworkers, economies of scale will take hold and the cost for maintaining teleworkers will decline exponentially (for example, the cost of providing them with the necessary remote access service). At the same time, increased effectiveness will be achieved since technological developments allow practically any task to be done remotely, in addition to facilitating some new ways of working such as the formation of virtual project teams.

Sources: http://www.wfh.co.uk/wfh/consultancy/casestudies/option2k.htm; Di Martino 2001: 74

B.1.3 Existing regulatory frameworks for individualised teleworking in Europe

Teleworking is still not a legal category. As it is a quite new phenomenon, there is as yet no source of law in custom or practice. Although there is already considerable experience in many countries in trying to establish appropriate regulatory mechanisms, most countries do not currently have particular laws specific to teleworking. Telework is covered by two types of regulations: those governing homework and VDUs (visual display unit). When determining the legal status of teleworkers, therefore, one basically has to fall back on existing and traditional legal categories and the arsenal of rules which goes along with applying them (European Foundation (without year), 2). What can be found are numerous activities mentioned in teleworking agreements with respect to the sectorial level and the level of individual enterprises or even nation-wide initiatives adhered to on a voluntary basis. We will present below a brief overview of initiatives at the trans-national, national, sectorial and company levels based on the work done by the European Foundation for the Improvement of Living and Working Conditions and by Di Martino (Di Martino 2001: 104ff).

Initiatives of the ILO and the European Union at the trans-national level

In 1996, the International Labour Organisation adopted a new Convention (no. 177) and Recommendation (no. 184) relating to homework. These instruments do not expressly mention telework. Nevertheless, they provide a definition of homework which

would seem to cover a number of situations in which tele-homework is performed. In its proposed convention on homework, the ILO wants employees working at home to be given equal treatment with other (office-enterprise) employees. Yet, it is far from being generally accepted that ILO instruments concretely apply to teleworking (Di Martino 2001: 107).

The European Union has awarded telework (and more recently e-work) considerable status as a symbol of the EU's desire to develop into an information society and the most competitive economy by 2010 (eEurope action plan). In a consultation document issued in mid-2000, the Commission identified a number of issues for discussion and negotiation, including: definition of telework; arrangements for the introduction of tele-work; sustainability of jobs in teleworking and selection of teleworkers; arrangements regarding the home office; rules and procedures for communications, including con-sultation; training requirements; company security policies; terms and conditions of employment; monitoring and review of telework (European Commission, DG Employ-ment and Social Affairs 2000). The Commission has suggested that "framework provi-sions" on telework be developed at the EU-level for implementation in individual mem-ber states. The European Trade Union Confederation (ETUC) represents the workers' side in these discussions. Moreover, the Commission has launched a number of EU-funded projects in attempts to promulgate best practice and develop codes of practice for telework implementation. One of these, the DIPLOMAT project, has developed a European Charter for Telework, which was endorsed by 600 signatories from across Europe (Hochgerner/Lacina 1998). Telework was also the subject of a European Un-ion-wide agreement between the members of the Sectorial Social Dialogue Committee (SDC) for Telecommunications, finalised in 2001. The SDC links together representa-tives of employers with the telecommunications sector of Union Network International's UNI-Europe (see below: Guidelines for telework in Europe from the SDC). The agree-ment has identified 12 principles for telework and called for implementation of the guidelines by the end of 2001 (Martino 2001: 108).

Legislation at the national level
Teleworkers are either employees or self-employed, or even a mixture of both. In cer-tain Member States there is an in-between category, apart from the employee or self-employed, which is legally recognised as the "homeworker". As a homeworker, the teleworker can be an employee, possibly of a specific sort, or can be classified as self-employed, depending on the applicable legislation and case law of the Member State(s) in which the work is performed. Homework covers work performed anywhere, either at home or in any premises other than the workplace of the employer. If the work is done "in subordination", i.e. under the command and the control of a contractor, the teleworker is considered an employee; if not, he/she is seen as self-employed. This is an extremely important distinction. In the case of subordination, labour law applies,

with a protective umbrella of minimum standards, social protection and specific social security provisions. In the case of self-employment, there is only whatever protection any written or informal agreement contains. However, the category "self-employed" is now being widely relied on to determine the legal status of teleworkers. The reason is simple: a self-employed worker is less expensive from the point of view of social security costs, and much more flexible, as no protective labour standards apply and full contractual freedom prevails. This can be to the economic advantage of either party, depending on their respective market strengths (European Foundation: 2).

Some national acts of legislation making efforts for clear distinctions between self-employment and employment may point to future developments. This development has been particularly encouraged by recent legislation (1994) in **France**, where a teleworker, if registered as a tradesman or as a commercial agent, is de jure looked upon as self-employed unless proof of the contrary is given. In contrast, a new Act has been passed in **Greece** (1990) whereby collective agreements are also applicable to independent workers in such cases where it is evident that they are economically and socially dependent (European Foundation: 3). In **Germany**, a new law passed in 1999 covering "pseudo" self-employment makes it more difficult to employ teleworkers as subcontractors of only one company, a device of choice for avoiding the payment of social insurance contributions.

Partnership agreements at the national, sectorial and company level

By and large, published studies of teleworkers present the picture of a worker who voluntarily engages in telework, has the right to return to headquarters and is basically treated as another employee. An increasing number of companies as well as public administrations have concluded framework agreements with unions and employee representative bodies (works councils) embodying these principles. Sometimes the initiative for voluntary agreements comes from the federal government. Some examples: in **Ireland**, the Ministry for Science, Technology and Commerce set up the National Advisory Council on Teleworking in 1998. This advisory committee was also responsible for developing a national Code of Practice on Teleworking (recently renamed Code of Practice on E-working), which has been endorsed by the employers' association IBEC and the Irish Congress of Trade Unions. The code encourages the introduction of formal teleworking policies in companies and organisations as a way of avoiding potential problems which may arise from introducing a new form of work organisation (see http://www.telework.ie/nact/index.html). In **Sweden**, a joint recommendation by the trade, commerce and services sector, signed in November 1997, serves as a guide for telework agreements at the company or individual employer/worker's level. 80,000 employees are potentially covered. In **Italy**, the employers' organisation Confindustria and the national trade union confederations CGIL-CISL-UIL signed a collective agreement in July 2000 covering 300,000 workers in the "new economy" sector. The agree-

ment includes a range of working practices, including part-time and weekend work, as well as provisions for different types of telework, including home-based working, tele-centre work and call-centre working. In **Austria**, a model telework agreement drawn up by the Union of Salaried Employees (GPA) was adapted as the basis for a framework agreement addressing teleworking among industrial employees and for another covering electricity enterprises. The agreements cover 160,000 workers and are aimed mainly at employees combining in-company work with telework.

In terms of single company agreements, one of the most influential has been the one signed in Germany between the management of **IBM** and the central work council of IBM, one that has been widely used as a model in Germany and elsewhere. Some other relevant company agreements covering telework are those published by **Deutsche Telekom**, **Telecom Italia**, **Compaq** or **Electrolux Zanussi** (Di Martino 2001: 110ff).

Trans-border regulations for telework

Regulatory frameworks for trans-border telework are to a large extent still incomplete. Telework sub-contracted overseas introduces a new dimension to the international division of labour, and certain industrialised countries take advantage of this. The emergence of this new way of organising work poses a certain number of legal problems at both the European and international level in terms of the black economy, social dumping, etc. While cross-border work within the EU may be subject to certain legal provisions, for trans-border telework outside the EU no such framework currently exists. Hence, the matters of how to secure occupational social protection or paid holiday schemes for teleworkers, whose legal status is somewhere between self-employed and employee, are still open questions. The World Trade Organisation has started to discuss these matters.

In cases of trans-border telework within the EU, the European Convention on the Law applicable to Contractual Obligations (1980) must be referred to (Council Directive of 20 October 1980 on the approximation of the laws of the Member States relating to the protection of employees in the event of the insolvency of the employer). This has been ratified by most Member States, and it means that freedom of choice of the applicable law is the general rule. According to these rules, in the case of self-employed tele-workers the contract parties are free to agree on which law should be applicable to the contract. If the parties have not made a choice, the contract shall be governed by the law of the country where the service provider (i.e. teleworker) resides. The situation is quite similar for employment contracts: the parties are free to agree on which law should be applicable to the contract, and in the absence of an agreement the applicable law is that of the state where the employee normally carries out his/her work in performance of the contract. If the employee does not habitually carry out his/her work

in any one country, the applicable law will be that of the country in which the business he/she works for is situated. However, the free choice of law with regard to employ-ment contracts is more restrictive than in the case of self-employed: according to the relevant Convention, the employee always maintains the protection afforded to him/her by mandatory rules contained in the law which would be applicable in the case that no agreement had been concluded – fall-back law (Di Martino 2001: 117).

European Union Regulation 1408 contains provisions for the co-ordination of the member states' social security laws. Article 13 states that the law of one member state only can be applied and lists a number of criteria for determining the applicable law. The main rule is that the applicable law is the law of the member state in which the (tele)worker habitually works. Especially in cases where teleworkers accept work from several employers in one or more countries, the social security system of the state where the person works applies. The regulation applies to EU nationals and several other groups, but does not at present cover third-country workers or EU nationals ha-bitually working outside the EU area (Di Martino 2001: 117). Thus, if work is transferred to workers outside the EU, Regulation 1408 does not apply and the EU and its Member States are not responsible for the social protection of these workers. It must be de-cided whether such outsourcing should be regulated. It is, however, important as part of a general policy that customers and teleworkers be required to register themselves and their work, in order to prevent black-market economies.

B.1.4 Guidelines for Telework in Europe

The "Guidelines for Telework in Europe" is a European Union-wide agreement among the members of the Sectorial Social Dialogue Committee (SDC) for Telecommunica-tions linking together representatives of employers within the telecommunications sector of Union Network International's UNI-Europe. This agreement was signed in Brussels on 7 February 2001 by Telekom Austria, Belgacom, British Telecom, Eircom, France Telecom, KPN, OTE, Sonera, Telecom Luxemburg, Telecom Italia, Telecom Portugal, Telefonica, and Telia.[1]

1. Preamble
The Sectorial Social Dialogue Committee (SDC) for Telecommunications believes that the modernisation of employment markets is crucial for the future economic develop-ment of Europe.

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1 Source: http://europa.eu.int/comm/employment_social/general/news/telework_guidelines.pdf

Rapid changes in the competitive environment coupled with the development of new technologies, call for the modernisation of work organisation. New technologies, global competition and the increasing speed and volume of information, call for flexible and adaptable working relationships and organisation.

Telework constitutes a form of work organisation whose increasing use is a clear sign of a trend towards a more flexible and more mobile workplace. Telework is particularly important for the telecommunications companies, for whose products and services it provides an important field of application. Against this background, the Sectorial Social Dialogue Committee for Telecommunications believes that Europe-wide principles on telework are an important enabler for developing flexible work organisation in all the European telecommunications companies. Therefore it has adopted the following guidelines for telework which it proposes for adoption by the telecommunications companies in Europe, on a voluntary basis and according to each country's laws and collective bargaining practices. In doing so, the SDC has fulfilled the pledge contained within the joint statement for the Lisbon Summit.

2. Objectives
The Committee believes that telework, organised and introduced as a human and socially meaningful working method, can help in pursuing the following objectives:
- Arranging flexibility of work organisation
- Employment opportunities for structurally weak regions and for disabled people
- Greater responsibility for individual workers in planning and carrying out work
- Humanisation of work
- Improvement in the work/life balance
- Improvement of quality and productivity of work
- More job satisfaction
- Transference of work to people

3. Field of application
Having recognised the particular characteristics of home-based telework, the SDC clarifies that the following principles refer to those employees_who, using information and communications technology, carry out all of their work at home, or regularly perform some work at home whilst the remaining part is performed on the company's premises.

4. Principles

1. The introduction of telework will be voluntary on both sides. Collective agreements should be reached at the appropriate level (e.g. industrial, company) in order to provide a framework for the introduction of individual telework arrangements. Telework will take place subject to the suitability of the individual, the work and the working environment.

2. Teleworkers will be treated equitably with employees working on Company premises, and will be assigned to a Company organisation unit. Therefore, when an employee previously working on a company's premises agrees to telework, his/her employment status and conditions will not be affected.

3. All equipment will be provided, installed and maintained by the Company and will be returned if Teleworking terminates for any reason.

4. Consideration should be given, by the employer, to meet any additional costs involving Telework.

5. Teleworkers will have access to the same opportunities for training, career development and career advancement, which are available to other employees working on Company premises. They will be involved in the same "work review" policies adopted by the Company for the other employees.

6. When the home workplace is no longer available, the employer will make every effort to find alternative employment in accordance with the provisions of collective agreements and legislation.

7. The relevant Company's H&S regulations, according to laws and collective agreements, apply to teleworkers' home workplaces.

8. Arrangements should be made in order that teleworkers do not undergo exclusion and isolation, including, as far as possible the opportunity to meet with colleagues on a regular basis and access to company information.

9. Teleworkers must ensure that all equipment, information and data files are kept confidential and secure in conformity with Company policy on security and data protection.

10. Teleworkers must be informed of any performance monitoring facility adopted to control their work. As far as possible, control should regard output rather than activity. Any performance monitoring arrangements must be consistent, having regard for the specific characteristics of telework with those applied to those who work on Company premises.

11. Visits by company managers and employees to the home of Teleworkers must be by prior appointment and agreement.

12. Teleworkers have the same collective rights as the other employees working from company premises including the rights of communication with Works Council and Trade Union representatives.

5. Future developments
The SDC recommends these guidelines for adoption by the end of 2001, on a voluntary basis and according to each country's laws and collective bargaining practices. The SDC agrees to monitor the adoption of these Guidelines in 2002.

B.2 Quality of work and employment (in flexible work systems)

As described within part A of this report, e-work can be divided into individualised and office-based modes. Whereas in chapter B.1 crucial matters involved in individualised forms of telework (i.e. home-based work) are examined, it is clear that office-based e-workers share some of the characteristics of white-collar workers or knowledge workers in general. Hence, chapter B.2 gives an overview on the most relevant aspects of employment and job quality with a focus on knowledge workers. According to the European Foundation for the Improvement of Living and Working Conditions, four areas of job and employment quality can be identified (European Foundation, 2002: 6).

In the light of these objectives, there is no doubt that decisions on work organisation have an impact on employment and job quality. Furthermore, working conditions are a crucial factor not only for workers' job satisfaction and commitment to the company, but also for ensuring and improving a company's performance. Thus, a short assessment of the indications for changing working conditions, such as increasing flexibility and intensification of workload, will be presented first. Such developments are due to the shift in employment structure from industry towards the service sector, a greater emphasis on market constraints as well as the growing use of ICT. Second, general aspects of (a) career and employment security (e.g. modes of atypical employment), (b) health and well-being (e.g. stress at the workplace) and (c) reconciliation of working and non-working life are discussed. Within the following chapters B.3 to B.10, among other things specific job quality issues, such as skills development and training (→ chapter 7), or certain issues in the context of health, for example, computer-based work (→ chapter 5), are described in more detail.

During the 1990s, the labour market in most industrialised countries became increasingly flexible in terms of working time, work schedules, work location and work organisation. Flexibility comes in many forms – internal and external, quantitative and qualitative (see table B.2.1 below). Whether modes of organisational flexibility are perceived as positive or negative differs from worker to worker, yet these modes tend to reinforce each other. Social protection in the sense of "flexicurity" concepts is therefore no longer associated with one particular form of flexibility, but rather with an assortment of different types of flexibility brought forth by interruptions in professional life. Such interruptions characteristically arise from periods of training, unemployment or domestic work or follow periods of part-time or full-time working. In other cases a combination of flexibilities can be found, such as when working part-time under a fixed-term contract while teleworking under the same contract (European Foundation 2002: 13).

Table B.2.1: Different forms of flexibility

	quantitative	qualitative
external	**Employment status** • Permanent contract • Fixed-term contract • Temporary agency contract • Seasonal work • Ad hoc working *Numerical and/or contractual flexibility*	**Production system** • Subcontracting • Outsourcing • Self-employed work *Productive and/or geographical flexibility*
internal	**Working hours and pay** • Reduction/adjustment of working hours • Part-time work • Overtime/additional hours • Shift work • Night/weekend working • Irregular/unpredictable hours • Changes in pay (individualisation, variable fraction, etc.) *Time and/or financial flexibility*	**Work organisation** • Job enrichment • Teamwork/semi-autonomous teams • Multitasking/multi-skilled • Delegation of responsibilities • Project groups *Functional and/or organisational flexibility*

Source: European Foundation 2002: 14

While flexibility has become a major indicator for new forms of work organisation, the actual nature of work has changed, due largely to new technology and increased commercial constraints, bringing workers into more direct contact with clients and

causing increased time pressure. On one hand, all of these changes towards more knowledge-based work can lead to an increase in job satisfaction as work has become more interesting. On the other hand, greater worker responsibility, an increase in multi-skilling and work that both demands and provides more qualifications are not necessarily resulting in improved working conditions; these aspects are indeed associated with more intensive working, which can lead to greater frequency of stress and physical disorders as well as a higher on-the-job accident rate. The figure B.2.1 below offering data from the Third European Survey on Working Conditions indicates that working at a very high speed or under tight deadlines did in fact become more widespread between 1990 and 2000. About 60% of the European workforce reports such experiences. In addition, 21% of all respondents do not have enough time to do their job. Approximately 30% of all European employees have little or no control over their work tasks. This intensification affects all countries in the Union, all sectors of industry and all occupational categories, whereas the increase has been sharper in some cases than in others. These findings can be attributed first to shorter average working hours, requiring work to be carried out faster; second, to working environments in which the content of work has become more complex; third, to an increase in market pressures; and fourth, to the reduction of the workforce as a result of restructuring and budgetary constraints. According to the European Foundation (2002: 17), some studies reveal that the intensification of work, and with it increased time pressure, comes at a price. It is directly linked to the incidence of stress, backache, injuries and muscular pains in the neck and shoulders.

Figure B.2.1: Working at very high speed or under tight deadlines
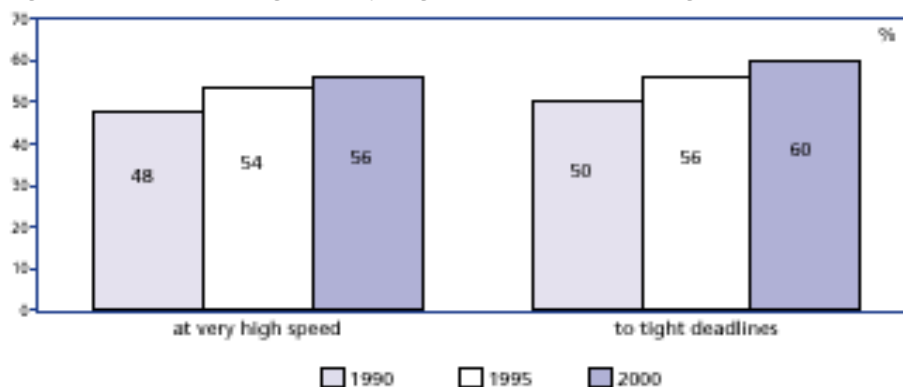
Source: Europ. Foundation 2002:17

The division of the workforce into core and peripheral staff or post-tayloristic and tayloristic workplaces can be verified for single countries (e.g. Germany, cf. Bosch 2000) but holds also for global labour markets. For instance, the European Foundation (2002: 23) points to figures from Eurostat, revealing that the proportion of workers in more highly skilled job categories (managers, professionals, technicians) increased signifi-

cantly between 1992 and 2000, from 31% to 36%. This increase reflects an overall improvement in competence in the EU.

Figure B.2.2: Employment growth by group of occupations in OECD countries, average annual percentage change, 1992 – 1999
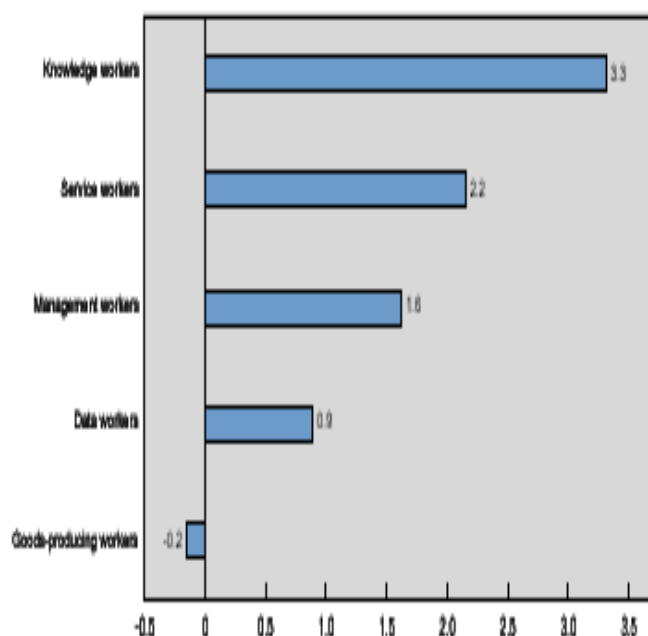
Source: OECD 2001: 14

The OECD also sees knowledge-intensive employment in the US and EU countries as becoming increasingly important, since the number of jobs for scientists, engineers and ICT specialists grew much faster than other types of employment between 1992 and 1999 (OECD 2001: 14). Hence, less skilled jobs tend to be replaced by technology or transferred to low cost countries.

Today's working life in flexible organisations is far too complex to be able to estimate all possible repercussions on the quality of work and employment. Different groups within the workforce can be confronted with completely different problems, e.g. highly skilled workers compared to the less skilled. For example, in the case of knowledge work among professionals, technicians or even clerks in sectors like ICT or consulting, workers are increasingly being forced to accept responsibility for actively structuring their own work and therefore also for the entire organisation of their everyday life. "As boundaries of work relationships become blurred and management by objectives (instead of instructions) is introduced, workers gain freedom of action, but have to pay for this by taking on the duty of structuring their work in a way that enables them to cope with it. This requires the re-establishment of routines on a personal level" (STAR Annual Report 2001: 22).

Although overly simplified, it is useful to distinguish between two types of "flexible" work organisation, both characterised by a high degree of decentralisation: (a) those with a relatively low level of operator autonomy; relatively low qualifications and few

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opportunities for learning on the job; compared to (b) those with a relatively high level of operator autonomy, especially in the form of autonomous or semi-autonomous groups; and relatively high qualifications as well as more opportunities for learning. "Ultimately, then, the modernisation of work organisation, which means the establishment of organisations based on increased decentralisation of functions and greater flexibility of production, is not necessarily bringing about an improvement in working conditions or the development of skills. Thus, not all flexible organisations are of the 'learning' type nor are making a contribution to social progress" (European Foundation 2002: 24).

B.2.2 Selected aspects of career and employment security

In all European Union nations except Denmark, Greece and Italy, a development away from regular employment relationships and towards atypical ways of working (defined as comprising self-employment, part-time and temporary work) is taking place. While the picture (see table B.2.2. below) seems quite uniform when viewed from a distance, the composition of the atypical labour force is, however, rather inhomogeneous: in Austria, Belgium, France, Germany, Ireland, the Netherlands, the UK and the Nordic countries, part-timers are much more numerous than the self-employed and temporary workers. Spain has extremely high rates of temporary workers (a result of the dismissal protection legislation in this country). In Portugal, self-employed, part-time and temporary workers occur in similar frequencies. In Greece and Italy, most atypical workers are self-employed, whereas part-time work here is far below the EU average (Gareis 2001: 49).

Table B.2.2: Atypical forms of employment in the EU

	in % of total labour force	
	1988	**1998**
Belgium	23.3	31.0
Denmark	29.1	28.3
Germany (West)	19.7	27.0
France	19.8	27.7
Greece	27.7	26.4
Ireland	17.2	24.5
Italy	25.2	19.5
Luxembourg	11.8	12.3
Netherlands	35.9	44.6
Portugal	25.8	30.1
Spain	31.1	39.6
United Kingdom	29.9	34.0
Finland	n.a.	26.9

| Austria | n.a. | 19.8 |
| Sweden | n.a. | 32.7 |

Source: Gareis 2001, with data from Eurostat Labour Force Statistics and IAB

This trend towards atypical employment as a repercussion of higher flexibility does not necessarily mean that individuals are be doomed to give into the hegemony of "the market". *First*, the labour market policy of any given nation together with personal preferences (e.g. part-time) and national culture play a very important role in determining the shape of atypical employment. *Second*, popular concepts of non-standard work arrangements like "portfolio working", freelancing or even "e-lancing" are attracting disproportionate attention as compared to the numbers actually working in these ways. Although most job holders will have to adapt to online relationships, working only on the Internet will remain an exception. Instead, employees within traditional employment relationships are being required to become more mobile, autonomous and self-reliant, using the new technologies to keep in touch and to work. Thus, while change is taking place within traditional dependent employment relationships, the stability and continuity of employment structures have been underestimated (STAR Annual Report 2001: 22). *Third*, job tenure has not declined, but stayed stagnant or has even increased in the large majority of European countries. This is attributed to the necessity of preserving know-how and the need for a working environment that supports innovative behaviour of workers. Trust remains an essential element for efficient co-operation among working team members. Trust-building becomes difficult when relations between individuals are merely temporary, this fact, in turn, limits the prospects for temporary virtual organisations taking hold in larger parts of the labour force (Gareis 2001: 51).

The picture of rising atypical employment on the one hand and stable average job tenure on other hand can also be found in almost all OECD countries. An investigation by the ILO on a large subset of OECD countries discovered that stability of employment continues to be the dominant pattern. In 12 out of 16 countries, average job tenure was stable or even increased between 1992 and 1998. Furthermore, the share of those with tenure of less than 6 months, 1 year, and 5 years has actually decreased, whereas tenure of more than 10 years has become more widespread. The latter group now accounts for 40 per cent of the workforce across the 16 countries. While male tenure has declined in several countries, this has usually been compensated for by an increase in women's job tenure. Even in the United States, noted for the flexibility and diversity of its labour market, job tenure shows overall stability. Focusing on the aggregate level might overlook where change is occurring. The study also gathered job tenure data for specific sectorial and occupational categories and found little difference from the overall picture of stability. ICT-intensive sectors such as storage, transport and communication have higher job tenure than the overall average and, with some exceptions, tenure in these sectors is increasing rather than decreasing. The pattern is

much the same in the financial intermediation sector, also a heavy user of ICT. Business services show lower average tenure in all countries, but over the past three years tenure has actually increased. Examining the new networking occupations, there is, here too, little divergence from the overall average. It is likely that a closer look at very specific labour markets, such as those of professional freelancers or the dot.com entrepreneurs, would show much greater instability. But these groups are still only a small minority of the workforce (ILO 2001: 112 to 115).

Despite the incidence of employment stability in OECD-countries there is evidence for the division of labour into core and peripheral staff. Firms in a competitive, high-tech environment, where high-performance work systems with flatter hierarchies and teams are in place, depend on their skilled workforce. Evidence shows that performance is negatively affected by qualified workers quitting. Hence, whenever investment in employee skills is important, interest in the retention and use of those skills rises, because otherwise search and training costs for replacing workers are incurred. It is only when these costs are not important that tenure also becomes less important. For example, firms that rely on pools of unskilled labour in locations where such labour abounds might prefer the lower wage costs incurred by high turnover to the longer tenure of their staff. Hence, non-skilled or semi-skilled workers in industrialised economies and also larger parts of the workforce in developing countries are more likely to be pushed towards joining the contingent workforce.

Case study: employee profiles in contact centres - United Kingdom

Contact (call) centres have been some of the fastest growing workplaces in the United Kingdom in the last five years. Almost two percent of the working population are currently employed in call centres. Call-centre employees can be grouped into two categories:

- The Pre-Careers, aged from 18 to 30; they are often students, college-leavers or graduates. Many students look for work which they can balance with their studies. Call centres offer a flexibility of hours ideal for them. This group of employees has the opportunity to rise within the organisation and the rate of progression is much more rapid than in other industries.
- The Converts, who joined by chance or not thinking they would like the work; this group seems to have the highest retention rate. One reason is their higher average age and, as more employers recognise the value of targeting this group of potential employees, this age group will increase within call centres. The current average age is 27.

A total of 67 per cent of employees are women, and this is also reflected in the percentage of women managers in contact centres. They offer women a career in which they can rise through the ranks without hitting the "glass ceiling" as in other professions. Fifty per cent of attrition is attributed to redeployment within the company, thus

implying that anywhere of up to 50 per cent of employees successfully manages to work their way up within their company.

But the picture is not only positive, as working conditions in call centres can vary greatly, depending to a large extent on the type of work being performed. According to a survey by International Call Centre Benchmarking covering 205 call centres with over 26,000 workplaces in Europe, USA, South Africa, the Middle East, South East Asia and Australia, staff absenteeism increased from 4.7% to 6.1% in 1997-1998.

Source: ILO 2001: 129; Di Martinho 2001: 101

B.2.3 Selected aspects of occupational health and safety

Over the past decades, common concern over job stress has been growing in industrialised countries. Stress is seen as the perceived imbalance between internal and external demands facing the individual and the perceived ability to cope with the situation. Whereas physical burdens are being more and more reduced by traditional OHS measures and the shift towards white collar work, new health risks are arising as a result of the intensification of work. Nowadays, mental stress coming from time pressure, information overload or so called "trans-border stress", caused by collaboration with co-workers speaking different languages or working across different time zones, is typical for knowledge workers.

A number of studies have determined the extent of stress at work in industrialised economies:

- Studies from the U.S. indicate that 40% of workers perceive their job as very or extremely stressful (National Institute for Occupational Safety and Health[2].
- The "Bristol Stress and Health at Work Study" (2000)[3] indicates for the U.K. that about one in five workers reports either being very or extremely stressed by work. This amounts to about 5 million workers in the U.K. The report points out a correlation between reports of being very stressed and a range of job-design factors, such as work overload and the lack of support by managers.
- According to the Third European survey on working conditions (cf. Paoli and Merllié 2001), stress is one of the most common work-related health problems in the European Union. 28% of employees feel that their work causes stress, whilst among the respondents "professionals" (40%) and "technicians" (35%) are most strongly affected by stress. Not surprisingly, people that work at high speed all the time or almost all of the time, report greater stress (as well as other health problems, see table B.2.3) compared to those who almost never or never are confronted with intensive work.

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2 http://www.cdc.gov/niosh/stresswk.html (04-04-2002)

3 http://www.hse.gov.uk/research/crr_pdf/2000/crr00265.pdf (04-04-2002)

Table B.2.3: Health problems due to high speed work vs. less intensive work in the EU
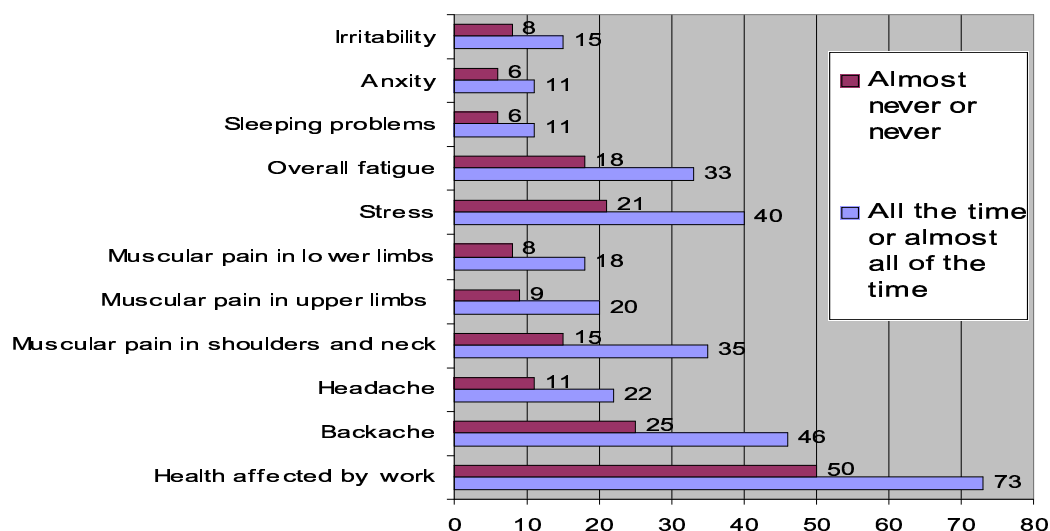
Source: European Foundation 2001:14

Furthermore, a study by the ILO (2001b: 12) presents evidence for occupational stress being a significant problem even in newly industrialised countries or in the developing world:

- A large random sample of Taiwanese workers concluded that the Taiwanese displayed worse physical health than British industrial workers. This finding was confirmed in a recent study of Taiwanese managers who not only perceived stress to a larger degree than the general workforce, they were also more stressed than comparative samples form Hong Kong, the UK and Germany.

- In a study of Brazilian white collar workers, it was found that Brazilian workers had higher levels of stress and were faced with more sources of stress than a comparison group from the UK.

Predictors of stress

Summarising the results of key literature,[4] the following characteristics of work are seen as the most relevant predictors of stress:

- Design of task: heavy workload, infrequent rest breaks, long working hours and shift-work, semi-skilled or unskilled work;

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4   See NIOSH http://www.cdc.gov/niosh/stresswk.html; European Agency for Safety and Health at Work 2000; ILO 2001.

- Management style: lack of participation in decision-making, poor communication, lack of family-friendly policy;
- Interpersonal relationships: poor social environment and lack of support;
- Work roles: conflicting or uncertain job expectations, too much responsibility;
- Career concern: job insecurity and lack of opportunity for growth or promotion, status incongruity.

In addition to these problems, there are other sources of stress recently having received considerable attention, namely workplace violence or violent acts involving (a) bullying/mobbing or (b) sexual and racial harassment. The phenomena of violence and harassment at work is seen as a logical consequence of increased time pressure and work intensity.

- Typical behaviour patterns falling under the category of bullying/mobbing are withholding information, attempting to find fault with someone's work, public humiliation and social exclusion or isolation. In the Third European Survey on Working Conditions based on 21,500 face-to-face interviews with employees in the EU, 9% reported that they were exposed to intimidation and bullying. The report estimates that at least 10% of employees in a global company group can be considered as being currently subjected to bullying.
- As in the case for workplace bullying, sexual and racial harassment may also be considered a workplace social stressor. According to the ILO report (2001b: 22), some evidence exists suggesting that women from ethnic minorities are most vulnerable to sexual harassment. The UK Commission for Racial Equality (CRE) has watched with mounting concern as the number of cases of racial harassment at work reaching the industrial tribunals has increased every year. Relevant studies, published by the ILO (2001b: 23f), show the extent of both sexual and racial harassment at work:
- In a study of "ethnic harassment" in the US (defined as verbal abuse and exclusionary conduct due to ethnicity) among four samples of Hispanic employees in diverse contexts, 40-70% reported having experienced such behaviour within the last 24 months.
- 2% of workers within the EU reported that they were subjected to sexual harassment.
- A large-scale German survey undertaken by the Federal Institute of Occupational Health and Safety concluded that more than 90% of women had experienced sexual harassment at work during their working lives.
- In countries where religious and cultural beliefs oppose women working, any reported experience of physical or sexual harassment is unlikely to be taken seriously.

Costs of stress at work

Cooper et al (1996, cited in ILO 2001b) suggest that the typical outcomes of stress among others are: impaired performance and productivity; greater absenteeism due to sickness; higher fluctuation rates; unsafe behaviour and increased propensity for accidents; a reduction in job satisfaction; a poor workplace morale; and less commitment to the organisation. Moreover, stress can manifest itself in anxiety and irritability which, in turn, may influence social relationships at work. Hence, it should be obvious that stress-related effects result in costs for the individual, organisation and society. The ILO report (2001b: 42ff) refers to an assessment of the costs of stress/harassment at work to the organisation. Including other categories such as impact of long hours, lack of commitment, personal problems and poor workplace morale, the ILO estimates that approximately 40% of all absenteeism could be attributed to stress. With respect to the cost of stress and violence to society, the ILO estimates that this amounts to approximately 0.5 – 3.5% of the GDP per year.

Workplace health promotion – a holistic approach to intervention

Bearing in mind the existing problems and trends already outlined, occupational health management face the challenge of moving forward from reparation/compensation to prevention. By emphasising the potential costs to an organisation, organisations should be motivated to invest time and money in the prevention of stress and thus provide health promotion. Hence, organisational stress management intervention as well as policies such as information, consultation and participation of employees are fundamental elements in successful stress-prevention strategies.

Traditional OHS has significantly improved health in the workplace by reducing accidents and preventing occupational diseases. However, it has become obvious that OHS alone cannot address the wide range of psycho-social issues mentioned above. Applicable guidelines for Workplace Health Promotion (WHP) are defined within the "Luxembourg Declaration on Workplace Health Promotion in the European Union" that was endorsed by all European Union Member States in 1997. These principles refer to a "modern corporate strategy which aims at preventing ill-health at work (including work-related disease, accidents, injuries, occupational diseases and stress) and enhancing health-promoting potentials and well-being in the workforce"[5]. The guidelines of a successful WHP are:

- All staff members have to be involved (participation);
- WHP has to be integrated in all important decisions and in all areas of organisations (integration);

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5 http://www.baua.de/part/whp/publ.htm (11-04-2002)

- All measures and programmes have to be oriented to problem-solving cycles: needs analysis, setting priorities, planning, implementation, continuous control and evaluation (project management);
- WHP includes individual-directed and environment-directed measures from various fields; it combines the strategy of risk reduction with the strategy of the development of protection factors and health potentials (comprehensiveness).

Case study: WHP at DuPont, Netherlands, Location: Dordrecht (chemical industry, 1,500 employees)

Convinced that a company can no longer survive nowadays without workplace health promotion, DuPont assigned responsibility for the health sector to the management. DuPont has developed the so-called "Wellness Checkpoint" in order to analyse the health and well-being of its employees.

- The employees can thus assess the health risks in their jobs and their lifestyles and, based on this, develop strategies for change.
- The "Safety Off-the-job Commission", a working group with representatives from every department, looks after the welfare of the staff – even outside of working hours.
- The employees are involved by making suggestions to the company within its improvement scheme.
- All employees are to undergo further training at least six days every year in order to be able to cope with future requirements.
- Medical examinations, assistance with drug and alcohol problems, healthy food in the canteen, stop-smoking programmes, stress management courses, sports and relaxation opportunities, and many other activities are a matter of course at DuPont.
- There are schemes for particular risk groups, such as shift workers.
- DuPont evaluates all WHP measures, and the management is kept informed of plans and results.

The list of successes is very long: job satisfaction and the working atmosphere have improved as a result of better working conditions and changes in the style of leadership. The high implementation rate of suggestions for improvement submitted by employees has contributed to improved health and satisfaction. On the profit side, the company has saved roughly one million euros, increased productivity, gained a more attractive image and recorded a lower staff fluctuation. Absenteeism has fallen by 0.5% since 1994, and the accident rate is only one tenth of the average for the chemical industry.

Source: BKK Bundesverband 1999: 51

Case study: WHP at Nokia, Finland (21,000 employees)

Customer satisfaction, respect for the individual, achievement and continuous learning are treated as fundamental values at Nokia. The company has started a "Total Wellness Programme" for employees with the aim of creating health-promoting working conditions and which includes all other areas of life. The programme was developed in co-operation with the Finnish Institute of Occupational Health and Safety. The human resources and occupational medicine department are responsible for workplace health promotion and prevention programmes. The company promotes numerous cultural and social activities for employees and organises, for example, literature reading sessions, theatre performances and parties. The company uses its own statistics on working days lost due to illness, industrial accidents and occupational diseases as well as data on staff satisfaction and employee health as a basis for planning health promotion projects. As part of a fitness survey, employees are assessed on a scale from one to five on health-related aspects such as work, physical condition, ability to cope with stress, family life, social contacts and hobbies. Stress at work, health and qualifications are on the agenda in the annual "development discussion" between superiors and employees. Great emphasis is placed on gaining further professional qualifications. Nokia has established its own global learning centre network. The company regularly evaluates participation in the wellness programme and other WHP activities. If the results are positive, successful activities are extended to the rest of the company.

Source: BKK Bundesverband 1999: 52

B.2.4 Selected aspects of reconciling working and non-working life

According to figures from the Third European Survey on Working Conditions, average working hours in the EU are falling. In 2000, these averaged 38.2 hours per week for all workers and 36.7 hours for employees only, a reduction mainly arising from an increase in the proportion of those working part-time. However, these averages conceal significant extremes. Thus, while 17% work part-time, this category includes 32% women but only 7% men. Part-time work is also more widespread in some countries than in others. While 33% of the population work part-time in the Netherlands, where it can be said that there is a culture of working part-time among women, part-timers account for as few as 5% in Greece. Twenty percent of the entire European workforce worked more than 45 hours in 2000 (men: 27%, women: 11%). One third of all workers are affected at some stage by long working days (more than 10 hours per day), mainly male workers in managerial and professional jobs and self-employed.

In contrast to this slight reduction in average working hours per week, flexibility in terms of variability and reduced predictability of working hours is rising. 19% of all employees work at least one night a month, 47% at least one Saturday a month and 24%

at least one Sunday a month. 37% of all employees do not work the same number of days each week and 24% have different working weeks within one month. Forty-one percent have fluctuating daily work schedules, 22% of all employees do shift work. For 19% of the workers in this survey, working time flexibility does not fit with family and social commitments (Paoli and Merllié 2001: 20ff).

For many people, the working day does not end when paid work ends. A second working day with domestic work often begins at home (household tasks, education of children, care of elderly/dependent relatives etc.). Not surprisingly, this double work-load is still distributed in a completely unbalanced way between men and women (the same holds true for income levels). Women are generally required to juggle the demands of their jobs on the one hand and domestic tasks and caring for children and other relatives on the other, as Table B.2.4 reveals.

Table B.2.4: Who does what at home in EU 15 (% of respondents performing the task for 1 hour or more every day)

At home, who:	Women	Men
Takes care of the children and their education?	41	24
Does the cooking?	64	13
Does the house-work?	63	12

Source: European Foundation 2002: 21

Table B.2.5: Income levels in EU 15 classified by gender (%)

Income level	Women	Men	Total
Low	26	9	16
Low-medium	24	19	21
Medium-high	17	22	20
High	10	22	17
No answer	23	29	26

Source: European Foundation 2002: 11

Making it easier to reconcile working and non-working life is an essential aspect, both for encouraging entry into the labour market and for enabling people to remain at work; this must be seen against the demographic background of an ageing population and an increasing number of single-parent families. It is a question of being able to remain at work despite the changes in one's private life (motherhood or fatherhood, training, sabbaticals, etc.) on the one hand and being able to carry out non-work-related tasks and obligations while maintaining a job on the other (leisure, activities, child-rearing, temporary/permanent care of dependants, etc.). Thus, companies, too, are being looked to for programmes addressing the work-life balance, on the one hand in to or-der to better be able to reconcile paid work and domestic work while maintaining a

gender perspective on equal opportunities, and on the other hand in order to improve job quality by reducing stress and burn-out due to the intensification of workloads.

Case study: Procter & Gamble Germany newly receives award for equal opportunity and corporate culture

For the second time since 1999, on May 6 2002 Proctor & Gamble Germany received the TOTAL E-QUALITY award for helping employees better reconcile family and job obligations (http://www.total-e-quality.de). Being able to reconcile family life and career demands is ensured by flexible working hours geared toward the individual's personal life situation. For the last five years, this award has been bestowed on companies which pursue and successfully realise the goal of achieving equal opportunity for women and men.

Beyond meeting legal requirements, Procter & Gamble's initiative has introduced teleworking positions, sabbaticals, shortened working hours as well as a job-sharing model. Of course, flexibility and mobility among employees also play important roles in the programme, too. To this end the company ensures its staff of a high degree of personal flexibility by means of family and childcare facilities during business trips along with special support for spouses working apart from each other while one of them is abroad for a period of time due to business reasons. Employees with children benefit from the company working together with a private agency which co-operates with municipalities in brokering childcare services. Harmonising the demands of families and jobs is facilitated by an array of child-care options, including kindergartens and contacts to care-givers and day-care centres.

Measures taken to ensure equal opportunity for women and men within the company are also innovative. These are based on the insight that Proctor & Gamble's potential lies in the diverse talents, abilities and qualifications of its individual employees. In this connection, successful co-operation among people from different nations and cultures and with a variety of mother tongues is viewed as a prerequisite to being innovative and competing on the market. For this reason, utilising this diversity is one of the main tasks which the entire management at Proctor & Gamble has been entrusted with. A far-reaching action plan for equal opportunity was enacted in 1997 and in the face of employees' needs has continued to be further developed ever since. This programme has been developed in accord with the company's statement of basic values. The objective stands of sensitising all employees to this vital issue. To this end, Procter & Gamble Germany has established a Women in Business Team. This consists of a group made up of men and women from all departments of the company who are dedicated to enacting the Diversity Programme. They do this, for example, by delivering presentations and workshops aiming to clarify the concept of diversity. Another aspect of these diversity efforts are various internal and external mentoring programmes.

Source: http://www.procterundgamble.de

Can e-work increase the reconciliation of working and non-working life?

Within the FAMILIES project (www.families-project.com) about 100 in-depth case studies concerning how, from families' point of view, e-working affects work-family issues have been carried out in four countries (Ireland, Italy, Germany and Denmark). According to a taxonomy of individual e-work arrangements in time and place (cf. figure B.2.2 below) and different family types (i.e. couple with or without children, single parent family etc.) a broad variety of different patterns was examined.

In spite of the considerable diversity in work and family patterns, the study reveals that the flexibility in time and place provided by e-working can offer new solutions to the current repertoire of family-friendly options. Many of the cases show how e-work can increase flexibility, degrees of freedom and balance between work and family life (e.g. suitable care for children or for dependents; ability to get back into the workforce after absence due to family reasons, etc.). Yet other cases show that there is sometimes only little choice involved, because e-work is part of the job and can thereby have negative implications for family life (e.g. on-call work, shift-working or because of after-hours extensification through working from home). Moreover, the cases show how central gender is, i.e. women are more likely to adopt e-working from home for family reasons and men are more likely to do it for personal or work-related reasons. When compromises have to be made to meet family needs, the cases suggest that women are more likely to be the ones whose situations are affected in a negative way, for example, by having to accept negative career implications or social isolation.

Figure B.2.2: Taxonomy of e-work arrangements in time and place

	Typical place	Atypical place
Typical time	• IT changes the way work is done in conventional settings at conventional times	• Home-based telework "9-to-5" • Mobile tele-work "9-to-5" • Neighbourhood work centre "9-to-5"
Atypical time	• Shift-work in conventional settings enabled/induced by IT (e.g. call centre work)	• Home-based telework (atypical times) • On-call work at home or mobile (night, weekend, etc.)

Source: Families 2002: 2

Hence, whether e-work modes are suitable depends on the freedom of choice and specific family requirements. The benefits are not realised automatically, however. E-work, especially home-based work, without support structures can only seldom be re-

garded as a good solution per se. "Supports that are needed include wider availability of suitable childcare and eldercare services, more consideration of family needs in the design of e-working arrangements, better preparation of e-workers and their families by employers and by the educational system (workers need technical and self-management skills, families need to be prepared for the changes associated with e-working), and more awareness and understanding by everyone (family members, neighbours, employers and work colleagues) of what e-working involves and of its legitimacy as 'real' work" (Families 2002, summary).

B.2.5 Some formulations from existing codes of conduct

Company Code of Royal KPN N.V.
KPN supports employees in their career development, ensuring that the work they do remains challenging and stimulating. Every employee has the opportunity to develop and keep pace with the changes and expansions that occur in the company. KPN guarantees safe, healthy working conditions and we believe it is important for employees to strike the right balance between work and life. Our employees enjoy favourable, competitive conditions of employment and are treated with respect. At KPN, intimidation and discrimination are unacceptable.

Motorola, Code of Business Conduct
We are all responsible for maintaining a safe workplace by following safety and health rules and practices. We are responsible for immediately reporting accidents, injuries, and unsafe equipment, practices or conditions to a supervisor or other designated person. Motorola is committed to keeping its workplace free from hazards. In order to protect the safety of all employees, each of us must report to work free from the influence of any substance that could prevent us from conducting work activities safely and effectively. Threats or acts of violence or physical intimidation are prohibited.

Nokia, Code of Conduct
Nokia employees must strive to respect and encourage teamwork, and the strength that comes from diversity. Nokia will strive to pay fair compensation, and promote a safe and healthy workplace. Nokia will not discriminate on any of the grounds universally recognised as arbitrary. Nokia will continue to encourage equal opportunity as a key part of the "Nokia Way". Nokia will continue to invest in the personal and professional learning and growth of Nokia's employees. Nokia will encourage its employees to lead balanced personal and professional lives.

Telefónica, Code of Conduct
UNI and Telefónica confirm their support and respect for applicable standards for the environment, security, and health and safety at the workplace. That is:

- The guarantee that work places are safe and do not imply risk for the security and health of workers (ILO Convention 155). Best occupational health and safety practice shall be observed, safety equipment shall be provided when necessary to prevent, as much as possible, accident hazards and harmful effects for health.
- The co-operation of workers and their representatives for the observance of the adopted measures to guarantee health and security and these will receive the appropriate information and training in the area of occupational health and safety.

B.3   Electronic Monitoring and Data Protection

The changes in working life brought about through computer-related technology include the area of work surveillance and performance monitoring: Computers, together with a growing supply of monitoring software, allow new ways of tracing what employees do when at work, e.g. assessing the number of their keystrokes per period of time, the time they spend at and away from the computer, and the files they process, including both websites they visit and e-mails they send and receive. Moreover, the computerisation of telephone systems has facilited the monitoring of employees' telephone communication, e.g. by assessing the length of phone calls, the numbers dialed, the time spent between calls and also the calls' content. These new possibilities of monitoring and surveillance presumably are of special relevance for e-work and e-collaboration arrangements, as both are characterised by a varying degree of employee remoteness from the company unit responsible for their supervision, which prevents traditional ways of employee monitoring, like observing the amount of time spent at the office or personally checking what an employee is doing, from being applied. Moreover, e-work and e-collaboration arrangements are particularly frequent in occupational fields that are most susceptible to electronic monitoring, including data and word processing, and call center work.

We therefore take a closer look at the topic and review empirical and discursive material from existing social science literature, public discussions and our own interviews with experts and stakeholders, attempting conclusions for e-work and e-collaboration.

B.3.1 Information available through Electronic Monitoring

While it is beyond the scope of this paper to review the technical dimension of electronic performance monitoring and work surveillance in an extensive way, we briefly sum up what kinds of work-related information may be gathered given the present technical possibilities.

The first level of assessment technically enabled pertains to aggregated *work-related quantities*, i.e. the *time* an employee spends at the computer or on the phone, *the number of keystrokes or calls* he makes, and similar, more task-specific quantities. In the case of computers, a personal log-in procedure suffices to allow a time-assessment; for telephone communication, the total calling time is reported in most telephone bills – although this does not allow to single out the calling time for sub-periods like days or weeks. To assess the number of computer keystrokes, special software packages are necessary.

A more specific kind of information is provided by the so-called *"traffic-data" of online and telephone communication*, i.e. the names of files processed and websites visited, the senders and adressees of e-mails, the length of particular calls and the numbers dialed. For common data files like Word documents or Excel sheets, traffic data consisting of the file name and information on when and by whom it was accessed can be obtained through the company network's file server, provided that files are stored in a common network directory accessed through personal log-in. Information concerning web- and e-mail-related traffic is provided by so-called *log-files*, scripts containing what websites were visited, where e-mails were sent to and wherefrom received, all data related to time. Such files are created and stored by the company's mail- and web-server. Telephone-related traffic data indicating what numbers were called when and how long the calls took can be obtained through a device called a "pen register". Traffic data can either be evaluated through ordinary search functions offered by standard software or by special software packages, including Win What Where, WebSense, Dynamark, Net Access Manager, and LittleBrother 1.2.

A further increase in information density can be achieved through tools granting access to the *content* of files, websites, e-mails and phone calls. For a data file, this can most easily be accomplished if the file is stored in a common network directory, thus being accessible for all entitled to log onto it. To review the content of visited websites, it suffices to know their URL which, as already mentioned, is being stored in the logfile. For websites, the collection of traffic data therefore already includes the possibility to access their contents. Sent and received e-mail messages can be accessed through the company's mail-server, even after they have been deleted by the employee. It is also possible to automatically send a copy of all messages an employee processes to a database intended for monitoring without the employee noticing. To listen-in on telephone calls, special technical facilities are required. Again, the collected content-related data can be evaluated and analysed by various search functions provided by standard and special, possibly customised software.

B.3.2 Relevant legislation

What legal regulations apply to the three categories of computer-based monitoring just identified? To which extent do they indicate what category may or may not be applied under which circumstances? To our knowledge, none of the monitoring categories is up to now generally precluded or specially restricted anywhere in the world. There are, however, considerable differences regarding the regulation of circumstances under which monitoring measures may be taken, and also concerning the tendencies of the relevant jurisdiction.

USA

In the United States, there is up to now no federal legislation that explicitly adresses the application of computer-based performance monitoring and work surveillance. The jurisdiction applying general laws to monitoring issues however almost entirely decided against any limits of application, as case-related evidence indicates (e.g. Bourke vs. Nissan, Shoars vs. Epson, Smyth vs. Pillsbury, see Julian/Weiss 1999 and www.privacyrights.org for details). Thus, employers may perform all categories of monitoring, including the evaluation of phone-call and e-mail-contents, without informing the employee or observing any other restricting legal principle. The only exception is that in California, listening-in on calls has to be indicated.

EU

In the European Union, the application of performance monitoring and work surveillance measures faces the requirements stated in the EU Directive on Data Protection (Directive 95/46/EC – European Commission 1995). These requirements include individual rights to

- procession of personal data only if certain specified reasons – including individual consent and "legitimate interests pursued by the controller" – apply (Article 7),
- accordance with the principles of finality,[6] legitimacy[7] and proportionality[8] in the procession of personal data,
- be informed about what kind of personal data are collected, by whom and for what purpose (principle of transparency),
- to rectify incomplete or incorrect personal data collected,
- to protection of sensitive personal data, except if legitimate reasons apply.
- to have their personal data transfered to third countries except where the country in question ensures an "adequate level of protection" (Article 25).

These common minimum standards – some of which were already included in the OECD's data protection principles (OECD 1980) – are complemented by differing national legislations and jurisdictions in the different EU countries. Just two examples for national standards that go beyond the directive's requirements and imply a special restriction for the monitoring of contents: In Austrian jurisdiction, the general protection of the individual personality is interpreted as precluding the recording and evaluation of the content of job-related calls except during trial periods. Secondly, the German jurisdiction has shown a tendency to extend the German personality protection to the monitoring of e-mail-contents. A corresponding law concerning the privacy of e-mails at

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6 Finality means that personal data may only be used for the purpose they were collected for.

7 Legitimacy means general compliance with the legislation in force.

8 Means that the amount of personal data collection must not be "excessive in relation to the purposes

for which they are collected and/or further processed." (European commission 2001c, 21)

work has been announced by the German government, but not yet realised.[9] The emergence of special restrictions concerning particular categories of monitoring for the whole European Union in the future depends largely on the forthcoming EU directive on workplace monitoring and surveillance that is currently worked out and expected for 2003 (see European commission 2001c, 25).

Non-western countries

In recent years, several countries outside the Western world have adopted new legislation concerning privacy and personal data protection that resembles the EU's data protection principles (see www.privacyinternational.org, www.privacyexchange.org). This has been described as an indirect result of the EU's data protection directive, which as mentioned above forbids the transfer of personal data in non EU countries unless they secure "adequate protection".

- The *Malaysian* Government has drafted a new legislation on personal data protection in Fall 2000 before presenting it to the Parliament in the middle of 2001.
- The *Hongkong* data protection principles are comparable to the European ones. There is a data privacy comissioner (see www.pco.org.hk) who issued a Code of Practice for Employee Monitoring and Personal Data Privacy at Work in 2002.
- *Taiwan* enacted the Computer-Processed Personal Data Protection Law on August 11, 1995 to "regulate the computerized processing of personal data so as to avoid any infringement of the rights appertaining to an individual's personality and facilitate reasonable use of personal data." Data may only be collected within the scope of necessity for official purposes, with the written consent of the concerned party, and granting that no potential harm will be done to the rights and interests of the concerned party.
- In *India* and the rest of Asia, there is no legal personal data protection based on the European model. The European Union general data protection directive is however expected to also have an impact on India and other Asian countries in the future.
- The Chilean Act on the Protection of Personal Data took effect on August 28, 1999. The Act is the first of its kind in Latin America and contains principles similar to some of those stated in the EU's Data Protection Directive (information, consent, legitimacy, finality, data access). It does however not provide for the establishment of an independent data protection agency. Instead, unresolved complaints are to be handled by the regular court system. There is no general registration requirement for data controllers.
- In 2000, the Argentinian parliament set the "Personal Data Protection Act" in force, a law that is quite similar to the Chilenian one.
- In Africa, legislation related to privacy and data protection does only exist in South Africa (Access to Information Law from 1997).

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9 see www.wired.com/news/politics/0,1283,39610,00.html

B.3.3 Actual use of Electronic Monitoring

Given the considerable amount of possibilities to electronically monitor employees' work behaviour and work performance, and given the current state of their legal regulation just reviewed, it appears desirable to estimate the extent to which these possibilities are actually used by employers – are they already common components of everyday worklife or still rather marginal phenomenons applied only by the most cautious employer percentile?

Such questions call for quantitative data. Unfortunately, no such data have yet been collected for the European Union. Table B.3.1 shows U.S. figures collected through surveys of managers by the American Management Association:

Table B.3.1 Electronic Performance Monitoring in U.S. companies

	1997	1998	1999	2000	2001
Content-related monitoring:					
Recording & review of telephone conversations	10.4 %	11.2 %	10.6 %	11.5 %	11.9 %
Storage & review of voice mail messages	5.3 %	5.3 %	5.8 %	6.8 %	7.8 %
Storage & review of e-mail messages	13.7 %	19.6 %	21.4 %	30.8 %	36.1 %
Monitoring Internet connections	Not asked	Not asked	Not asked	54.1 %	62.8 %
Video recording of employee job performance	15.7 %	15.6 %	16.1 %	14.6 %	15.2 %
Monitoring of traffic data:					
Telephone use (time spent, numbers called)	34.4 %	40.2 %	38.6 %	44.0 %	43.3 %
Computer use (time logged on, keystroke counts etc.)	16.1 %	15.9 %	15.2 %	19.4 %	18.9 %
Video surveillance for security purposes	33.7 %	32.7 %	32.8 %	35.3 %	37.7 %
Total, all forms of electronic monitoring and/or surveillance	63.4 %	67.1 %	67.3 %		
Including Internet Monitoring				78.4 %	82.2 %

Excluding Internet Monitoring, as in years previous to 2000				73.4 %	77.1 %

Source: American Management Association 2001

The data indicate that the amount of electronic monitoring and work surveillance has been increasing for all kinds of communication during recent years, most strikingly for e-mail and internet use. Vorvoreanu and Botan thus noted an "explosion of electronic monitoring and surveillance in the American workplace" (Vorvoreanu/Botan 2000: 3). With more than two thirds of all employers monitoring internet use, one third employee e-mails and more than forty percent reviewing telephone traffic data, electronic performance monitoring and work surveillance can hardly be classified as marginal, but rather as increasingly common.

This impression is reinforced by data from a Texan survey of 98 managers (see Houston/Barnes/Keene 1999), of which two thirds reported that their companies engaged in some type of electronic monitoring. In 18 percent of these companies, employees were not informed about when and how they were monitored. According to a study released by the Denver-based Privacy Foundation, 14 million employees, or just over one-third of the online workforce in the U.S., have their Internet or e-mail use monitored by their employers. Worldwide, the number of employees under such surveillance is estimated about 27 million. Within the past few years, employee monitoring, as measured by the sales of surveillance software, has increased at least twice as fast as the number of U.S. employees with Internet access, according to the study. In an annual survey done in Hongkong (see www.pco.org.hk/english/publications/newsletter_2000aug.html), 64% of the respondent organisations had installed at least one type of surveillance facilities in the workplace, which included closed circuit TV (48%) and devices for monitoring employees' computer use (27%), web-browsing (23%), phone (22%) and e-mail (21%). Only 18% of these organisations had formulated a written policy on such activities. 35% of respondents did not even know whether such a policy existed.

B.3.4 Reasons for and effects of Electronic Monitoring

We will now turn from a descriptive to a more causal kind of evidence: Knowing – or, for Europe, at least assuming – that computer-based techniques of performance monitoring and work surveillance are becoming increasingly common among employers, two questions appear relevant: (1) What *reasons* employers give for employing certain ways of monitoring, and (2) what is yet known about the *effects* electronic performance monitoring and work surveillance have on employee performance and work satisfaction.

Employers' reasons to monitor

In a paper on work surveillance in the context of teleworking in Great Britain, Ben Fairweather mentions three reasons for electronic monitoring as given by employers (Fairweather 1999). First, the fear that the company's communication facilities may be *misused* by employees for illegal activities, e.g. disclosing secretive company information, accessing websites that contain illegal content, or sending offensive e-mails. In the United States, this fear is reinforced by precedent jurisdiction cases implying a high degree of companies' liability for the web-related behaviour of their employees. The corresponding data in the AMA US manager survey already mentioned above reflect this, as "legal liability" was most often mentioned as rationale behind monitoring (68.3 %). The closely related reasons "security concerns" and "legal compliance" obtained the second- and third-highest score (60 % and 50.1 %). Misuse of communication facilities can of course also be related to *productivity*: It is feared that people would be seduced to excessively use the phone, the computer in general, or especially the internet for pursuing their private interests on company resources and company time if they were not monitored. Consequently, 45.5 percent of the managers in the AMA survey mentioned "productivity measurement" as a reason for their electronic employee monitoring.

The second reason for electronic monitoring Fairweather mentions is *quality control*: Communication with customers is an important part of many jobs, especially in sales-connected departments and call centers. Therefore, many employers claim a necessity to monitor their employees' communication in order to secure the quality of their services. In the AMA survey, 45.3 percent gave "performance review" as a reason of their monitoring activity.

Thirdly, Fairweather points out that many employers also claim a right to monitor their employees by whatever means and for whatever reason simply because they *own the companies' communication facilities*. This claim has been acknowlegded several times by the US jurisdiction. In the EU countries, it seems to be more common to grant employers the right to limit or completely preclude private communication through company facilities while at the same time forbidding them to monitor its contents as this would affect the employee's personality protection (see chapter B.3.2 above).

Case Study: Content monitoring without employee notification at an American retail brokerage firm

At the focal company, employees' e-mails were stored for potential review without any notice given to them. At the same time, the employees were encouraged to use mailing as a means of informally communicating with their colleagues. After an insider trading scandal, it was decided to screen all employees' mails routinely and based on acci-

dental sampling, again without their knowledge or consent. It was detected that one female employee had frequently exchanged gossipy mails with a colleague, a finding that was strongly critisised in her performance review and had consequences for her salary increment. The employee was shocked by this, having believed that her privacy would be protected, which she communicated to her supervisor. He discussed a change of e-mail policy with the management, but the option to inform employees about their mails being monitored was estimated to inhibit their use of e-mail as a means of informal communication, which in turn would decrease the productivity gains attributed to this use.

Source: Spinello 1997: 61

An additional reason neither mentioned by Fairweather nor asked for in the AMA survey, but mentioned in an expert interview with an official of Austria's Union of Salaried Employees (GPA) is that in the case of e-mails, access to an employee's business-related mail traffic might be essential for taking over or continuing his tasks during illnesses or other absences. The solution suggested by the trade union for granting access to business mails but not to private ones will be reviewed below.

Another argument for Electronic Performance Monitoring could be that computers exceed human supervisors in fairness, as they record employee achievement with unrivaled objectivity, thus enabling fair personnel evaluation and performance appraisal.

Effects of Electronic Monitoring

Since the late eighties, several studies have been trying to assess the effects of electronic performance monitoring on employees work performance, work satisfaction and health condition. Most of them were conducted in the United States. Still, the amount of research does not correspond to the amount of electronic monitoring usage, or, as Mihaela Vorvoreanu and Carl Botan have put it, "the paradox of electronic surveillance is that it is much used and little understood" (Vorvoreanu/Botan 2000, 3). The evidence yielded so far hardly allows simple overall conclusions, but is rather mixed, as we will now shortly illustrate.

The most unequivocal picture can be reported regarding the relation of electronic monitoring and stress: Several sources indicate that electronic monitoring increases *stress at work* and thus diminishes *employee satisfaction*. For example, Aiello and Kolb 1995 conducted an experiment consisting of two groups that had to perform data entry tasks with one group being monitored and the other not. Afterwards, both groups reported their perceived stress. The members of the non-monitored group had been significantly less stressed than those of the monitored group. Accordingly, Botan 1996, Brown 1996, Kidwell and Bennet 1994, Mishra and Crampton, and Chalykoff and Kochan 1989 have found a negative impact of electronic monitoring on employees' job satisfaction, which even resulted in increased absenteeism and job turnover, and "psy-

chological illnesses such as anxiety, depression and nervous breakdown" (Brown 1996, 1242). Chalykoff and Kochan as well as Kidwell and Bennett mark however that the effect's size largely depends on the social circumstances under which monitoring procedures are introduced, resulting in differing employee perceptions of "procedural fairness" (Kidwell/Bennett 1994, 207).

Regarding effect differences between the monitoring categories we introduced above in connection with employee satisfaction, Stanton and Julian 2002 report interesting evidence from an experiment on clerical task performance conducted with psychology students: the group that was told to be monitored primarily on quantitative terms (equivalent to our "quantity" and "traffic data" categories) expressed significantly less work-related satisfaction than the group told to be monitored in a qualitative way (equivalent to our "content monitoring" category).

Case Study: Phone-call monitoring at a travel agency
A monitoring system was installed that recorded whether employees' phone calls with customers lasted beyond the standard length defined by management in order to reduce overall calling costs. The system included potential listening-in on calls, and also recorded employees' absences from their workplace. Employees' reaction to the system was very negative, and 75 percent signed a petition against it. The company reacted with stressing the system's significance for rising productivity and the employees' obligation to adapt to it.
Source: Spinello 1997

It is of course of particular interest how electronic monitoring and work surveillance affects *work performance*. In this regard, the studies conducted up to now display a particularly inconsistent picture: Evidence suggesting a negative impact of electronic monitoring on job performance (Ottensmeyer and Heroux 1991) faces evidence suggesting a positive one (Aiello/Kolb 1995) as well as evidence revealing no significant effect of monitoring at all (Griffith 1993). Of particular interest are the studies of Aiello and Kolb 1995 and Aiello and Svec 1993, as both are characterised by mixed outcomes in themselves: The already mentioned 1995 study based on the data entry experiment shows a positive effect of monitoring on subjects judged to have high keying skills, while subjects with low keying skills that were monitored performed less well than those that were not. The 1993 study shows an equivalent difference between simple and difficult tasks: While electronic monitoring had a positive impact on the performance of the simple tasks, its impact on the difficult ones was negative.

Concerning the comparison between different monitoring categories provided by Stanton and Julian 2002, participants tended to emphasise the aspect of their work that they were told was monitored: Those that were told to be quantitatively monitored

performed better on quantitative terms, while those qualitatively concentrated more on quality. If they were not told what aspect of monitoring was more important, they also tended to focus on the quantitative aspect.

Apart from these findings, it can of course also be assumed that stress, impaired health, and reduced work satisfaction that were above identified as being reinforced through electronic monitoring, also play a role in diminishing individual productivity.

B.3.5 Ethical discussion

The topic of electronic performance monitoring and work surveillance has not only been empirically explored, but also and quite frequently been discussed from an ethical perspective. The discussion of electronic monitoring possibilities has thus often been linked to the concept of an individual right to privacy, as stated in Article 12 of the Universal Declaration of Human Rights, saying that "no one shall be subjected to arbitrary interference with his privacy [...]" (United Nations 1948; Rotenberg 2000). This leads to the conclusion that employers' interests must be "properly balanced" with employees' civil liberties, principles of data protection, and fundamental rights.

What such a proper balance should look like has been sketched in slightly differing ways in different legal contexts: In the United States, the main intention of employee rights' advocates and pressure groups like the American Civil Liberties Union (www.aclu.org) seems to be to establish an employee's right on being notified about how and when he is being monitored and on being allowed to access the data collected about him. In the European Union countries, where this is already part of the legislation in force, social actors like pressure groups or trade unions tend to demand a restriction of electronic monitoring to the collection of quantity-related and traffic data, excluding content evaluation except in special cases.

For telephone conversation, this is already part of some national legislations, e.g. the Austian and German one. Accordingly, the Austrian Union of Salaried Employees (GPA) suggests for the case of e-mails to allow every employee a reasonable amount of private e-mail traffic from his company account and to establish different mail-folders in the employee's e-mail account for job-related and private mails. This allows colleagues and supervisors to access job-related mails if necessary for reasons of employee absence or supervision, while securing the privacy of his private mails.

Case Study: Performance monitoring at a UK financial services company
The company department responsible for collecting arrears pertaining to customer's personal loans was monitored according to quantities including the number of accounts

worked on by an employee, the amount of money promised to be collected and actually collected, the number of broken payment promises, and the amount of talking and typing time per case. The electronic monitoring results were used at the quarterly performance appraisals, however not as the primary base of judgement, but embedded into a broader competency-based perspective. The employees reported the possibility to question any statistic collected about them if they felt inclined to do so. The monitoring was strictly outcome-oriented, which was positively valued by the employees. All employees were informed about what kinds of monitoring took place, but not all were aware that the data collected about their performance were accessible for them. Accompanying research found that despite the transparent and non-overemphasizing way of handling electronic monitoring, its impact on individual employee evaluation was substantially influenced by an employee's social position in the team.

Source: Ball 2001

Another demand, included for example in a code of practice on online rights recently launched by the Union Network International (UNI), consists in the involvement of a trade union or labour council representative or another employee-selected representative in the act of accessing monitoring or surveillance records.

An important empirical aspect of e-work- and e-collaboration that is also relevant for ethical considerations is that remote co-workers are to a much higher degree restricted to e-mail and online groupware in their communication, which makes them much more susceptible to electronic monitoring than other employees. This was also stressed by a Siemens labour council member we interviewed who co-operates with Indian software developers.

B.3.6 Some formulations from existing codes of conduct

We cite excerpts of two anonymised internal agreements of Austrian companies related to Electronic Monitoring, and the already mentioned code on employee online rights launched by the Union Network International (UNI):

UNI-Code
- Employees are permitted to use enterprise electronic facilities for non-business purposes, both internally and externally, provided that this is not detrimental to their job responsibilities.
- Communication will be subject to surveillance and monitoring only if this is permitted by collective agreement, if the employer is legally obliged to do so, or if the employer has reasonable reason to believe that an employee has committed a criminal offence or serious disciplinary offence.

Internal Agreement 1

- The proxyserver only documents refused connections. No protocols are made concerning company-intern communication and external internet traffic that is not indicated by the virus protection software.
- Internet records are deleted after three months. The receiver of a recorded e-mail has to be informed.
- Employees are trained in the secure and economic handling of e-mails and the intranet.
- The labour council is entitled to check the compliance with the Internal Agreement at any time and without concrete complaints.

Internal Agreement 2

- Internet records consist of user, adress, time. The content of messages is not documented. The records are only made for technical reasons, to analyse and correct mistakes and to combat threats to security. The records are only accessible for the technical personnel. They are deleted after one month and never printed out.

B.4   Protection of Intellectual Property Rights in an age of computers

Computer technology enables the development of many new software-based products that have by now gained importance in almost every branch of business. It furthermore allows the conversion of long-established kinds of media like texts, pictures, and films into software files. An important aspect of this development is that software files of all kinds can be copied easily and without any loss of product quality (Samuelson/Davis 2000). Moreover, the World Wide Web provides easy ways of exchanging files and communicating about them, whether in the context of the new forms of employment we are adressing here, or for marketing purposes.

These conditions imply a challenge to the claiming of Intellectual Property Rights (IPRs) on work outcomes in two ways: First, it becomes an important task for companies to prevent hackers from software piracy and online industrial espionage whenever any work outcomes are exchanged online in the form of software files. And secondly, it has in many countries not yet been unequivocally decided how computer-implemented inventions should be classified in relation to IPR: conflicting standpoints range from the claim that software should be generally patentable to the opinion that it should be completely free. The legal classification of computer-implemented inventions is consequential for the extent to which IPR may be claimed on them and their sharing between developers and their companies.

Since exchanging files online can be conceived as an essential characteristic – or even a necessary pre-condition – of e-work and e-collaboration, and since a substantial amount of e-workers is involved in the development of computer-implemented inventions, we will now briefly line out possibilities of dealing with both IPR-related challenges in the context of e-work and e-collaboration, including a review of relevant legislation.

B.4.1 Data security and IPR sharing in the context of e-work

For the context of e-work and e-collaboration, the two IPR-related challenges described in the introduction can be re-formulated in the following way: (1) How can Intellectual Property Rights on company assets be adequately secured in the context of electronic data transmission while safeguarding their right to access relevant company information? And (2): How can the Intellectual Property Rights on computer-implemented inventions be properly shared between developers and the companies they work for?

Data encryption

The Word Wide Web unfortunately not only offers new ways of easy data exchange – through mail attachments, newsgroups and other groupware, – enabling new ways of remote co-operation. These very possibilities have also turned out to bear considerable risk of information on work-outcomes – or even the outcomes themselves – getting in the wrong hands through hacking and related practices labeled as cybercrime. A new dimension has thus been added to industrial espionage. What can be done to avoid or tackle this risk?

An obvious option of risk-avoidance consists in simply not sending files of any importance through virtual channels. While offering the relatively highest degree of security, this option can hardly be considered feasible for e-work and e-collaboration which both have to rely on a certain amount of data exchange through information technology due to spatial remoteness. Of course, the amount of data virtually shared and exchanged can really be reduced to an absolute minimum, implying that what is not absolutely necessary – including all company information not strictly project- or department-related – is being kept from circulation through the World Wide Web. Although there is no data available on the diffusion of this kind of policy, there is evidence from expert and employee interviews suggesting that it does take place.

It is however likely to present a way of discriminating against e-workers and e-collaborators, as they are thus being excluded from information that employees working centrally can easily access through the company intranet or non-digital storage devices. To ensure that e-workers can equally participate in the company and its operations, it appears therefore desirable to allow for sufficient information sharing through securing the transmission channels as far as possible. This can be done in three technically different ways.

First, data packages sent per e-mail can be encrypted. This is enabled by several software packages employing differing encryption algorithms. There are two major types of encryption: *Symmetric key cryptography* uses the same key for encrypting and decrypting a message. Here the sender and the receiver agree on a key before they start secure communication. *Asymmetric key cryptography* (also called public key cryptography) is designed so that the key used for encryption is different from key used for decryption and the decryption key cannot be calculated from the encryption key. The encryption key is made public (public key) so that anyone on the network can encrypt the message but only a specific person with corresponding decryption key (private key) can decrypt the message.

Symmetric keys are used for encrypting large amounts of data as they work faster and are not susceptible to known cipher text attack. Asymmetric keys are used for key dis-

tribution, digital signature and message authentication. Typically, symmetric keys are shorter in size than asymmetric keys and easier to manage. They however require high levels of secrecy and are susceptible to leaks if many users share the same symmetric key. Therefore, for long messages among small number of users, symmetric key cryptography and for short messages among large number of users, asymmetric key cryptography seems the proper choice (see e.g. http://developer.iplanet.com/docs/manuals/security/pkin 29-04-2002)

Besides encrypting data, there are also two options of making the connection used for data transmission more secure. The cheaper and more common one is provided by so-called Virtual Private Networks (VPNs). These provide a private channel through public networks by assigning private ID numbers to the computers involved in sending and receiving, making it impossible to track down a data package's sender, receiver and content, except for the receiving computer. A VPN thus runs over the public infra-structure of the net, but uses an encrypted tunnel to keep the information away from potential hackers. VPNs are thus well suited to connect remote entities of organisa-tions or e-collaborators (see e.g. www.intranetjournal.com/foundation/vpn-1.shtml 11-06-2002).

An even more secure, but also more expensive solution consists in dedicated WAN lines, also called Dedicated Secure Networks (DSNs), which consist of exclusive lines between sender and receiver that a company leases. This results in a kind of extended company intranet. As they are rather expensive, such connections are standard only for banks and military operations, although also a few other companies have imple-mented DSNs for their international links (see e.g. www.networkcomputing.com/905/905colmoskowitz.html 12-06.2002).

Sharing of IPRs and restraint-of-trade agreements
Many jobs in e-work- and e-collaboration relations consist of developing computer-implemented inventions. This raises two questions in relation to IPR: First, to what ex-tent do they have a share in the returns their inventions yield? And secondly, in how far are they allowed to use the knowledge pertaining to their developments for other em-ployers?

The most employer-oriented answer to these questions would look as follows: The right to exploitation of computer-implemented inventions is completely left to the com-pany. Work-related knowhow and knowledge is kept from being used for other compa-nies after the end of an employment relationship by means of a "restraint-of-trade" paragraph in the employment contract which precludes the employee from taking up employment in the same branch for a certain amount of time. On the other hand, a strictly employee-oriented standpoint would imply that employees are free to use not

only their work-related knowledge and knowhow for other employers, but even to exploit their work's outcomes, which possibly includes the copying of inventions for a former employer's competitor.

Case Study: An employee between two software development firms
A female employee developed an online paying devise called U-PAY, which took about two years. She did not get adequate recognition, her boss took most of the credit himself. She therefore started looking for a new job and signed up with the major competitor of her employer, where she was provided with the task to develop a paying system similar to U-PAY, but in a much shorter time. To achieve this, Ellen had to copy the „U-PAY design specs and the PL/1 source code" and take it to her new employer. „Occasionally, she felt some guilt over this decision, but her guilt was assuaged by her firm conviction that this was her work and that she had as much right to it as Apollo."
Source: Spinello 1997

How the two questions are answered empirically in different national contexts depends, together with business traditions, to a substantial degree on the relevant legislation and jurisdiction, in the case of exploitation rights also on the classification of computer-implemented inventions as patentable or not, as already mentioned in the introduction. Examples for such legislation will be presented in the next section.

B.4.2 Relevant legislation

Three legislation topics appear relevant in the context of virtual IPR protection: Encryption-related regulations, regulations regarding international data transfer and legislation relevant for the sharing of IPRs in the context of employment.

Encryption
Most countries – including most Non-Western ones – have no legal controls on the use of cryptography and related means of data security like Virtual Private Networks. In the vast majority of countries, cryptography may be freely used, manufactured, and sold without restriction. There is a tendency towards international relaxation of regulations relating to encryption products. Only in a small number of countries, strong domestic controls on the use of cryptography exist. These are mostly countries where human rights command little respect.

The United States play an important role in advocating the introduction of encryption controls around the world. This may be partly explained by the dominant role that national intelligence and federal law enforcement agencies hold in the development of encryption policy. There are however yet no domestic use or import controls on cryptography in the United States. The Federal Bureau of Investigation has several times

proposed legislation that would require all manufacturers of encryption products and network services to include key recovery or escrow mechanisms to enable immediate decryption of communication or information encrypted by such products or services on the public network. No new technology with encryption mechanisms would thus be able to be developed or sold without the prior approval of the related chief law enforcement official. The FBI, assisted by the NSA, Justice Department and Defense Department, has actively lobbied domestic and international organisations for encryption access programs (see Electronic Privacy Information Center Washington DC 1999).

The European Union has so far rejected to impose restrictions on encryption. The European Commission also seeks to reduce intra-Union controls on encryption products. In October 1997, the European Commission's Directorate-General XIII, which is responsible for Telecommunications, Information Market and Exploitation of Research, issued a report that adressed the United States' policy of encouraging key escrow and recovery schemes. It stated that restricting the use of encryption could possibly prevent law-abiding companies and citizens from protecting themselves against criminal attacks, and that no key escrow system could totally prevent criminals from using these technologies.

International Data Transfer

The EU Data Protection Directive already reviewed in chapter B.3 includes the principle that personal data may only be transferred to countries outside the EU that guarantee an "adequate" level of protection. Analyses of data protection laws and dialogues with the EU's more important trading partners have been performed to decide which countries can be regarded as offering this adequate protection. With the United States, a negotiation process has been initiated. Consequently, on 4th November 1998, the U.S. Department of Commerce issued a set of privacy principles in order to establish a permanent framework for the transfer of personal data between the US and the EU. Following that initiative, the year 1999 was dedicated to a series of extensive discussions on a bilateral basis between the American government and the European Commission. Recent legislation concerning privacy and data protection in developing countries that could be due to the EU's data protection directive were already reviewed in Chapter B.3. The United States themselves do not have a comparable regulation concerning the transfer of data from the U.S. into other countries (see for instance http://europa.eu.int/comm/internal_market/en/dataprot/news/harbor2.htm 30-04-2002).

IPR sharing and patent legislation

Two legal questions appear relevant in the context of Intellectual Property rights on computer-implemented inventions: First, whether computer-implemented inventions are classified as patentable, and secondly, what follows from patent legislation or other

relevant regulations for the rights on computer-implemented inventions in the context of employment relationships.

On the global scale, there is now a trend in favor of adopting patent protection for computer-implemented inventions. This trend has accelerated following the adoption of the TRIPs („Trade-Related Aspects of Intellectual Property") portion of the GATT, which mandates member countries to provide patent protection for inventions in all fields of technology. The consequences of varying patent-related classifications that preceded this development can be illustrated by the example of the German jurisdiction regarding computer software (see Däubler 2001): In 1978, a High Court decision declared software as non-patentable, but to fall instead under the German Copyright. This implied a relatively weak protection compared to patented products, as the Copyright – mainly directed towards works of art – only grants protection to a thought's representation, not the thought itself. Moreover, it can only be granted to a person, not to an organisation. Even the Copyright was applied quite restrictively to computer-implemented inventions, until the EU's Directive on the protection of computer programs was issued in 1991. Its implementation led to a less restrictive application of the Copyright to software.

In the European Union, the current legal situation regarding patent protection of computer-implemented inventions is ambiguous. Although the statutory provisions setting out the conditions for granting such patents are similar, their application in the case law and the administrative practices of Member States is divergent. Thus, a computer implemented invention may be protected in one Member State but not in another one, which has direct and negative effects on the proper functioning of the internal market. Meanwhile, the EU Commission has proposed a Directive on the Patentability of computer-implemented inventions in February 2002 (see European commission 2002b). The reasoning behind this iniative is that while computer programs „as such" are excluded from patentability by Member States' patent laws and the European Patent Convention (EPC), in fact many patents for computer-implemented inventions have been granted by the European Patent Office (EPO) and by national patent offices. The main conditions the proposals states for a computer-implemented invention to become patentable are that it belongs to a "field of technology", is „susceptible of industrial application, is new, and involves an inventive step." The proposed Directive does not prescribe how patented computer-implemented inventions are to be handled in the context of employment. This will therefore remain in the compentency of the national legislations, implying differences and national specialities that cannot be extensively reviewed in this overview. We only return briefly to the example of Germany: Inventions that are subject to the Patent Law have to be reported by the employee. The employer can then make a claim on it for four months afterwards. If he does make it, he is obliged to

pay a compensation to the inventor which is reported to be „not spectacularly high" (see Däubler 2001).

In the United States, a computer-implemented invention does not have to include a technological contribution. The mere fact that the invention uses a computer or software makes it a part of the technological arts if it also provides a "useful, concrete and tangible result". That the U.S. does not require the invention to provide a technical contribution means that the restrictions on patenting of business methods (apart from the requirements of novelty and inventive step) are negligible. Recent U.S. jurisdiction has shown a tendency to interpret intellectual assets necessary for software development – e.g., mathematical formulas – which were claimed to be corporate trade secrets as public knowlegde. A prominent example is the case Northwest v. American Airlines, in which American claimed that secret information on its pricing and yield management tools were illegally used by former American software developers for Northwest, a claim that was turned down making use of the public-knowledge-argument.

The situation in Japan is comparable to the European one: a computer program that simply performs a mathematical calculation is not patentable. However, if the software is used as a means for materialising a law of nature and is linked to appropriate hardware elements, it may be patentable. E.g., software claimed as part of a microcomputer embedded in a fishing rod to control the operation of the reel can be patented.

In Non-Western countries, the TRIPS agreement is expected to have also an impact on the protection of computer-implemented inventions. In 1999 however, software piracy rates in many developing countries and transition economies in Eastern Europe still ranged from 72-98% of the total software market. Combating piracy therefore calls for strong protection based on the TRIPS agreement's articles 41 – 61 (see http://iprcommission.com/textonly/maymeet4.html – 20-05-2002). Since developing countries have been given up to 11 years to amend their laws, if necessary, to meet the TRIPS requirements, this desirable development might however still take some time (see http://www.softwareprotection.com/patent.html).

Restraint-of-trade agreements

Restraint-of-trade agreements within employment contracts are principally possible in all EU countries. There are differences regarding the maximum amount of time for which a restraint may be agreed, ranging from six months (Belgium) to two years (Germany – see www.salesprofi.de/bp/vertrieb-verkauf/daten/recht0501.htm 18-05-2002). Besides, some countries grant employees – at least in some professions – the right to receive a compensatory payment during the restraint period. If a restraint-of-

trade agreement is legally valid depends for the single case largely on the national jurisdiction (see the case study below).

Case Study: Restraint-of-trade agreements at a German software company
The German company U has established itself on the software development market. The main company activities are carried out by a small group of employees. These employees know all company secrets, they are familiar with the customer relationships, the calculation of prices and U's plans for future products. To avoid that this knowledge gets into the hands of U's competitors, the company's employment contracts contains a restraint-of-trade regulation implying that the employees are not allowed to take up work for one of U's competitors and/or establish business contracts to one of U's customers for three years after the end of employment for U. When the employee M leaves the company and starts working for U's competitor, he obviously makes use of his U-related knowledge. U claims he is not allowed to due to the restraint-of-trade regulation, to which however K affirms not to be bound, as it was not legally valid.
Source: www.shahnam.de/tipps/konkurrenz.html

In the United States, courts have generally upheld two-year time limits for restraints of trade – there also called restrictive covenant – because this gives the employer sufficient time to replace a departing employee and protect the company from unfair competition during that time. The courts will also consider whether the geographic scope of a restrictive covenant is reasonable. In certain instances, a court will look to the public interest to decide whether to enforce a restrictive covenant (see e.g. www.aafp.org/fpm/20001100/52eval.html 05-05-2002).

B.4.3 Some formulations from existing codes of conduct

Novartis Code of Conduct
Contracts relating to the use of intellectual property rights (patents, plant-variety rights, trademarks, designs, copyright, know-how and trade secrets) are often subject to special rules and may therefore be critical in terms of antitrust. They need particular attention by legal counsel.

Alcatel statement on Business Practices
Alcatel recognizes Intellectual Property Rights as a central shareholder value in any high technology company. Alcatel takes every appropriate action to preserve and enhance its Intellectual Property and respects the Intellectual Property rights of others.

B.5   Health implications of Display Screen Equipment

By definition, both e-work and e-collaboration consist to a differing degree, but always to a substantial amount, of computer-based work: Both the communication with co-workers and supervisors and the sharing of work-relevant information necessarily rely on computer-based technologies and tools in these new work arrangements. Moreover, many e-workers also deal with computers in the subject-related parts of their work, whether they develop software or use computers as a medium of generating texts, processing data or communicating with customers in call centers. This implies a substantial amount of daily exposure to display screens, making them particularly susceptible to related health risks and resulting productivity declines.

Research responding to this has been trying to more precisely assess the kinds of risk, their amount and the factors influencing them. As a result, programmes and guidelines for proper display screen equipment, its use and workplace environments have been developed. On the following pages, we review these materials and sketch possible implications for the feasible organisation of e-work and e-collaboration.

An important aspect of work with display screen equipment of potential relevance for health and well-being consists in the quality of the software used: How suitable is it for the tasks to be performed? Can it be adjusted to a user's needs and preferences, or does it prescribe how things are to get done? Questions like these are dealt with by a relatively new branch of human science labeled "Usability research". Corresponding results will also be discussed below.

B.5.1 Health problems connected to work with DSE by kind and frequency

Several studies from different countries have produced evidence for the occurence of health-related problems in connection with display-screen-based work. But what kinds of problems occur most frequently? Table B.5.1 (next page) shows the results of a German survey consisting of 208 respondents working at display screen terminals (Ertel et al. 1997, Blaha/Ambros 2001).

The results suggest that the three most important problem groups consist of:
* problems related to the movement apparatus – prominently including Repetitive Strain Injuries (RCIs) such as capal tunnel syndrome, tendinitis, buritis, myofascial pain syndrome etc., and Cumulative Traume Disease (CDT),
* eyesight-related problems – for them, the label "Computer Vision Syndrom" (CVS), has been introduced, and

- symptoms related to mental stress which affect individual well-being like headache, irritability and fatigue.

The relevance of these three categories is confirmed by other studies, e.g. a survey by the German Federal Office for work protection and work medicine, in which 49,2 percent of the respondents reported pain in the neck/shoulder area, 35,4 percent stress-related symptoms, and 29,8 percent eyesight-related problems. According to an OSHA study for the whole European Union, an average of 30 %, meaning 44 million workers, suffer from backache, and 17% of the workers suffer from muscular pains in arms or legs (see http://europe.osha.eu.int). A study by the University of Carolina reports that over 70 percent of U.S. computer users suffer from Computer Vision Syndrome (see www.healthnet-services.de), while a study conducted by American National Institute of Occupational Safety and Health indicates that this number might even be as high as 88 percent (see ILO 2001,162).

Table B.5.1. Health impairments in percent of respondents (n = 208)

Pain in shoulders/neck	62,7 %
Lower back problems	53,0 %
Headache	45,3 %
Eyesight-related problems	43,9 %
Tiredness, fatigue, weariness	35,6 %
Exhaustion	34,5 %
Reduction of visual acuity	33,6 %
Reduction of concentration	30,8 %
Agitation, strain	26,8 %
Lack of impetus	26,8 %
Trouble related to hands, arms, legs	24,2 %
Sleeplessness	22,5 %
Irritability	21,9 %
Stomache-ache	16,2 %
Dejection	13,7 %
Sensitivity to noise	12,5 %
Pounding heart	11,4 %
Redness of skin	11,4 %
Feeling of dizziness	9,7 %
Difficulty in breathing	8,5 %
Lack of appetite	7,7 %
Pain in the chest	6.0 %
Trembling of hands	2,6 %

Source: Blaha/Ambros 2001

Less well-established connections with work at display screen equipment have been affirmed for *skin complaints* (rosacea, acne, dermatitis, pustolosis, urticaria, ostitis etc.), and *reproductive hazards* (miscarriages, congenital deformities and fertility problems) – both were attributed to the electromagnetic radiation of display screens, but without yielding convincing empirical evidence (see e.g. WHO 1998).

Besides presenting descriptive evidence concerning the frequency of certain kinds of health impairment, ergonomic and usability-related studies sought to explore the link between kinds of impairment and sources of strain related to work with display screen equipment more closely (see e.g. Blaha/Ambros 2001, Ankrum 1997, Aaras/Fosterwold et al. 1997, Jaschinski/Heuer/Kylian 1998, Vink/Kompier 1997, Mon-Williams et al. 1998).

Thus, movement apparatus problems have been causally attributed to
* sitting position,
* desk height, keyboard and display screen position,
* repetitive movements enforced by software.

Eyesight-related problems were found to be connected with
* the amount of continuous exposure to display screens,
* the quality of the display screen in terms of size, resolution and reflection,
* environmental factors like lighting and viewpoints around the workplace.

Stress symptoms were attributed to
* the amount and speed of information procession enabled through computers and internet,
* task organisation and constraints set by software packages concerning the individual way of performing tasks,
* the amount of continuous exposure to display screens.

B.5.2 Ergonomic and usability-related principles and recommandations

The causal factors just mentioned already provide hints to what ergonomic and usability-related principles have been derived from the evidence just reviewed. Such principles can be found in numerous studies, guidelines, checklists, and recommendations and are even the subject of an ISO-standard, ISO 9241 "Ergonomic requirements for office work with visual display terminals (VDTs)". While it is beyond the scope of this short overview to extensively review and discuss this material, the following table lists its most common contents and indicates the relevance of the listed measures for the three health problem categories we identified above:

Table B.5.2 Relevance of variables for problem categories indicated by Xs

Ergonomically relevant variables	Movement Apparatus Problems	Eyesight Problems	Stress Symptoms
Lighting of the workplace		XXX	
Reflection/glare of display screen and other material at the workplace		XXX	
Requirements of ergonomic working position – positioning of display screen and keyboard; adjustability of chair and table; wrist rests etc.	XXX		
Quality parameters of the display screen - size, resolution, contrast, reflection		XXX	XX
Organisation of work at display screens – possibility of sufficient breaks, activity changes, etc.	XX	XX	XXX
Performance of exercises	XXX	XXX	XXX
Adjustability of software to users	XX		XXX

Sources: Blaha/Ambros 2001, Ankrum 1997, www.ergoweb.com, www.fulwood.com/fulwood/downloads/monitorsmatter2000.pdf, www.office-ergo.com, www.ergoonline.de, www.flinders.edu.au/ohsw/Ergobook/EB-Office_layout.htmlb, www.ergoport.com.au, www.afscme1185.org/ergonomics-24.html, etc.

In general, the proposed principles can be divided into *behaviour-related* ones that aim at the individual employee and the way he organises his work (e.g., exercises and rest breaks) on the one hand, and *equipment-oriented* ones aimed at the technical shaping of the workplace on the other hand.

Case Study: User-centered computer-human interface technology at Deep Space Network (DSN)

The company's old software system to monitor network performance and identify network problems was failing to meet the users' needs, required modernisation and needed redesign to allow for growth. To meet these requirements, a user-centered approach was employed. At the beginning, usability criteria were formulated by the development team; the users, sceptical at the beginning, had the opportunity to test and comment on prototypes of the new software, which in turn were modified. This user-centered approach not only led to a superior system, but also provided a high level of user satisfaction and thus has become a model for other development efforts.

Source: Ellman/Carlton 1993

Software Tools

Several attempts have been made to convert ergonomic principles into software tools that faciliate their practical implementation into individual working routines. Most com-

mon are ergonomic *self-assessment tools*, which mostly consist of information samples, questionnaires and checklists including the bullet points listed above. They also contain advise on how to change or counteract behaviour or settings that were assessed as risky. *Work pacing software* coaches users into more healthful work patterns by providing a sequence of alerts indicating the need for a microbreak based upon the intensity and duration of keyboard and mouse activity. In addition, the software provides periodic 'stretch-break' alerts based on overall computer usage patterns. Furthermore, it has been recently explored what possibilities regular *e-mail programs* offer to reduce the risk of information-related stress due to an overflowing mailbox (www.baua.de/news/pm38_02.html).

B.5.3 Relevant legislation

To what extent have ergonomic and usability-related principles been yet included in national and transnational legislation?

EU

The European Union's Council has issued a directive regarding workplaces with display screen equipment in 1990 (European Commission 1990). The directive, without going into ergonomic or usability-related details, prescribes minimum requirements regarding safety and health conditions at work places with display screen equipment and formulates procedures to guarantee that violations of these requirements are prevented, or systematically detected and removed (Rauterberg 1996). If an employee "habitually uses display screen equipment as a significant part of his normal work" (Article 2, c), the employer is obliged to perform an analysis of the workplace, particularly regarding the impairment categories we definded above, namely "possible risks to eyesight, physical problems and problems of mental stress" (Article 3, 1). Any risks found are to be remedied by "appropriate measures" (Article 3, 1). Furthermore, employees working with Display Screen Equipment have to be provided with appropriate information, instruction and training in order to enable them to adjust their own behaviour to the minimum requirements on safety and health conditions (Article 6). Employees should also be involved in the design or redesign of display screen equipment workplaces in accordance with the requirements of the directive (Article 3). Concerning the usability of software, the directive states that software must be "suitable for the task", "easy to use and, where appropriate, adaptable to the operator's level of knowledge or experience" (Annex, 3 (a) to (b)).

The ways in which this directive has been implemented within the EU countries will be shortly reviewed below for three selected EU members.

USA

In the United States, there are no federal regulations or guidelines which govern the use of display screen equipment in the private sector. To assess the potential effects of eletromagnetic fields, a federal research program was intiated in 1992.

On the state and local level approximately 50 bills were introduced in 33 states to regulate display screen usage relating to private industry. Five states have passed legislation either to establish committees to study display screen related issues, or to advise employers to provide training when installing display screen equipment. Columbia and New Mexico have issued executive orders which establish ergonomic standards on display screens used by public employees. At least six states have issued ergonomic-related guidelines for state procurement of display screen equipment and computer workstations.[10]

To date the only locally successful legislation in the U.S. has been the Suffolk County, New York law of 1988 which regulates the use of display screen equipment in the workplace. It applies to companies with more than 20 display screens, and requires a 15 minute break every three hours for employees who use the terminals more than 26 hours per week. In addition, employers must pay 80% of the cost of annual eye exams and the cost of eyeglasses. Since 1990, adjustable desks, five-legged chairs, and non-glare screens are compulsory for all new equipment.

The American National Standards Institute (ANSI) has issued a standard (ANSI/HFS 100-1988) with ergonomic guidelines which include design requirements for visual displays, keyboards, work-stations, and techniques for measuring compliance with the specifications (see www.ansi.org).

Non-Western World

Concerning developing countries, there is no evidence on legislation regarding work with display screen equipment. In general, the process of raising ergonomic awareness seems to have only recently begun in the Non-Western world (see e.g. http://www.iea.cc/events/develop.cfm – 30-04-2002).

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10 See www.psac.com/H&S&E/Health_and_Safety/H&S_Bill_C-12-PSAC_Submission-e.html; www.opc.on.ca/beststart/work-place/wkplcea.html – 19-05-2002;

B.5.4 Diffusion and effect of ergonomic and usability-related standards regarding DSE

Given the potential health impairments brought about through working at display screen equipment and the attempts to counteract them, both legally and through recommendations, checklists, and standards: what evidence is available concerning (1) the extent to which display screen equipments are shaped and evaluated according to principles of ergonomics and usability, and (2), what impact this shaping has where it does take place?

Diffusion of ergonomic principles

To shed light on the diffusion of ergonomic and usability-related principles across the European Union, we will shortly review the situation regarding display screen equipments in three selected EU countries several years after the corresponding EU Directive.

In *Germany*, even in 2001 every third workplace with display screen equipment was reported to have not yet been evaluated according to the EU directive. Of those that were, only 15 percent were found to meet the minimum requirements in force. 29 percent of the complaints were due to suboptimal monitor placement, 27 percent to unergonomic furniture, and 20 percent to work environment factors like climate, acoustics and lighting. All in all, the ratio of unergonomic workplaces with display screen equipment is reported to even have increased during the recent years (www.heise.de/ct/01/23/052 – 04-05-2002).

In *France*, improvements regarding workplaces with display screen equipment following the EU Directive are reported to have been "slow in coming" (Rauterberg 1996). Only a "small number" of companies has taken steps to obtain compliance with the EU Directive and its French implementation, the Decree n° 91-451. Factors mentioned as possibly responsible for this observation include the cost of installing new computers, and the incompatibility between ergonomic principles and architectural restrictions. Improvements are reported regarding the quality of display screens and software, but it is unclear whether this is a direct result of the legislation or merely the advancement of display screen and computer technology.

In the *UK*, the EU Directive has been described as having hardly had any significant impact on the health risks associated with display screen equipment (Rauterberg 1996). There is also a political discussion going on regarding the necessity to implement the EU Directive and the validity of ergonomic principles in general.

For the *United States*, where the shaping of workplaces with display screen equipment remains largely a matter of company-based self-regulation as was already stated in the chapter on legal regulations, no nationwide evidence concerning the degree to which ergonomic principles are applied is available. The same holds true for *Non-Western countries*.

Effects of ergonomics

A positive effect of ergonomic and usability-related shaping of workplaces with display screen equipment on employee well-being and productivity could be established by several studies from different countries.

For example, in a British study from 1997, Henning et al. prompted computer operators at two work sites to take three 30-seconds and one 3-minutes break from computer work each hour in addition to conventional rest breaks. Some operators were asked to perform stretching exercises during the short breaks. Mood state and musculoskeletal discomfort were assessed at each work site over a 2- or 3-week baseline period and a 4- or 6- week treatment period, respectively. Operator productivity measures were obtained from company records. No improvement in productivity or well-being was found at the larger work site. At the smaller work site, productivity, eye, leg and foot comfort all improved when the short breaks included stretching exercises.

Likewise, Hedge and Evans (2001) tested the effects of using ergonomic work pacing software on typing and mousework. The performance of 56 U.S. computer software programmers was passively monitored using the work pacing software for a baseline-period of four weeks, then the whole personnel was monitored four another four weeks. There was a statistically significant 59 percent improvement in work accuracy following the implementation of the software. The total number of keystrokes and mouse use was not affected.

Case Study: Computer Workstations at Petroleum Technology Center

Petroleum Technology Center (PTC) is Marathon Oil Company's technology and field-operations support facility. Tasks performed by employees include usage of computer workstations from half an hour to eight hours per day with an average of four hours per day. The majority of tasks became computerized during the early part of 1993. As a consequence, the workforce was down-sized, thus requiring more work to be accomplished by fewer workers. These two factors were thought to be contributing to an in-creasing number of injuries related to CumulativeTraume Disease (CTD). From 1990 to 1993, the number of injuries increased from 1% to 3% of the total employees. By 1993, 77% of the injury claims and 83% of the total medical costs were CTD related. Ergonomic risks found inlcuded awkward posture and repetitive movements required to perform the computer tasks. Behaviour-related ergonomic intervention consisted of

lectures in ergonomics issues, training ten employees in order to provide in-house ergonomics advisors to coworkers, emphasizing exercise breaks every half-hour for five minutes, and providing educational materials in pamphlets and wall posters. Equipment-related measures included lowering work surfaces, adjusting chairs, purchasing new adjustable chairs, adding/adjusting foot rests and wrist rests, changing the location of computer terminals, purchasing and articulating keyboard trays, wrist rests, mouse rests, foot rests, glare screens, document holders, task lights, and lumbar back supports.

As a result, CTD claims decreased to zero. The feedback by employees was entirely positive. The awareness of computer related ergonomics issues was increased. Cost outcomes for the company were also positive: workers' compensation costs could be reduced by 80 percent.

Source: www.ergoweb.com; Cook/Pinelli 1995

Liaro and Drury (2000) investigated the impact three levels of keyboard heights had on changing working posture (e.g. joint angles and postural shifts), and thus presumably discomfort (e.g. rating of perceived discomfort and body part discomfort), and performance (e.g. typing speed, error rate and error correction rate). The hypothesized posture-comfort-performance interrelationships were partially supported. Keyboard height had effects on working posture adopted. As in previous studies, the rate of postural shift was a good indication of discomfort in a DSE task. Discomfort and postural shift rate had adverse effects on performance (e.g. error rate). However, these effects on error were judged by the authors as not too strong.

Dainoff and Dainoff (1986) compared a DSE workstation designed according to commonly accepted ergonomic guidelines was compared with one that deliberately broke most of the rules. Subjects performed an experimental task involving data entry and editing under realistic conditions. A composite performance measure was used which took into account both speed and errors, and the subjects were paid by results. Performance was 25% higher at the ergonomically designed workstation; and when differences in lighting were eliminated, there was still an 18% performance difference.

Ong (1984) studied data entry staff at a Singapore airline terminal before and after ergonomic changes (including lighting, document holders, footrests, and more rest pauses). Output (measured in keystrokes per hour worked) increased by 25%. The error rate decreased from 1.5% to 0.1%. The output improvement occurred despite spending less time at the terminal.

Case Study: Office Workstations at a U.S. company
Workers at the focal company had to perform regular office work using computers. They reported high levels of physical discomfort associated with their workstations.

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Ergonomic risks included awkward posture required to perform the tasks, and visual discomfort involving glare. Regarding behaviour-oriented ergonomics, a pilot ergonomics program was initiated, each new employee was given an ergonomic information packet including different exercises to relieve stress and proper posture to perform the tasks, and training programs were initiated. These measures were accompanied by equipment-oriented interventions including the provision of new ergonomic chairs with wrist rests, footrests, moving of workstations to minimize glare without shutting out daylight, and the installment of blinds and window coatings to further reduce glare. As a result, workers are more comfortable on their jobs and spend more time at their workstations. High physical discomfort could be reduced by 60 percent. Overall comfort level could be raised from 18 percent before the program to 66 percent after implementing the program. The amount of employees reporting high levels of fatigue could be reduced by 50 percent.

Source: www.ergoweb.com/CTD News, 1995, Consumers Power Intervenes before CTDs Hit, Ergonomics that Work

B.5.5 Some formulations from existing codes of conduct

University of Cambridge/Department of Physics:

- The screen should have well-defined characters of adequate size, a stable image and easily adjustable brightness and contrast.
- The screen should be tilting and swivelling.
- Lighting should be satisfactory, with appropriate contrast between screen and background.
- Heat and noise produced by the equipment should not be excessive so as to cause discomfort or distraction.
- You should take breaks. It is recommended that short frequent breaks are taken, rather than long infrequent breaks. 30 seconds every five minutes is better than a long break each hour.
- When you do take a break, rest your eyes by looking at a distant object. Get up and move your whole body, tense and relax the muscles of your shoulder, neck, and hands.

University of Wales, Aberystwyth

The University shall ensure that all Users are provided with induction training in the use of display screen equipment within the context of health and safety.

Users of display screen equipment who have not previously been trained in the use of new or existing equipment or software, shall be given suitable training in order to carry out their responsibilities. This training will be at the University's expense in each case. Training in use of software approved by Information Services is provided at intervals throughout the year.

B.6 Virtual collaboration and virtual teams

Internet technologies as distance-bridging facilitators are enabling the emergence of e-collaboration, computer-supported co-operative work and virtual project teams. The growth of organisational forms of virtual collaboration arises from the need to make greater use of dispersed resources: as complexity increases, competitive pressures intensify and product development times decrease. Features of ICT that reduce the problem of geographical proximity become competitive necessities if they convey advantages superior to other forms of work and business organisation. Solely "virtual organisations", like, for example, a consulting firm established by a group of partners without a central office, which serves markets for a specific purpose and then disbands, are still a rare occurrence. Virtual collaboration within and between companies, often organised around projects, is, on the other hand, widely accepted. In view of the figures in part A of this report there is empirical evidence that about one third of the entire European workforce is involved in some sort of tele-cooperation over distances. A similar proportion can be estimated for other OECD countries such as the US, Canada, Australia, or Japan. For example, Lurey and Raisinghani (2001: 525) cite a US study estimating 30 million US workers as being members of dispersed teams by the year 2000. Yet the geography of virtual links is not confined to the industrialised world. Competition is forcing companies to move low-value-added phases of production to low-wage countries, not in random fashion but to where production skills are already concentrated. Hence, virtual teamwork of temporary duration, carried out by electronically connected co-workers irrespective of location, increases the ability of companies (and networks of companies) to gain access to specialised knowledge. Another feature of virtual teamwork is the capability of exploiting complementary time zones and economise on product development time through a 24-hour workday, spread across locations and people.

Within this chapter, following a general assessment of virtual collaboration, teamwork in virtual environments is to be examined. First, obstacles and success factors for virtual teams in general, and then, aspects of virtual teams that collaborate over national borders and across different cultures are discussed. This literature review is accompanied by experts interviews that CSI has carried out among large Austrian companies like Siemens Austria and Austrian Airlines, both of which are maintaining virtual and at the same time international project teams.

There is no doubt that a good working climate within virtual teams is increasingly becoming a crucial factor for knowledge-based organisations, especially for MNCs with a globally dispersed workforce. To control the risks of virtual and cross-cultural collabo-

ration, a special sensitivity toward barriers and success factors is necessary – the same holds true for team work in general. Moreover, the findings of this chapter refer to all other chapters of this report; e.g. privacy: project leaders of virtual teams with little or no face-to-face contact are recommended to encourage team members in different locations to provide personal data on project web-sites or intranets to establish a feeling of virtual proximity and trust. This can conflict with employees' privacy needs, especially in cases in which the sensitive personal data provided is visible to persons other than team members.

When defining and describing virtual teamwork, it is important to refer first to teams in general, as virtual teams share most of the characteristics of traditional teams. In addition, in order to reduce complexity, we use the term "team" or "virtual team" only in the context of professional working groups or task groups (e.g. working teams for software development, research and development or sales teams). Generally, teams can range from two to about 25 persons, otherwise they tend to divide up into sub-teams. Teams need complementary skills or the right mix of skills to do the assigned job. These skills fall into three categories: technical or functional expertise, problem-solving or decision-making skills and interpersonal skills. A team's purpose and performance goals belong together, both must be clear or confusion will likely result. In addition, teams need to develop a common approach or method on how they will work together to accomplish their purpose. Finally, groups become teams when they hold themselves accountable for the outcome (cf. www.seanet.com, www.virtualteams.com).

Virtual teams differ from co-located teams with permanent physical meetings, as groups of co-workers spread out over distances collaborate using telecommunication links. Nevertheless, it must be mentioned that not all definitions of virtual teamwork are limited to collaboration over distances. For example, virtual teamwork may be practised by persons in different units of a large firm at the same location or team members may work different shifts. Also, not all definitions include the use of some sort of groupware like bulletin boards, video-conferencing or specific tools like Lotus Notes (i.e. in some virtual teams only e-mail or telephone lines may be used). Nevertheless, when discussing issues, obstacles and success factors for virtual teamwork, it makes sense to emphasise a certain degree of dependency on electronic devices along with geographic dispersion, as such teams primarily interact electronically and may meet face-to-face only occasionally (or even never).

Table B.6.1 Challenges of virtual teams

Type of challenge	Description
Communications	• traditional social mechanisms are lost or distorted • communication dynamics such as facial expressions, vocal inflections, verbal cues, and gestures are altered • distinctions among member's social and expert status lost or distorted • inhibition in building trust • communication process dysfunction
Culture	• potential for multiple cultures requires greater communication skills • unrealistic cultural expectations • communication may be distorted through cultural misunderstand-ings/biases

Logistics	• multiple time zones make scheduling meetings as well as travel very difficult
Technology	• technophobia • need for proficiency across a wide range of technologies • team membership bias towards individuals skilled at learning new technologies

Source: Kayworth, Leidner, Mora-Tavarez 2001: 6

In conclusion, we define virtual teams as teamwork at remote locations + telecommunication links + (in most cases) groupware. "Working teams in general are groups of people who share a common purpose or goal and interact interdependently within a larger organisational setting. Unlike their conventional counterparts, virtual teams can be dispersed across organisational, space, and/or time boundaries and are often cross-functional in nature, where team members come from a variety of organisational departments or business units" (Lurey and Raisinghani 2001).

There are many categories for distinguishing among different forms of teams. Below, we mention only a few most relevant for virtual teams.

Process teams versus project teams
Process teams undertake routine and standardised activities or tasks. Process work is the most common form of work, it exists in all organisations (e.g. assembly-line work, bank and insurance office work, clerical work etc.) and has the following structure: it is predictable, repetitive, standardised, takes a short time to conclude and maintains the status quo of organisational processes.

Project teams are fundamentally different from process teams, as they undertake work that is creative, dynamic and non-routine by nature: it is unpredictable, unique, difficult to standardise, takes a long time to conclude and may change the status quo of organisational processes. Examples of project work include most IT work, filmmaking and other artistic work, strategic planning, business process re-engineering and research and development (cf. www.thomsett.com).

Degree of advanced technology use
Virtual teams are supported by both hardware and software. Software requirements include electronic mail, groupware products like meeting facilitation software (e.g. audio- or video-conferencing systems), group time management systems and further tools, from simple mailing-lists to collaborative writing systems. Obviously, the degree of advanced technology used may differ according to the differing goals of virtual teams (e.g. software programming vs. collaboration of non-technicians). For example, larger software development teams at different locations using different time zones to

reduce development times need standardised workflow applications, e.g. the daily work of the software engineers doing the basic programming is forwarded to a central host system, to which the test team has access, and the work is continued (e.g. Siemens Austria with basic programming teams in India and test teams in Austria). Such automatised daily virtual work routines with advanced technology and standardised processes may entail completely different challenges and needs for further communication compared to virtual teams like sales group that have to report and co-ordinate their work on a weekly or monthly basis using audio- or video-conferencing and e-mail or telephony for further one-to-one communication. Hence, virtual teamwork can vary to a large extent.

A recent survey of COLLABORATIVE STRATEGIES (2001) among 100 large US companies representing multiple industries revealed that for 83% of the respondents virtual collaboration is critical to the functioning of the company. Especially sales force automation and distributed project management were two key functions for which collaboration was identified as critical. Inasmuch as collaboration is more prevalent within a company than it is between companies, the authors found that most collaborative functions were supported by intranets. The basic functions that US firms are supporting in 2000 fall into 5 main categories:

- Document management: document publication co-ordination and routing, broadcast publishing
- Group calendaring/scheduling: staff and facilities calendar updates, meeting management support, including meeting facilitation, and support for virtual, remote or distributed meetings
- Project management: workforce management and project co-ordination, including distributed project management, support for mobile working, sales force automation
- Communication: information-sharing and threaded discussion forums, including video-conferencing, collaborative working around a common "table", accessing remote and distributed applications, supporting key functions business processes such as product development
- Knowledge management: sharing and recycling corporate knowledge, creating a corporate memory, preserving intellectual capital.

Figure B.6.1: Groupware tools for communication, co-ordination and collaboration
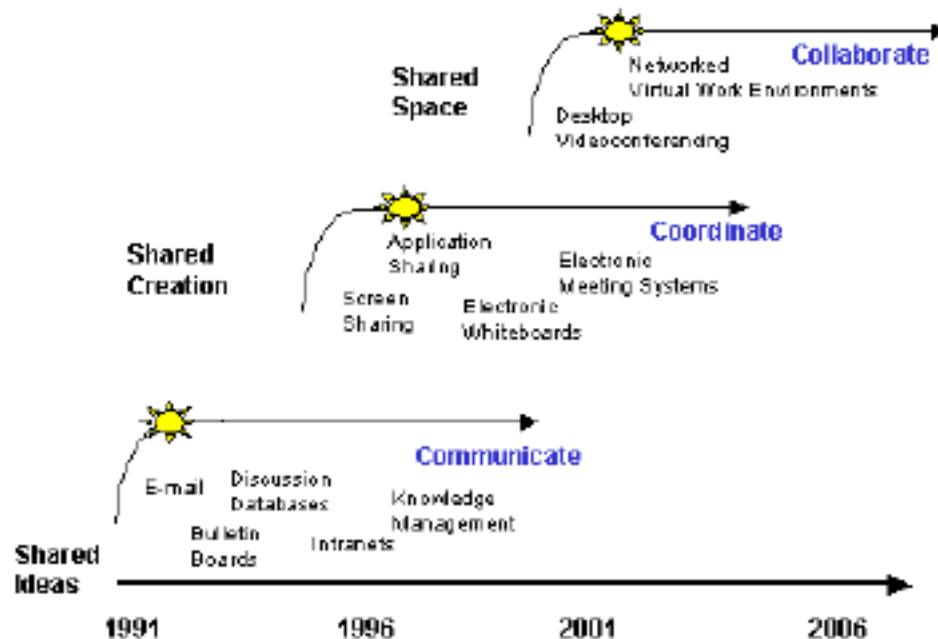
Source: GartnerGroup, cited in: Caucus 2000: 19

The figure B.6.1 distinguishes between communication (shared ideas), co-ordination (shared creation) and collaboration (shared space) tools for virtual teams. As corporations need to solve increasingly complex problems among dispersed workgroups, distributed business units, and interdependent supply chains, the tools required for online communication, too, are getting more complex. To date, most virtual interaction is primarily conducted online using tools such as e-mail, chatting, instant messaging, discussion databases and bulletin boards that are not optimised for their task. While current-generation communication tools are valuable and have their place, taken together they may create a cacophony of disparate noises, rather than collaborative harmony. They often have their own unique user interface, and data from one is not accessible via another. Moreover, almost none of them supports true collaboration in an online environment (CAUCUS 2000: 2).

According to CAUCUS, the next-generation Virtual Collaboration Application must be designed based on a thorough understanding of the processes by which real human beings collaborate in virtual environments. It must:
- create a true environment for collaboration, rather than a "web site", "portal","message stream" or a "filing cabinet";
- map best practices in collaboration into the virtual environment;
- support complex webs of interconnected people, processes, and information;
- provide a sense of shared presence and support the building of ongoing relationships in the online environment;

- integrate the best features of current-generation communications, e-commerce, and data management tools;
- transcend the current dichotomy of synchronous/asynchronous communication and support the emerging convergence of B2B, B2C, and B2E environments;
- allow people to collaborate whenever and wherever they are by supporting multiple access modalities (e-mail, web, wireless, etc.);
- be a "blur offering" of technology, consulting, and training; and finally,
- it must put human interaction at the centre of the collaborative experience (CAU-CUS 2000: 3).

Formal virtual work groups versus informal communities of practice

Within recent years, so-called "communities of practice" have come into the focus of observation. In contrast to formally organised working teams with clearly designated goals, membership and functions, communities of practice are more informal groups of persons within or even outside a company that have similar interests, but do not work together directly. Meanwhile, a range of large companies (e.g. global consulting firms) are trying to install such CoPs, as it is widely recognised that they enrich organisations. Lesser and Storck from the IBM Institute for Knowledge Management (2001) carried out some case studies among multinational companies. They have identified some of the specific business outcomes that are influenced by communities. These include:

- decreasing the learning curve of new employees;
- responding more rapidly to customer needs and inquiries;
- reducing rework and preventing "reinvention of the wheel"; and
- spawning new ideas for products and services.

According to Lesser and Storck, CoPs obviously work. However, what counts for all virtual teams is also true for communities of practice: Management action is needed!

- Provide opportunities for individuals to make new connections (physical and/or virtual).
- Allow time and space for relationship-building among individuals.
- Find ways to communicate the norms, culture, and language of the community and the organisation (Lesser and Storck 2001: 840).

Table B.6.2: Linking business outcomes with the dimensions of social capital by using Communities of Practice

	Connections	Relationships	Common Context
Decrease learning curve	Find experts	Mentor and coach new employees	Understand rules of the firm
Increase customer responsiveness	Find individuals with similar experiences	Develop willingness to respond to random questions	Understand the common language
Reduce rework and prevent reinvention	Find artefacts and the individuals who developed them	Establish positive reputation	Understand situational nature of knowledge
Increase innovation	Leverage weak ties that provide exposure to new ideas	Build safe environment for brainstorming and testing new ideas	Understand which problems are of common interest

Source: Lesser and Storck 2001: 839

Degree of Difference: culture, language, organisation, function

To establish commonly accepted approaches and methods for providing goals and performance is the central challenge all working teams are confronted with. But virtual work, and virtual cross-border work in particular, in which team members with different cultures and/or languages have to be committed to common goals, is an even more complex phenomenon. There is some empirical evidence that more heterogeneous teams (not only in terms of being multicultural, but with respect to all kinds of diversity) can be more productive than homogenous teams due to multiple perspectives on any given situation, yet they also risk experiencing greater losses due to faulty processes (for more details see chapter B.6.3 below).

Case study: video-conferencing are not always what they appear to be

The international team arranges a video-conference using the most modern technology. The participants, from the US, Brazil and Bulgaria, have not met each other yet. You are the project manager. "Good day everyone. Are we ready for the conference?", you ask, looking into the camera. Everyone nods, except for the Bulgarian who shakes his head. What's his problem? Well, in Bulgaria shaking one's head means "yes" and nodding signifies "no". Think of the misunderstandings that can arise if this gesture is interpreted wrongly, particularly when the participant nods!? The conference continues. You then ask, "Were all of the project reports okay?" Forming an "o" with his index finger and thumb, the American gives the okay-sign. The Brazilian appears shocked. In Brazil, this sign means something like: "You asshole". The conference continues ...

Source: Bartsch-Beuerlein and Klee 2001: 24

## B.6.2 Barriers and success factors for virtual teams

A majority of the literature discussing aspects of virtual teams and providing suggestions on how to improve virtual working environments refers to communication technology, i.e. provides suggestions on to install user-friendly groupware, knowledge-management and workflow systems etc. Without a doubt this is important, as technology is the backbone for virtual collaboration. Nevertheless, more concern for communication processes within teams is necessary, as mutual trust and confidence depend largely on behavioural aspects, group mechanisms and management competence. Although efforts must be made to explore how ICT systems can effectively engender trust-building in virtual collaboration settings, it is always human beings that interact in virtual teams - as in all teams. Trust relationships within flexible networks established by teams within or across a company are inherently fragile. The real-time co-ordination of work across locations poses challenges for management as well as incentives and remuneration for virtual teams. For example, consider how differently the concept of managerial "authority" evolves when management is anonymous rather than face-to-face.

Trust, first of all, is a personal disposition that people possess to varying extents due to individual socialisation processes. Second, trust in institutions and organisations varies among countries and cultures (e.g. very high in Scandinavian countries, very low in transition countries like Russia). Third, and most important, trust is a mutual relationship between two or more persons that can be improved by appropriate measures. Trust depends on the *competency* and *willingness* of others, while both traits are associated with the degree of proximity and experience. Hence, due to the fact that project work is carried out over distances for only a brief period of time and with only little face-to-face contact, trust-building in virtual teams is more difficult than in co-located teams. The following observations concentrate on empirical findings regarding barriers and success factors for virtual teams, of which technology is only one part.

Reference models on team effectiveness integrate input, process and output factors using a series of relevant variables, of which the following are most relevant:
- Input factors: group (selection of team, complementary competencies of team members, cultural diversity), task (type of work, project duration), context (company support mechanisms, reward system, leadership style), technology.
- Process factors: leadership and project management, internal group dynamics and communication patterns, information access, cohesion, conflict resolution, project team rules.
- Output factors: performance, job satisfaction

Figure B.6.2: Team effectiveness – input, process and output factors
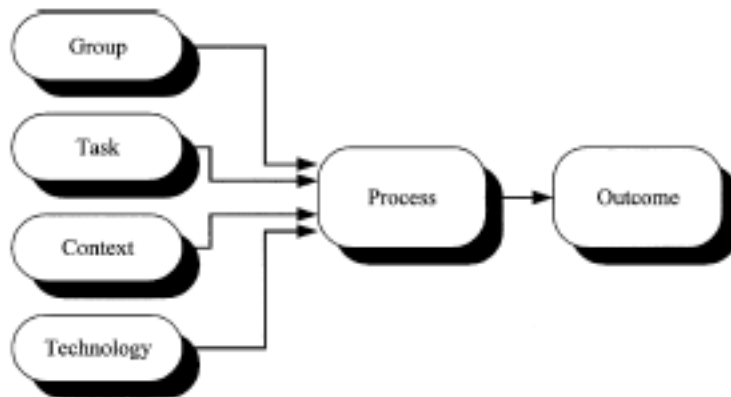
Source: Lurey and Rainsinghani 2001: 525

In the meantime a series of empirical studies exists which attempt to discover the most critical predictors for team performance by using complex models of correlation analysis. Much of the data resulting from research on virtual team effectiveness suggests that many of the issues that affect virtual teams are similar in nature to those affecting co-located teams: „Organizations choosing to implement virtual teams should focus much of their efforts in the same direction they would if they were implementing traditional, co-located teams" (Lurey and Raisinghani 2001: 532):

- Team processes and team members' interpersonal relationships represent the strongest correlations to team performance and team member satisfaction.
- Selection procedures (group), companies' support structures and leadership styles (context) are important for effectiveness, although these associations are weaker.
- Regardless of the specific tasks, at the beginning of projects certain problems of virtual collaboration are often underestimated, e.g. misunderstandings and mistrust due to the lack of face-to-face meetings often become noticeable too late.
- Teams tools and technologies (e.g. groupware) are important, but show weaker associations with team effectiveness than process factors and all other input factors. Access to information and resources for all team members as well as reliable communication links are even more important than advanced groupware tools.
- Project management and sensitive leadership are more important in virtual teams than in traditional teams. Codes of conduct with binding rules for virtual teams are crucial from the beginning, for instance:
- Hold an initial face-to-face start-up; for long-term or permanent teams, establish a schedule of periodic face-to-face-meetings.
- Establish interdependency among team members; make explicit the need for virtual team members to nurture each other and create relationships.
- Agree not only on what, when, and how information will be shared but also on how team members will respond to it.
- Establish clear norms and protocols for surfacing assumptions and conflicts.

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- Recognise and honour diversity (cf. www.seanet.com).
- The most important guidelines for asynchronous communication are:
- "bulletin board, not mailing list": information is stored in a database and queried actively, thus reducing appreciably the amount of information sent to individual participants
- agree on very specific rules for the process involving "sending – receiving – confirming" information, i.e. when and how to respond to messages.

Case study: e-mail netiquette at Procter & Gamble Germany

At Proctor & Gamble Germany, a giant in the chemical industry, the handbook on e-mail etiquette comprises 41 paragraphs intended to make dealing with electronic mail among the some 8000 employees easier. The regulations address issues such as phrasing the subject, length of messages and attachments and selecting recipients for distribution lists. The question of what to do when going on holidays or absent on business trips is also treated in the handbook. The following is one of the most important rules: employees shall respond to electronic mail from inside of the company within 48 hours. If that is not possible, then at least a confirmation of receipt should be sent within this period. The message is then: mail received, answer forthcoming – pending clarification.

Source: Die Mitbestimmung 5/2002: 42

B.6.3 Barriers and success factors for cross-cultural virtual teams

Building effective virtual teams that can reach envisaged targets is a complex challenge that requires not only appropriate technology, but also substantial efforts in the way of distributed project management, in order to guarantee interdependency among team members, recognition of diversity and so on. Obviously, managing cross-cultural virtual teams is even more complex, as members with different languages, cultural habits and working styles come together. The following case study on a large German high-tech company gives insights into how difficulties may multiply when cultural differences are not recognised at the very beginning of a cross-cultural collaboration project.

Case study: Internet communication within international teams can be tricky

Nothing. No minutes from any meeting did the project manager in Munich receive from his staff in Asia and South America. Even though he had thoroughly discussed with them how he intended for them to work together. For his job was not easy: his employer, a Munich company, manufactures parts for electrical appliances in 16 different countries. His job was to co-ordinate the work of the 16 managers at these subsidiaries. So, he had ruled that all of the managers on any one continent were to form a

team and meet regularly, holding regional video-conferences to discuss matters; the team leaders were then to mail him the minutes of these meetings. A clear directive, one would think. From Europe, Africa and North America the minutes arrived regularly. But nothing of the kind came from Asia and South America.

Six months later the project manager in Munich called a meeting in Germany attended by all and found out the cause for the silence: cultural differences masked by Internet communication. It was the typical problem a so-called virtual intercultural team comes against. Colleagues who communicate across international boundaries almost exclusively with the aid of new media do indeed save time and money, but many times they notice collective misunderstandings either too late or even not at all. The result is then a multimedia skirmish or even silence on the net.

The South Americans, on the one hand, had their reasons for not sending the minutes. Within so-called "palaver-cultures" communication works differently than it does in Munich. All participants at a meeting speak at the same time – and, in so doing, exchange ideas and thus reach a solution. Since for these individuals every conversation represents a process whose results are always tentative, the team leaders were not used to documenting facts in the form of minutes. Behind any communication difficulties among virtual teams are usually found varying ideas, dictated by culture, of what working together is all about. What are minutes? Is the message "everything's fine" really information? Or who makes the decision when differences of opinion arise, the majority or the team leader, or is everything simply postponed until a consensus takes shape? Matters, which, from the outset, a mono-cultural team is implicitly agreed upon, are tentatively undecided in an intercultural one.

A rough orientation, at least, within this cultural chaos is provided by the scheme devised by Great Britain's Richard D. Lewis. It is intended to help individuals categorise their own cultural position. Lewis, a leading researcher in the area of intercultural communication, distinguishes among three kinds of cultures: *linear-active*, *multi-active* and *reactive* ones. Linear-active people like North Americans and Germans are interested in facts and get their information from databases or, of course, written minutes. They do one and only thing at a time, everything in the order in which they have entered them in their appointment calendars. Yet keeping appointments can be threatened, if, for example, South Americans are found among their colleagues. These are multi-active individuals who like to do more than one thing at a time and, to top it all, in an unforeseen order. After all, appointments are artificial affairs, staged by people; is it not then more realistic to deal with unforeseen events as they occur, to take care of appointments as they come up? For this reason, while a multi-active co-worker may join a video-conference an hour after it begins, in the meantime this person has taken care of a couple of unexpected matters, and is quite satisfied in this knowledge. Yet, this pattern of behaviour can pose a problem, particularly when dealing with people from reactive cultures, such as Japanese or Finns. In contrast with multi-active individuals, reactive people prefer to listen carefully first and develop their

own idea of what is going on before reacting. They dislike taking the initiative. How, then, could an Asian team leader, on his own initiative, mail the minutes of a meeting to Germany? Beyond this, as a matter of courtesy, reactive people use subtle gestures, impersonal modes of speech and vague wordings – it matters less what one says than how one says it. These habits of language were another reason that the Asians' video-conference was less than successful.

The cultural chaos that the project manager from Munich and his team discovered at an intercultural workshop six months later was breathtaking: northern Europeans and Americans, as it turned out, expected the video-conferences carried out by the whole team to deliver first and foremost facts and results, the "palaverers", moreover, wanted to nurture contacts. The project manager labelled the Asian and South American team managers unreliable, while they, for their part, were proud to have acted loyally toward their teams. The Asian boss, a Vietnamese with experience of communism, even found it risky to divulge information to a project manager – who would then mail it to 16 other countries!

What can be done in such a situation? "When many cultures are involved, it does not make sense to explain all of the differences to each other," suggests Andreas Bittner from the Institute for Intercultural Management. Only a general awareness of cultural diversity, mutual tolerance and personal meetings when conflicts arise can help – along with unequivocal agreements. This might include a set of rules for communication, laying down who is to use which medium to what end, what the minutes of a meeting are to look like and whether or how to react to circular mails. "And at the beginning of a video-conference the discussion leader should personally greet each participant so that an awareness of who is participating can develop." If very different cultures are facing each other, it could be worthwhile entrusting those from the palaver-cultures with the task of setting forth the rules of discussion. As long as a team consists of individuals from less than 16 cultures, it may be helpful to talk about attitude differences in detail.

Source: Die Zeit 44/2001: 84

Among others, Nancy Adler argues that culturally diverse teams (involving both domestic and cross-border multiculturalism) have the potential of achieving greater productivity than homogeneous teams, but they also risk experiencing greater losses. Thus, they are either very productive or very unproductive, but seldom in the middle on the productivity scale. On the one hand, they can display multiple perspectives on a given situation, i.e. more and better ideas, or limited groupthink. On the other hand, multicultural teams have greater difficulty than their homogeneous counterparts in integrating and evaluating these perspectives. "Studies show that members of multicultural teams use more of their time and effort in creating cohesion and solidarity than do members of homogeneous groups. If unmanaged, cultural differences can paralyze a team's ability to act" (Adler 2002: 145).

Adler sums up the most relevant losses due to faulty processes in culturally diverse teams and then gives some hints on how to overcome these problematic issues using sensitive project management (Adler 2002: 141 ff).

Special risks in culturally diverse teams

- Attitudinal problems: dislike and mistrust
  Members of culturally diverse teams express higher levels of mistrust than do their more homogenous counterparts. Team members often find themselves more attracted to people from their own culture than to others.
- Perceptional problems: stereotyping
  Team members often inappropriately stereotype colleagues from other cultures rather than accurately seeing and assessing their skills. Mutual frustration resulting in diminished productivity can be the result. For instance, team members generally talk more to colleagues from higher status cultures than to those from lower status cultures. They assume, usually subconsciously, that national stereotypes apply to individual team members. Thus, in initial meetings, team members often inappropriately judge their colleagues from the economically most developed countries the most favourably. Members of a team of engineers, for example, assumed their American colleagues had more technological expertise than did their Moroccan colleagues simply because Morocco is economically and technologically less advanced than the United States.
- Communication problems: inaccuracy, misunderstanding, and inefficiency
  In linguistically diverse groups, some members must speak a foreign language or use an interpreter. When all members do not speak the team's working language fluently, communication is slowed down. Furthermore, if team members are not trained in recognising cultural diversity, misinterpretation is typical. Many Indian team members, for example, look down when acknowledging authority, a behaviour many European and North American managers misinterpret as signalling a lack of trustworthiness. As a result, European and North American team leaders often fail to develop sufficient trust in their Indian colleagues to delegate to them or share with them more than trivial responsibilities.
- Cross-cultural stress
  Communication and perceptional problems and a lack of trust often cause additional cross-cultural or cross-border stress. Multicultural teams often exhibit symptoms of considerable social stress, including bickering, apathy, single-party (or single-culture) domination of discussions, stubbornness, and reprimanding. Multicultural teams often show a quiet climate of politeness and gradually increasing friendliness. However, these rituals of politeness often merely reflect the team's superficial defence against weak cohesiveness. Ritual politeness leaves team

members frustrated and usually becomes yet another hindrance, blocking them from realising high productivity.

Managing cultural diversity

After a culturally diverse project team is designated, group internal communication processes begin to unfold. Whether teamwork is productive depends on sensitive project management and necessary interpersonal skills for: recognising differences or seeing situations from another person's perspective; creating a shared social reality; explaining problems appropriately; and establishing agreed-upon norms for interacting. All this is easier said than done, but it is decisive to note that after a period of low productivity due to misunderstandings and mistrust there is only a limited opportunity for correction.

Hence, in multicultural teams the selection of appropriate team members is critical. In general, two rules should be taken into account: *first*, when a task requires team members to assume highly specialised roles, it is usually more advantageous to use a diverse team. When everyone must do the same thing or when team members work on simpler tasks involving repetitive or routine procedures, work generally progresses more smoothly if members think and behave similarly. Corporate consulting teams, for example, generally work most effectively when they include a range of specialists – finance, marketing, production, and strategy experts (Adler 2002: 149). *Second*, whereas diversity is generally valuable during early project stages like planning and developing, it becomes much less helpful during the final implementation or "action" phase. Thus, during the initial phases of a project more effort should be put toward bringing diverse group members together, enabling them to spend enough time at face-to-face meetings (if possible) in order to define common methods and rules.

Table B.6.3 Effectively managing team diversity

Diversity can be most effective when:	Diversity is least effective when:
Task: innovative	Task: routine
Stage: divergence (earlier)	Stage: convergence (later)
Conditions: • differences recognised • members selected for task-related abilities • mutual respect • equal power • superordinate goal • external feedback	Conditions: • differences ignored • member selected on basis of ethnicity • ethnocentrism • cultural dominance • individual goals • no feedback (autonomy)

Adler 2002: 149

Case study: EHPT – innovative in the management of teleworkers and virtual teams

EHPT, owned by Ericsson (60 per cent) and Hewlett Packard (40 per cent), was founded in 1993. EHPT creates solutions and provides software applications that enable content and communications service providers to run, bill and develop their businesses. The company with headquarters are in Sweden functions almost solely in a teleworking mode. Its staff is distributed over 17 sites, from Paris to Kuala Lumpur and Moscow and from Denver to Sao Paulo and Melbourne, with two bigger offices (staff >100) in Grenoble (France) and Göteborg (Sweden). EHPT has, therefore, had to find solutions to acknowledged obstacles to telework – fear of isolation: loss of visibility, damaging career prospects; reticence of management for fear of losing control; cultural and/or linguistic misunderstandings; and asynchrony due to different time zones.

To overcome these difficulties, EHPT has adopted an innovative management model. The work is organized in virtual teams made of employees from different geographical sites. In addition to a team manager, there is a coach at each site who is responsible both for the circulation of information and for work organisation. Special attention is given to communication within the teams so as not to confuse work-related communication with the build-up of interpersonal relationships and trust. The teams are brought together at least twice a year, to strengthen social ties more than for professional reasons. Performance evaluation is a particularly difficult task when done at a distance. To overcome this difficulty, the local coach and clients are involved and it also entails a face-to-face interview with the team manager.

Upstream from management, recruitment strives to select candidates having the ability to act autonomously as well as good communication skills and cultural sensitivity. Management training is focused on coaching and the difficulties of telework. When integrating new staff, instead of giving a briefing on company culture, the focus is placed on adapting to the local context in order to minimise the feeling of isolation. Careers and remuneration are managed locally to take into account the extremely varied practices from one country to the other. They also take into account that the demand for recognition is increased by the feeling of isolation and the autonomy of each employee. Various financial tools (e.g. stock options) are used, collectively or individually.

Source: ILO 2001a: 158

The following summarises obstacles in virtual teamwork that arise when using DCT (Distributed Cooperation Technology, i.e. groupware). Table B.6.4 gives an overview of relevant barriers and refers at the same time to proposed measures for overcoming them, which in part can also serve as good formulations for a code in this context.

Table: B.6.4 Social barriers and proposed measures for virtual teamwork

Barriers	Proposed measures
Fundamentals of culture and personal lifestyles	
• DCT work environment challenges inherited assumptions about work differently in "individualistic" and in "collectivistic" cultures • Culture is pervasive and even more transparent in DCT-work than in face-to-face collaboration • After extensive investment people often fail to use the new technology	• Learn about culture as part of the training for distributed working • Discuss the new tools with the new users • Examine health, security, social and environmental implications of virtual work, not just the use of technology, but its impact on lifestyles
Impact from organisations	
• Teamwork is not understood or supported • Mismatch about who is part of the team (members from vendors, consultants, suppliers) • Overprotection of information, or, conversely, too widely distributed information; corporate intelligence or security suffers; frustration and little value added from virtual business networks	• Output-orientation vs. time-orientation • Face-to-face meetings remain crucial besides exchange of information via DCT • Careful team selection, formation and negotiation of issues and trust building • Building team culture, training of cultural and social competencies
National or ethnic particularities	
• Transborder issues: language, culture, lifestyle, power imbalance ... • In individualistic cultures facts, data, deadlines get things done; in collectivistic cultures relationships, contacts, roles get things done	• Help understanding your context, attach contextual documents, graphics etc. • Get a functional understanding about differences in language and cultural styles • Allow face-to-face team meetings
Gender differences	
• Technology is "a guy thing". Difficulties in collaborating with groups due to misunderstandings of the nature of commitments, acknowledgements, use or abuse of humour etc.	• Examine and discuss communication styles • Learn the advantages of different communication styles for reaching diverse team members

Source: Simons 1998

B.7   IT-Training

The high degree of innovation that characterises computer technology has substantial implications for the working life. According to a recent estimation by ILO, approximately 80% of the technologies currently used at work will have changed by 2010 (ILO 2001: 240). A recent study by the U.S. financial consulting company Merrill Lynch on technology learning and education estimates that roughly 50 percent of IT employee skills will become outdated in three to five years. This continuous innovation process makes continuous employee (re-)training a central precondition of corporate competitiveness. It is not enough to just have IT workers who are trained in one set of skills at one point in time, rather workers must be constantly engaged in learning and upgrading their skills profiles. Thus, companies must invest in their training or risk to have an IT staff with obsolete knowledge.

Given the amount of employee fluctuation in the IT sector – 15 to 18 percent of people currently working in entry level jobs were not in the same occupation 12 months earlier (ITEC Strategy Group 1999: 15) – training investments furthermore provide an opportunity to strengthen an employee's ties to the company: 49% of IT professionals interviewed in the British ITEC Strategy Groups' survey 1999 reported that training opportunities would persuade them to stay with an employer. Besides, the existing IT skills gap in the Western world can be seen as a main reason why it lies in the interest of companies themselves to invest in IT training: the EU-wide structural shortage in ICT training within European educational system leads – according to an EC estimation – to 1.2 million unfilled vacancies by 2002 (EC 1998). For the U.S., the Information Technology Association of America's survey found that "for every ICT job that exists today, employers will attempt to fill another 1.6 positions this year" (quoted after ILO 2001: 219).

This high relevance of IT-training for large sectors of business together with the high relevance of computer-related technology for e-work already mentioned in previous chapters justifies a closer look at the topic. We review evidence on the status quo of IT-training in terms of people trained, money spent and returns on investment in training. We also describe the kinds of training measures currently in use. Finally, we sketch ethical issues related to training.

B.7.1 Quantitative evidence on IT-Training

**Present situation**

The global demand for IT training has been growing steadily over the last decade. The Merril Lynch study already mentioned in the introduction estimates that the global

training market will total about 300 billion dollars this year, expanding to 365 billion dollars by 2003. However, a report by U.S. IT consulter IDC on the worldwide and U.S. corporate IT education and training market of the present and future indicates that in every region in which IDC covers IT training, analysts have revised 2001 market figures downward and lowered expectations for growth in 2002 (see www.idc.com). This contrasts sharply with the previous years. According to IDC, companies spent 18 percent more for IT training in 1999 than in 2001. The IT training market was still growing in 2001, but more slowly, particularly in the United States.

Concerning the U.S. market, in an IDC survey from 2000 which queried 200 U.S. managers responsible for purchasing IT training, nearly 95 percent of survey respondents indicated that they've used at least one IT training service within the past year. The most popular services include reporting and tracking tools, pre- or posttraining mentoring and support, inventory and gap analysis, and custom curriculum design and development (see figure B.7.1).

Figure B.7.1: IT training services in the U.S
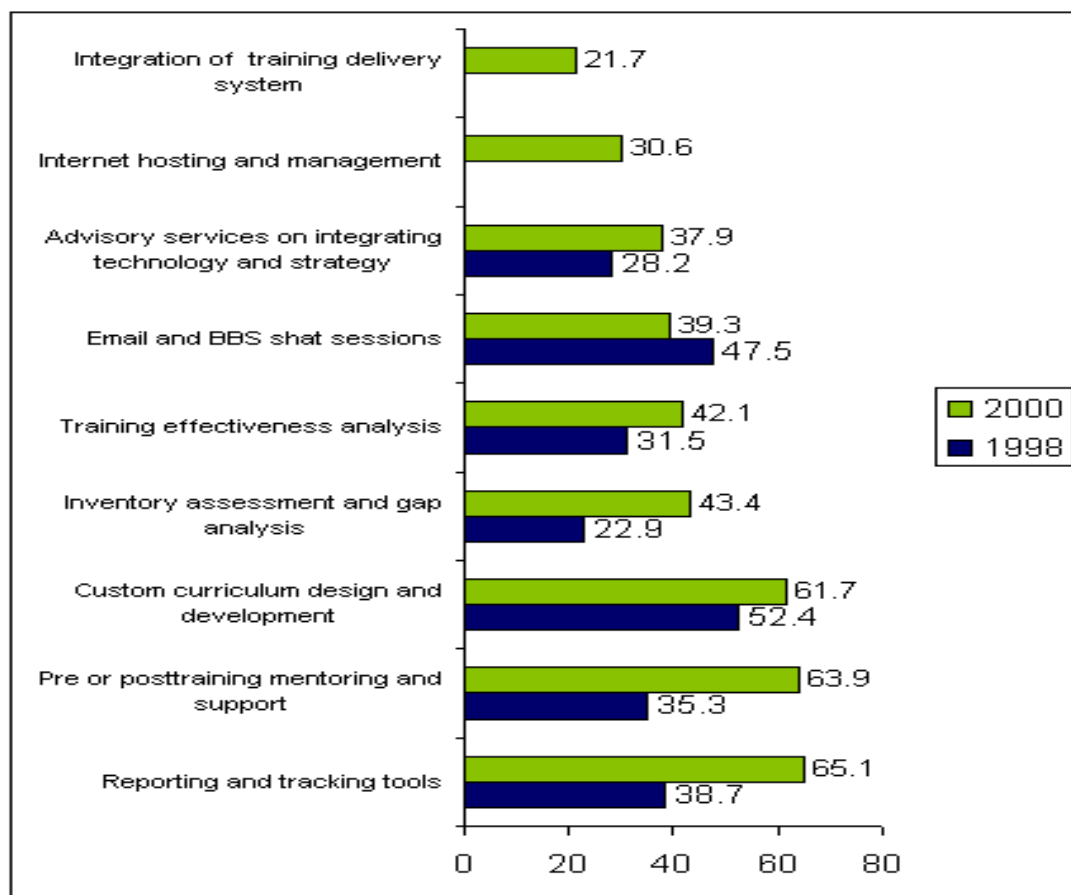
Source: www.idc.com

In Europe, IT training too has increased in importance for both companies and governments. According to a recent report by the EU's working group on ICT-skills, employers by now have become much more aware of the need to update the skills of their employees (see ICT skills monitoring group 2002). They are now more likely to see training as an investment, not just a cost.

In some EU countries, including France, companies are legally obliged to invest a minimum proportion of their revenue (1%) in employee training. In France, about 40% of life-long learning courses for workers relate to training and up-dating ICT related skills.

In the Northern EU Member States, the involvement of the government in developing training schemes is greater than in the south. For instance, in the Netherlands, a Joint Paper agreed between the social partners and the government focused among other contents on ICT skills, including fiscal incentives for employers to train their employees, the introduction of a Personal Development Plan and Personal Development Accounts. This account enables all employees and job seekers to save money for training (possibly including IC training). Correspondingly, in Denmark IT training has become a mandatory part of all vocational degrees. Concerning the British situation, the results of the already mentioned study by the ITEC Skills Strategy Group 1999 indicate that sizeable proportions of new job-entrants in Britain do not receive sufficient in-company IT training, and the level of training for some employees is below the average for the broad occupational categories to which they belong: Only 30% of software engineers in IT services had received training recently, compared to 45% of those in all professional occupations.

All in all, training initiatives have so far been identified in 12 of the 15 Member States. Most of these programmes include the following types of actions (see European Commission 2002b):
- Tax relief for companies investing in IT training or company obligation to invest in employee IT training (France, Denmark, Norway, The Netherlands and soon Italy)
- General IT skills training for employees, using e-learning resources (e.g. Nordic countries, the UK, Ireland, France, Italy), bringing IT trainers to the company to teach employees (e.g. Greece), or sending the working force to designed ICT courses imparted outside the time work schedule (e.g. Austria, France, Germany)
- Specialised IT courses for employees (UK, Ireland and Nordic countries).

Case Study: Internet training at Liverpool John Moores University
A three -hour course called „Exploring the Internet" has been developed by the university's department for Learning & Information Services for staff and researchers as a part of a programme of IT skills-based courses. This continually developing course is

intended for those who are new to the internet. It aims to provide everyone with suffi-
cient knowledge to

- use the institutionally available browser
- search out relevant information
- gain a general awareness of „what's out there".

Source: http://materials.netskills.ac.uk/case-studies/cs1.html

Public-private partnerships in developing IT training programmes have also been de-
veloped in some European countries. Often, the public sector will provide funding and
the private sector will deliver the course content. A successful example of a scheme
working with SMEs is SKIN in Germany, a Skill Improvement Network. SKIN is a pro-
gramme that is primarily driven by the private sector and is very focused on its target
group – people already in SMEs looking to re-train and extend their IT skills. Its com-
bines distance network-based learning and local classroom training and the course
participants use material from Microsoft's official curriculum and Cisco's Networking
Academy programme and access to accreditation.

Future possibilities

How will the IT training market develop over the next years? The IDC report already
mentioned predicts that the worldwide market for IT training will soon begin to fare
better, and anticipates a compound annual growth rate of 11.2 percent through 2006.
IDC credits the slowdown in IT service and software spending for having adverse ef-
fects on the rate of IT training, but expects that better times are ahead. The recent
economic slowdown has caused a deceleration in the outsourced corporate training
market rather than a contraction, and IDC therefore remains cautiously optimistic that
double-digit growth in the market will soon return.

Reasons for employers to invest in training

Given that IT training has gained so much popularity among employers, what reasons
do they give for making training investments? Almost unanimously, studies have con-
cluded that enterprises are interested in training as a means of securing improved
workplace performance and greater profitability (Moy and McDonald 1999; Office of
Training and Further Education 1998; Billett and Cooper 1998).

In an international study covering the EU member countries, Coopers and Lybrand
(1996) found the majority of enterprises believe that training their employees brings
returns in the form of:

- productivity improvements,
- greater workforce flexibility,
- savings on material and capital costs,
- a more motivated workforce, and

- improved quality of the final product or service.

An earlier study by Carnevale and Schulz from 1990 came up with the very similar findings that training typically benefits firms through:
- increased revenue and lower unit costs resulting from increased productivity of capital and labour,
- reduced expenses resulting from less wasted time and materials, less absenteeism and fewer accidents, and
- difficult to measure improvements in productive culture, such as greater employee flexibility and improved employee morale.

Returns on investment in (IT-)training

What evidence exists to jugde to which degree the expections employers hold towards training are justified? What returns on investment (RoI) in IT training measures can they expect?

Unlike other expenses, training expenditures represent an investment by the firm in their employees. As with any other investment, a commitment to training is directly related to the expected returns from each dollar invested.Assessing the value of these returns has been the subject of a large body of international research (e.g. Bartel 1994, 1995, 2000; Barrett/Hovels 1998; Leimbach 1994; Schneider/Monetta/Wright 1992; Stolovitch/Maurice 1998). The results from this work provide evidence across a range of sectors that training investments can yield very high levels of returns for firms, varying between 30 and 7000 per cent.

The returns on training investments are not always in the form of direct increases in labour productivity or profitability, which have been the usual variables that researchers in this area have been concerned to measure. It can also result in
- higher levels of value added activities – e.g. IT-related tasks – as a result of higher skill levels
- greater employee flexibility
- reduced overhead costs to through more efficient use of existing facilities, lower consumable costs and reduced human resource expenses
- greater ability to innovate in terms of adopting new technology and introducing better forms of work organisation
- training makes the introduction of changes in the company generally more successful
- training yields particularly high returns when it is linked to technological change.

The increasing need for continuous IT training is to an increasing extent met through innovative training methods. Two examples:

E-learning

This new way of organising training which mostly combines direct trainer-trainee interaction with online co-operation periods is generally believed to have substantial potential in

- reducing the costs of workplace-related education and training
- saving time otherwise needed for getting to and from training locations,
- offering potentially universal access to best-in-class learning content available worldwide.

According to Gohl and Pichler (2001), the amount of e-learning has risen by 117 percent from 1999 to 2002. The authors found that the percentage of organisations using the Internet for training purposes grew from 3% in 1996 to 38% in 1999. For intranets, the rate of growth was even higher, from 3.5% to nearly 40%. Web-based training is expected to rise by more than 900% between 2000 and 2004. According to IDC, over twenty-seven percent of business skills training in Europe will be provided via e-learning by 2005. This would entail a compound annual growth rate of 108.2 percent for the European e-learning market between now and then. E-learning adoption and development is most advanced in the Netherlands, Scandinavia, and the UK. Concerning training costs, studies show that "corporations save between 50 to 70 percent when replacing instructor-led training with electronic content delivery." E.g., IBM could save 24 million dollar through introducing a training system mixing 75% e-learning with 25% direct interaction (Gohl and Pichler 2001).

Reverse Mentoring

Reverse Mentoring means that younger employees are training older executives in dealing with new technologies and business practices. Gohl and Pichler (2001) point to this new trend in U.S. and international companies and mention Best Buy Co. Inc, General Electric, Procter&Gamble or Siemens AG as examples for companies using this instrument. Both parts of a reverse monitoring relationship benefit from it, as young employees get in touch with important executives, and executives get in tune with IT-related novelties. It is therefore expected to spread further in the future.

Case Study: Wilsons Leather's IT-training solution
Wilsons Leather, an international specialty retailer of leather outerwear, sportswear, and accessories, was in search of a corporate-wide training program that was best suited to help train its associates throughout all of its business segments. The com-

pany wanted to maximize productivity and job satisfaction by implementing a program that would enable associates to develop their computer skills and strengthen their professional development. They also wanted to provide a cost effective training solution employees could utilize at their own pace, without conflicting with other work activities. In addition, they wanted to avoid spending a lot of money on employee travel and the hiring of instructors. The company recognized that Web-based training could offer a cost-effective approach that enabled everyone access to training regardless of where they were located.

Wilsons Leather selected an e-learning solution that compelling enough to engage its people and offer the richest, most varied curriculum-one that went far beyond just technical training. The courses offered were especially user-friendly, particularly to those who had little experience with computers. After completing the course, associates could follow up with an assessment to ensure they were grasping the critical components.

„Computer skill levels among our associates vary greatly and we believe it's really important for everyone to feel comfortable using today's technology", said Russ Edwards-Simpson, Director of Human Resources at Wilsons Leather. „Some of our associates really needed to learn the basics and the courses helped them achieve this. We feel it is important to provides our associates with the tools they need to facilitate their own career development."

Source: Element K Corporate Case Study (www.elementK.com)

B.7.3 Ethical issues related to IT-Training

How can IT training be organised in a way that fairly balances employer and employee interests? We will now briefly sketch three issues in relation to this question.

Paying back training costs

Training investments in general raise the problem of how to handle their costs in case of an end to the employment relationship: To what extent should employees be obliged to pay back the costs of their training? According to the already mentioned report by the EU Commission's working party on ICT skills, it is increasingly accepted among employers that training benefits everyone, not just the company concerned. Even if employees move on within two years, they bring those skills to another employer and are probably replaced by someone who has benefited from training elsewhere. Nevertheless, regulations regarding the employee's duty to pay back training costs after the end of employment are still quite common.

Our interview partner from the Austrian Union of Salaried Employees (GPA) indicated that the most acceptable solution for employees consists in making the amount of payback dependent on the time of employment: The longer an employee stays with an employer, the less of his training costs he has to pay back in case of termination of

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employment. After a sufficient amount of years, the payback sum even falls to zero. In the case of company-specific training imparting only company-specific skills, no payback at all is justified. A potential alternative would consist in a training fund into which employees pay shares of their income, enabling them more substantial independence from their employer. Such a solution however does not seem to be common anywhere across Europe or elsewhere.

Broadness of corporate training

Companies have also been critisised for too narrow, too company-specific IT training. According to Australian Labor's education spokesman Michael Lee, „some company-based IT training does lead to secure employment (...) but it is also important that young people have the opportunity to learn IT skills that would allow them the widest possible choice of employment in future years" (see http://workers.labor.net.au/114/news1_trai-ning.html). It has accordingly been argued that training measures should balance the company's interest in imparting specific skills to its employees with the possibility for employees to acquire skills they can also use for other employers.

Training instead of replacing

From an employee point of view, it appears highly desirable that employees get the opportunity to update their skills instead of being replaced by new employees. There is some evidence that especially older members of the workforce may not have the opportunity to up-date their skills and knowledge (ITEC Strategy Group 1999). As the workforce in the Western world is generally ageing, training older employees might however also be reasonable from the standpoint of the company: While presently 67% of employees in the IT industry are aged between 25 and 44 and 90% are under 50, there will be 3 million fewer new entrants to the workforce in Europe by 2020 and those aged over 50 will increase in number by 9.6 million (European Commission 1998,17). Besides, it appears shortsighted to build mainly on newly recruited employees, as it takes six months or more for them to become fully productive (ILO 2001: 231).

Moreover, if companies employ IT-trained immigrants instead of training their own staff, this can cause a major loss of valuable intellectual capital for the developing countries the immigrants come from. A number of reports refer to the high costs of "brain drain", especially for the lowest income countries. For example, during the period 1964–86, 58.8% of graduates in computer science from the Indian Institute of Technology migrated abroad (ILO 2001: 223). The ILO data show India's difficulty to retain its best talents given the high global demand for skilled IT workers. For example,

- Germany is offering 20,000 "green cards" for software workers,
- Japan is seeking 10,000 IT workers over the next three years,
- Ireland is intending to recruit 32,000 by 2005,
- France 10,000; Italy 8,000; Republic of Korea another 10.000.

Although not indicating precise figures, other countries, like Belgium, Iran, Singapore, Spain and Syria also report interest in importing Indian IT-graduates. In the Western host countries, organisations representing workers such as the U.S. Software Professionals' Political Action Committee critisise employers' tendency to favour immigrants and replacing domestic workers with lower paid foreign workers, who are prepared to work in the United States for 40 percent of current United States salaries (see http://www.zazona.com/ShameH1B/Library/Archives/Softpac/Syntel.htm).

Case Study: Siemens Environmental Systems Ltd

SESL is part of the multinational Siemens organisation that employs 350,000 world-wide including 14,000 people in the UK. The company has some 150 staff based at Poole. The company is a major player in the field of environmental protection and develops and manufactures products and systems that detect radioactivity, gas leaks and the contamination of water and air. The business works in partnership with other companies, research organisations, government departments and agencies. The company develops new technologies and designs and manufactures innovative environmental products.

Siemens pursues an active policy of training to ensure staff have the IT skills relevant to their role in the company. This includes training in all standard office applications such as Word Excel and Access. Training courses were developed that fulfilled the needs established. Some 25 SESL staff attended the training courses in Word, Access, Excel, MS Project, Front Page and Visio. According to Personnel Officer Suzanne Jones, "the courses have provided improved competency in the applications and the ability to support others in the use of the package, as well as improved accuracy and efficiency." "The courses are frequently run and there is the flexibility to tailor courses to the company's and the individual's needs. Feedback from delegates is always very positive. The trainers are very good, as are the facilities."

Source: Deverill Training Case Studies (www.deverill.co.uk)

B.7.4 Some formulations from existing codes of conduct

UNI-Telefonica Code of Conduct:

All workers shall be given the opportunity to participate in training programmes especially those meant to improve workers skills to use new technology.

Standard Chartered Group Code of Conduct:

As a world-class organisation, Standard Chartered recognises it is essential we have the best people equipped with the right skills and knowledge to perform their roles to the highest standards.

We want talented professionals, who seek self-development opportunities including continuing professional development. In return we offer excellent training and development. We focus development on where we believe we will get the greatest return, by developing employees' strengths.

We utilise a full portfolio of learning resource such as in house programmes, external providers, on the job training and computer-based training. We sponsor employees for professional qualifications on a part time basis, as well as in their own time.

We have Learning Resource Centres in major locations. Other centres are being developed and will provide employees with the opportunity to update their skills on various software packages, use the Intranet, the Internet and gain access to books.

B.8   Cross-cultural diversity in the light of business ethics

As spearheads in the globalisation movement, companies need to understand something about cultural diversity when operating worldwide. Promoting implementation of codes of conduct that do not seriously respect different cultural perspectives risks widening misunderstandings and setting the stage for hostilities that could otherwise have been avoided. In discussing dimensions specific to culture, we do not wish to surrender for cultural reasons to the temptation of systematically denying the applicability all ethics in business conduct, based on cultural arguments. The central concern of this chapter is to describe how different cultures can influence a global approach to ethics programmes, thereby contributing to an awareness of cultural diversity.

Companies tend to act in self-referential ways by enforcing their own value and interest systems on employees. Hence, any initiative in business ethics can be assumed to more often reflect the business culture developed within the particular organisation and to neglect cross-cultural aspects as far as business partners and sub-contractors with different organisational structures and cultural backgrounds are concerned. The existence of cultural variation implies that MNCs risk failing to achieve their purpose when formulating codes reflecting western cultures. Practices which are appropriate in one culture setting may violate the established understanding regarding organisational and social life in another cultural context, resulting in managerial conflicts and in rejection of the code as such. A sound, world-wide approach to management ethics will need to address the question of how to encourage ethical behaviour in organisations involving different configurations with respect cultural characteristics.

Two fundamental differences between global and domestic organisations are geographic dispersion and multiculturalism. Multiculturalism means that people from more than one culture interact regularly. To successfully manage geographic dispersion and multiculturalism within MNCs, managers must develop a global mindset (Adler 2002: 15).

B.8.1 Definition of culture

After cataloguing more than 100 different definitions of culture, Kroeber and Kluckhohn (cited in: Adler 2002: 16) have offered one of the most comprehensive and generally accepted definitions: "Culture consists of patterns, explicit and implicit, of and for behaviour acquired and transmitted by symbols, constituting the distinctive achievement of human groups, including their embodiment in artifacts; the essential core of culture consists of traditional (i.e., historically derived and selected) ideas and especially their attached values; culture systems may, on the one hand, be considered as products of action, on the other, as conditioning elements of future action".

- According to Trandis (2001: 74): "Culture is a shared pattern of categorisations, attitudes, beliefs, definitions, norms, values and other elements of subjective culture".
- BT – Variety and values (2001: 7) asserts: "Cultures are made up of a complex of individuals and behaviours within a common framework."
- According to Brown (1976, cited in: Adler 2002: 16): "Culture is something shared by all or almost all members of some social group; something older members of a group try pass on to younger members; something (as in the case of morals, laws, and customs) that shapes behaviour, or ... structures one's perception of world."
- Hofstede (1980, cited in: Adler 2002: 16) observes that managers frequently see culture as: "the collective programming of the mind which distinguishes the members of one human group from another ... the interactive aggregate of common characteristics that influence a human group's response to its environment."

Adler (2002, 16) defines the cultural orientation of a society as "the complex interaction of values, attitudes, and behaviours displayed by its members".

- Values: a value is that which is explicitly or implicitly desirable to an individual or a group and which influences selection among available modes, means, and ends of action. Latin American managers, for instance, consider the value "loyalty to the family" as highly important, whilst US managers strongly believe in individual achievement. Korff et. al. (1999: 202) describe four dimensions in value conflicts within international business operations: a) different political concepts and interests; b) different social behaviour and social systems; c) different norms and standards concerning natural environment and safety; d) different cultural traditions and expectation of behaviour.
- Attitudes: an attitude expresses values and disposes a person to act or to react in a certain way. For example, market research has shown that French Canadians have a positive attitude toward pleasant or sweet smells, whereas English Canadians prefer smells with efficient or clean connotations.
- Behaviour: behaviour is any form of human action. As a result of their culture, Latin Americans, for example, touch each other more frequently during business negotiations than do North Americans, and both touch more frequently than do Japanese (Adler 2002: 17).

In a manner analogous to the recognisable loss of biodiversity, the loss of cultural diversity increases political and economic instability. The tensions between Western cultures and others, as highlighted by the terrorist attacks on New York City and Washington, D.C. in September 2001, evidence the growing uneasiness in the face of a perceived dominance of Western cultures. The developing world increasingly finds its values, beliefs and cultures overwhelmed by the Western cultures – as a result of

globalisation. Onuman Yasuaki (quoted from Bauer and Bell 1999: 10), professor of international law at the University of Tokyo, criticises the quest for universalising Western values: "There is little room left, [...] to think that something non-Western can be universally valid and that Western outlooks may be unique to particular societies." Symptomatic for the loss of cultural diversity is the endangerment of languages: up to half of the approx. 65,000 languages now spoken are on the brink of extinction. Many observations suggest that we may lose over 90% of the world's languages during the next century; only a few hundred will survive. In fact, more than a quarter of the world's population now speak English (cf. BT – Variety and Values 2001: 10). With this disappearance of languages, entire cultures may vanish.

The European Commission recently added "cultural sustainability" to the concept of sustainable development as a fourth dimension. In light of the attacks on New York City and Washington D.C. in September 2001 "it is high time" to recognise that the respect of cultural identity and diversity is crucially important, since no safeguards protect cultural differences against conflicting interests. The debate about how to maintain cultural diversity and identity must take into account "not just the recognition of differences, but equally the existence of a common set of values, such as the respect for human life and human dignity, freedom of religion, freedom of information, and the right actively to participate in one's own culture" (European Commission 2002c: 16).

B.8.2 Cultural variation

Differences in work-related attitudes exist across a wide range of cultures. Geert Hofstede (1991, cited in Adler 2002) surveyed 160,000 managers and employees in more than 60 countries working for an American MNC. According to this study, national culture explains 50% of differences in employees' attitudes and behaviours, more than does professional role, age, gender or race. He found significant differences in behaviour and attitudes along four primary dimensions: a) individualism/collectivism, b) power distance, c) uncertainty avoidance and d) career success/quality of life. Additional dimensions of cultures are e) contexts of communication (Weaver 2001), f) conception of managers and manageability (Laurent 1983), and g) conceptions of rules and relationships (Adler 2002).

a) Individualism versus collectivism
Social life and personal identity determine the distinction between "individualistic" and "collectivistic" societal cultures. Individualism subordinates collective purpose to personal goals, while collectivism does the opposite. Collectivists hold common goals and objectives, not individual goals that focus primarily on self-interest. In collectivistic societies, self-identity is constituted by the group and in-group/out-group distinctions are

an important part of one's understanding of the world. Members of collectivistic cultures place more emphasis on fitting in harmoniously and preserving behaviour patterns. Members of individualistic cultures place more emphasis on individual self-respect. Examples of collectivistic cultures might be China or Korea, whereas USA, Sweden, or Australia are seen as individualistic cultures.

Trompenaars and Hampden-Turner (1998, quoted after Adler 2002: 55) found that managers worldwide vary markedly in their orientation towards individualism or collectivism. Among other questions, they asked managers which of the following two options would be most likely to improve the quality of life:

1. Giving individuals the maximum opportunity to develop themselves
2. Having individuals continuously take care of their fellow human beings

The vast majority of American (79%), Canadian (79%) and Norwegian managers (76%), for example, selected the first option stressing individual freedom, whereas most managers in Nepal (69%), Kuwait 62%), or Egypt (59%) selected the second option stressing collective responsibility.

Table B.8.1 Differences between individualistic and collectivistic cultures

Dimensions	Individualism	Collectivism
Self	Autonomous from in-groups	Dependence on in-groups
Goals	Personal goals are given priority over in-group goals	In-group's goals are given priority over personal goals
Tradition / hierarchies	Less sanguine about hierarchies and social tradition	Acquiescence to hierarchical, traditional and communal relationships
Interpersonal relationships	more typically enter into short-term, exchange-based relationships and are more competitive	
Conflict behaviour	Prefer direct communication in conflicts (adversarial approach)	Prefer to avoid conflicts or that they not be brought into the open (conciliatory approach)
Values	Personal freedom, recognition, satisfaction	Harmony, face-saving, fulfilment of others' needs

Case study: The Pacific Area Travel Association

A global market research firm in Tokyo conducted a survey of travel market potential for the Pacific Area Travel Association (PATA), an organisation comprising the national tourist offices of various Pacific Rim nations. In addition to a standard questionnaire, each nation was invited to submit a few of its own open-ended questions. Of the ten countries surveyed, the US Department of Commerce was the first to send in questions. Individual names were always attached to each letter when they were faxed from the US. The southeast Asian nations required more time, because the research firm

had to exchange many letters and faxes with the Philippines and Tokyo before it received their final responses. In analysing these responses, the survey researchers concluded that the contrast between the Americans' and the Filipinos' responses to the same task stemmed from the relative emphasis on the individual versus the group. Whereas the US office gave sole responsibility to one individual, the more group-oriented Filipinos delegated the task to a whole department. Since the Philippines office involved everyone in the task, it naturally took longer.

Source: Adler 2002: 56

b) Power distance

A culture's power distance indicates the extent to which a society accepts the fact that power in institutions and organisations is distributed unequally. In high power distance countries, like France, Poland, Venezuela, India, and the Philippines, there is acceptance of inequality and respect for the bounds of social status or class. Employees either tend to view their organisations as traditional families by which they expect to be physically and economically protected (e.g. Singapore, Philippines) or view their organisations as a pyramid of people in which communication runs in formal, vertical lines (e.g. former Yugoslavia, Mexico). When negotiating in high power distance countries, companies find it important to send representatives with titles equivalent to or higher than those of their counterparts from other organisations. By contrast, in low power distance countries, like the US, Israel and Denmark, society is likely to value the minimisation of inequalities, superseding status and class roles, relatively informal relations across social levels and a more diffuse assignment of blame for failings. Their organisations have flat hierarchies, everyone talks with everyone else and risk-taking is both expected and encouraged. Titles, status, and formality command less importance in low power distance countries.

Case study: An American executive in London

An American executive moved to London to manage his company's British headquarters. Although the initial few weeks passed relatively uneventfully, it bothered the executive that visitors were never sent directly to his office. A visitor first had to speak with the receptionist, then the secretary and then the office manager. The American became annoyed with this practice, which he considered a total waste of time. When he finally spoke with his British employees and urged them to be less formal and to send visitors directly to him, they were chagrined. After a number of delicate conversations, the American executive began to understand the greater emphasis on formality and hierarchy in England.

Source: Adler 2002: 57

c) Uncertainty avoidance

This dimension reflects the extent to which a society feels threatened by ambiguity. In high uncertainty avoidance cultures, ambiguous or unpredictable circumstances provoke anxiety, and in consequence attempts to minimise it. High uncertainty avoidance invokes efforts to gain stability based on formalised systems, rejecting deviant ideas and behaviour while accepting the possibility of identifying absolutes. In countries like Greece, Japan and Portugal, managers tend to attain unquestionable expertise. In return, they are providing their employees greater employment stability. High job mobility, on the other hand, occurs more commonly in low uncertainty avoidance countries such as Denmark, Singapore and the USA.

Employees in high power distance countries tend to view their organisations as pyramids of people; everyone in the organisation knows who reports to whom, and formal lines of communication run vertically, up and down the organisation, never horizontally. In high uncertainty avoidance and low power distance countries such as Israel and Austria, organisations tend to resemble "well-oiled machines": they operate highly predictably without needing a strong hierarchy. Most North American post offices provide excellent examples of this type of organisation: they reduce uncertainty by clearly defining roles and procedures.

d) Career success and quality of life or masculinity vs. femininity

Societies differ from each other in that some focus more narrowly on career success while others broadly emphasise quality of life. Career-success cultures are more materialistic, i.e. oriented toward acquisition of money and things, focusing on competition and advancement while emphasising little concern for people. A further characteristic is the rigid definition of women's and men's roles, in that women are expected to stay at home without pursuing a professional career. In this respect, the US, Austria and Japan are seen as "masculine" cultures, which define women's and men's roles more rigidly. In contrast, quality of life cultures emphasise relationships among people, human needs, care, and the overall quality of life. In such a "feminine" culture gender roles are less narrowly defined and women are expected to work (e.g. Sweden).

The career-success / quality-of-life dimension strongly affects workplace motivation. For example, Japanese quality circles primarily strive to achieve maximum quality (career success / high uncertainty avoidance), whereas the innovative Swedish work groups – originally used at Volvo – attempt to enhance job satisfaction and flexibility (high quality of life / low uncertainty avoidance).

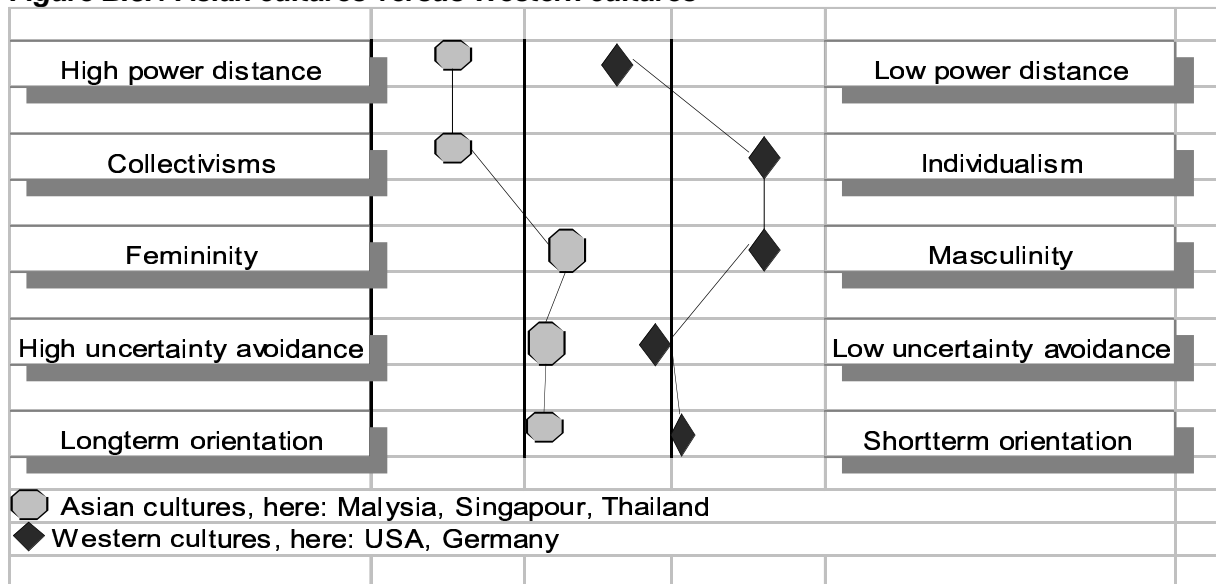**Case study: Swedish managers' "inadequate" business commitment**
Swedes frequently surprise their international clients when they end the work week on Friday at 5 p.m. or announce their intention to fly home at the end of the day because

they want to spend more time with their families. Swedish businesspeople describe many of their international colleagues, especially Americans, as willing to work the whole evening or weekend just to finish an important project. Americans, on the other hand, frequently resent the Swedes' behaviour, judging it to reflect an inadequate commitment to work. In actuality, the Swedes' choices simply demonstrate their strong commitment to quality of life, whereas the Americans and other similar foreigners behave according to their equally strong commitment to a particular project.

Source: Adler 2002: 63

The following figure provides on overview of the findings on dimensions of cultural diversity described above applied to Asian and Western cultures.

Figure B.8.1 Asian cultures versus Western cultures

High power distance	⬡	◆		Low power distance	
Collectivisms	⬡		◆	Individualism	
Femininity		⬡	◆	Masculinity	
High uncertainty avoidance		⬡	◆	Low uncertainty avoidance	
Longterm orientation		⬡	◆	Shortterm orientation	

⬡ Asian cultures, here: Malysia, Singapour, Thailand
◆ Western cultures, here: USA, Germany

Source: Reineke/Fussinger 2001: 98 (based on data of Hofstede)

**e) High-context versus low-context communication**

Drawing on Hofstede's findings, Weaver (2001: 7f) adds the cultural dimension of contextual communication in business management. A low-context culture is charac-terised by less attention to subtle messages and clues from other people (e.g. US, Germany). Thus communication is primarily based on spoken and written media and context is relatively insignificant for understanding the meaning of a message. A high-context culture is strongly based on personal relationships and may prove highly at-tuned to multiple forms of communication including non-verbal signals, e.g. eye con-tact, motion, barely audible sounds, etc. (South America, Asia). Here, conversely, un-derstanding a message is dependent on contextual factors.

f) Conceptions of managers and manageability

Laurent (1983, quoted after Adler 2002: 48ff) found cultures often hold varying views on the role and practice of management: managers are either assumed to be experts who know the solutions to organisational problems or, on the other hand, are treated as persons who only know how to orchestrate a process, generating in turn a solution to a problem. Cultures also differ according to whether managerial expertise may be tested. In some cultures, posing "unanswerable" questions to a superior represents insensitive, inappropriate behaviour on the part of a subordinate. More than four times as many Indonesian and Japanese managers as US managers agreed with the state-ment, "It is important for managers to have at hand precise answers to most questions

their subordinates may raise about their work." US managers define their role as that of a problem solver whilst the French see the manager as an expert.

Figure B.8.2: The manager's role varies across cultures (%)
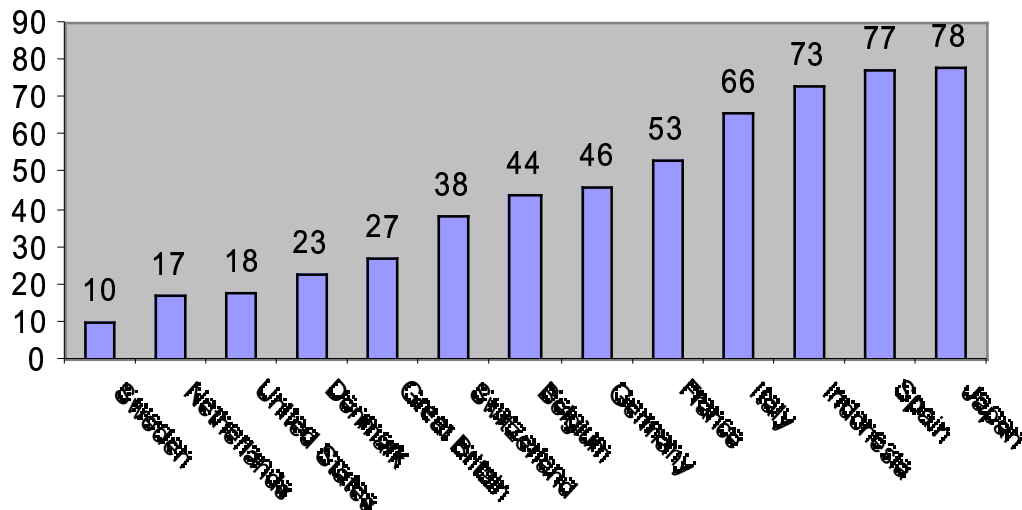
"It is important for managers to have at hand precise answers to most questions their subordinates may raise about their work".

Source: Adler 2002: 50

g) Conceptions of rules and relationships

The concept of universalism / particularism may be related to the cultural dimension of individualism / collectivism in analogous fashion. According to Adler (2002), universalistic cultures, such as Canada and the United States, believe that laws apply to everyone and they therefore must be upheld by everyone at all times. The "universalistic" principle of what is legal, and therefore binding, takes priority over particular details of who is involved in the specific setting. Rules are seen as applying equally to everyone with no differences arising from one's relationship to a particular person. In particularistic cultures, in contrast, such as South Korea and Venezuela, the nature of relationships determines how someone will act in a particular situation. In such a culture it makes a difference whether someone has a close relationship to another person. This principle may dictate that loyalty is more important than truth.

The following example gives an impression of what is meant by universalistic or particularistic cultures. Trompenaars and Hampden-Turner (1998, quoted in Adler 2002: 64) asked more than 15,000 managers in 40 countries to consider what they would do in the following situation:

> "You are riding in a car driven by a close friend. He hits a pedestrian. You
> know he was going at least 35 miles per hour in an area of the city where
> the maximum speed is 20 miles per hour. There are no witnesses. His

lawyer says that if you testify under oath that he was only driving 20 miles per hour it may save him from serious consequences. What right has your friend to expect you to protect him?"

More than 90% of managers in Western cultures said that society's rules were made for everyone and are not willing to protect friends; therefore, they can be seen as protagonists of a universalistic society. By contrast, fewer than half of the respondents from South Korea (26%), Venezuela (34%), Russia (42%) and Indonesia (47%) would refuse to testify for a friend.

Empirically proven findings on cultural differentiation provide reasons for cultural clashes within the business economy. Universalistic cultures depend on extensive and detailed contracts as documents laying down rules for co-operation, whereas particularistic cultures rely on the strength of personal relationships. They view detailed contracts as a sign of mistrust and consequently they feel little need to abide by them.

Case study: the German won't hire the Serb's daughter

Mr. Rade, an engineer who had immigrated to Germany from the former Yugoslavia, worked for a highly respected German engineering firm. His daughter Lana had recently graduated from a prestigious German university. Mr. Rade wanted his German boss to hire Lana. But the boss refused to have a father and daughter working in the same office. Mr. Rade believed that his boss was acting unfairly. The boss lost respect for Mr. Rade and Mr. Rade became so upset that he requested a transfer to a new department. Neither Mr. Rade nor his boss understood that the conflict was caused by fundamentally different values orientations in the two cultures.

Source: Adler 2002: 29

As it has been shown, it is not easy for managers to know how to behave appropriately in an unfamiliar culture. A field study carried out by Black and Gregersen (1999) revealed that 10-20% of American managers sent to foreign countries cut short their period of stay and almost 30% did not meet their company's expectations. With "disturbing" regularity bosses did not consider whether employees' were open to foreign customs and traditions or understood the culturally specific way of doing business in the foreign country. At least three types of competence are demanded from managers when aiming to prevent conflicts between people from different cultures:
• The ability to accurately understand the parties' real intentions, demanding, in turn, detailed and precise knowledge of the cultures involved.
• The ability to "translate" between culturally different ways of expressing these intentions, requiring a commonly understood "language" in which to mediate.
• The ability to guide leaders in their strategic decision-making about what to do with each other; this raises the demand for an ethic that has universal validity.

Concerning the common thesis, that MNCs tend to become more universalistic as they operate more globally, Adler (2002) observes that globally organised businesses are in fact growing more similar, but peoples' attitudes within companies are maintaining their cultural uniqueness. She points out that employees and managers bring their cultural background and ethnicity to the workplace. National culture explains 50% of differences in employees' attitudes and behaviours, more than do professional role, age, gender or race.

The cross-cultural challenge for ethics initiatives is thus not a challenge to Western style of business ethics management in the sense that it is trying to displace ethics programmes in favour of some other set of programmes. Rather, it is a question of whether existing programmes are flexible enough to accommodate fully the needs of non-Western peoples. At the same time, the challenge for non-Westerns (e.g. Asians) is to position themselves in the discourse on universality, which many observers see as originating in and largely shaped by Western experience.

Weaver (2001) explicates how the dimensions of culture discussed above can influence the effectiveness of common ethics initiatives (e.g. codes of conduct, ethics telephone lines, ethics offices) and recommends the development and application of a culture-structure contingency analysis with the task of encouraging ethical behaviour in global businesses.

- The generally conciliatory, harmonising character of *collectivistic cultures* implies that certain ethics initiatives (e.g. formal grievance committees, investigative officers, external auditors, etc.) can be problematic. Such adversarial and legalistic devices highlight group disharmony and single out individuals for blame. Structures like internal reporting devices (ethics hot-lines) might seem too impersonal and contrary to established hierarchical relationships; (typically Western) systems of reward and punishment may represent an adversarial or confrontational approach.
- Inasmuch as power remains with upper-echelon managers, ethics initiatives which, in *low-power distance* fashion, focus on *all* organisational members will, in high power distance cultures, seem culturally illegitimate and may result in hostility. In a high power distance society, egalitarian ethics structures risk locating blame at the wrong organisational level and may be perceived as efforts by elites to *avoid* responsibility for exercising their power.
- Generally, formal codes and review procedures are compatible with *high uncertainty avoidance culture*, but Weaver considers critically the efficiency of anonymous reporting systems with their implied approach of ambiguous or unknown outcomes in high uncertainty avoidance cultures. He points out how corporate codes, ethics training, and ethics ombudspersons fail to do justice in the name of business

ethics in countries such as the Philippines. Business in the Philippines is characterised by the tendency toward informal approaches to problems and by tendencies to (re-)act purely on the basis of feeling.

- With reference to ethic initiatives Weaver suggests that punitive and regulatory ethics management structures are desirable in *masculine* cultures, whilst affirmatory and non-punitive approaches in ethics programs will generate more legitimacy in feminine cultures. Ethics management by non-punitive measures would likely be viewed as an end in itself, compatible with a feminine culture's stress on care, human relationships and quality of life. This leads to the consideration that companies in masculine cultures may need to do more to raise awareness of ethical issues as compared to e.g. Swedish or Norwegian companies.

- The effectiveness of particular ethics management practices depends on their *communication context*. Explicit formalisms, like written documents as published codes of conduct, etc. will be legitimated and better understood in low-context cultures, whilst in high-context cultures, codes and other formal procedures may be culturally irrelevant or seen as arrogant.

- In this way, as ethics initiatives allow lower-level employees to challenge the decision of superiors, they violate the norms of those cultures in which *managers are assumed to be experts*. In these settings ethics reporting systems will not likely be used and will risk organisational illegitimacy. Under these conditions Weaver suggests focussing on "expert" managers themselves, and to abstain from ethical decision-making modes from more "low power distance" situations.

B.8.4. UNESCO's regulation on cultural diversity

In 2001, the UNESCO's governing body – the General Conference – committed itself to the full implementation of the Universal Declaration on Cultural Diversity.[11] The Declaration recognises safeguarding cultural pluralism as a central issue of "new ethics" and cultural rights as an integral part of human rights. Within the action plan for the implementation of the Declaration, the UNESCO foresees, among other things, main lines to encourage digital literacy and to ensure greater mastery of the new information and communication technologies, as well as promotion of linguistic diversity in cyberspace and encouragement of universal access through the global network to all information in the public domain. The principles of the UNESCO'S Declaration on Cultural Diversity are along the lines of:

Identity, diversity and pluralism
- Cultural diversity is the common heritage of humanity and should be recognised and affirmed for the benefit of present and future generations.
- Policy expression respecting the reality of cultural diversity is essential to ensure harmonious interaction among people and groups with plural, varied and dynamic cultural identities.
- Cultural diversity is one of the roots of economic growth, but it also is a means of achieving a more satisfactory intellectual, emotional, moral and spiritual existence.

Cultural diversity and human rights
- The defence of cultural diversity implies a commitment to human rights and fundamental freedoms, which are universal, indivisible and interdependent.
- As defined in article 27 of the Universal Declaration of Human rights, all persons have the right to express themselves and to create and disseminate their work in the language of their choice, and particularly in their mother tongue; and all persons are entitled to quality and training that fully respect their cultural identity.
- Freedom of expression, media pluralism, multilingualism, equal access to art and to scientific and technological knowledge, including in digital forms, are the guarantees of cultural diversity.

Cultural diversity and creativity
- Cultural heritage as the wellspring of creativity must be preserved, enhanced and handed on to future generations.

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11 www.unesco.org/confgen/press_rel/ 021101_clt_diversity.shtml.

- Cultural goods and services must be treated as commodities of a unique kind.
- Cultural policies must function as catalysts of creativity.

B.8.5 Some formulations from existing codes of conduct

British Telecom – Better World, Our Commitment to Society/Employees:

In our view, you cannot be a successful global business, competing in the fiercely global market, if the way you do business is based on a single set of cultural values. The key to success is a recognition of the power of cultural, linguistic and behavioural diversity. [...] Diversity training is a core part of BT's training portfolio ... the modules currently include combating harassment and bullying and understanding cultural diversity.

BASF – Value Statement:

Intercultural Competence: We foster intercultural diversity within the BASF Group and work together as a team. Intercultural competence is our advantage in global competition.

Principles: We seek employees from all cultures and nationalities who possess the appropriate skills and competencies and are willing to devote their energies to meet our objectives and to support our values. We recruit our future leaders from all affiliates and promote preferably from within BASF. We do not tolerate discrimination based on nationality, gender, religion or any other personal characteristics.

B.9   Corporate citizenship with a focus on the digital divide

Businesses play a major role in the economic, social and cultural development of industrialised and developing countries alike. They create jobs, pay taxes, large companies support an immense number of SMEs in the value chain, and companies' contributions to education, social services, or civic and cultural development are of increasing importance. While, on the one hand, positive effects of companies' activities on societal development may be seen only as spin-offs, on the other hand it should be obvious that MNCs in particular have the responsibility of reflecting on how to support socio-economic progress in any country of operation.

The following pages are not intended to give a detailed picture concerning the activities of companies toward societal development in all areas of interest. Instead, we refer to one specific aspect of companies' responsibility in the context of global e-work, namely their contribution toward reducing the digital divide gap between industrialised and developing countries.

B.9.1 General aspects of corporate citizenship

The term "corporate citizenship" describes the role of business in society. Whilst NGOs tend to stress "corporate responsibility", leading companies themselves are inclined to prefer the term "citizenship" because of its implied balance between rights and responsibilities. According to the Corporate Citizenship Company (a UK-based research and consulting organisation) the term "corporate citizenship" refers among other things to "the voluntary contributions made by a company to community development around the world". Therefore, a key part of any corporate social responsibility programme is a focus on involvement within the local community – either directly or via partnerships with community or voluntary sector organisations. Three basic types of voluntary contributions that companies offer to societies around the world can be identified.

Table B.9.1: Types of activity toward corporate citizenship

Type of activity and motive	Examples	Outcomes for the business
Charitable gifts aimed at promoting the common good	Corporate philanthropic donations and support for employees volunteering and contributing	Measurable benefits to the business are rarely sought but a reputation is established for being a "caring company"
"Community investment" from community budgets aimed at a few areas of interest to the company and designed to	Support for local anti-crime initiatives, education and training, or local health provision to benefit employees, their families	The returns to the business are measurable in some degree by an improved physical or social environment in which

protect and promote its long-term interests	and the wider community	to do business and a better pool of potential employees
Commercial initiatives to achieve a wide range of business goals and promote brands, supported from business budgets such as marketing, HR and research	Cause-related marketing, support for research in universities and supplier development	Returns to the business are measurable in terms of increased share or access to new ideas and the most highly qualified employees and suppliers

Source: Corporate Citizenship Company (s.a.: 10)

Ben Cohen, founder of Ben and Jerry's Homemade Ice Cream, brings his self-understanding of CSR concisely to the point: "Businesses tend to exploit communities and their workers, and that wasn't the way I thought the game should be played. I thought it should be the opposite – that business had a responsibility to give back to the community, that is because the business is allowed to be there in the first place, the business ought to support the community. What we're finding is that when you support the community, the community supports you back" (quoted in: mhc international, news item, Nov. 2000).

One example of community investment with regard to domestic economic impacts is the numerous activities of British Telecom (see also B.9.4 below).

Case study: BT economics

At both ends of its supply chain BT affects local economics. In our main operations we have sought to place activities in areas of high unemployment – for commercial as well as social reasons. For example, we have:

- worked with government agencies to place call centres in Northern Ireland, Scotland and the South Wales valleys
- supported training centres as part of the Government's New Deal programmes, building skills for the disabled and long-term unemployed
- established the BT eLocations initiative that provides inward investors with a combined site search and communications package
- brought telecentres and e-business opportunities to rural communities.

Source: BT – From Globalisation to Localisation

B.9.2 Digital divide and initiatives for digital inclusion

The following section is about how MNCs can contribute toward reducing the digital divide and hence toward socio-economic progress in countries of operation.

The uneven diffusion of technology is nothing new. OECD (2001b) defines the digital divide as the gap between individuals, households, businesses and geographic areas

at different socio-economic levels with regard to their use of the Internet for a wide variety of activities. Generally speaking, ICT disparities exacerbate existing disparities based on location (such as urban-rural), gender, ethnicity, physical disability, age, income levels, and especially between "rich" and "poor" countries. Given the importance of ICT in economic development, a lack of access to knowledge and information may deny countries the benefits of economic prosperity. Factors like absence of IT infrastructure, high costs, high illiteracy, and limited knowledge of English language, make access to new technologies difficult in developing countries.

Across the world, the digital divide is where new ICT meet existing socio-economic inequalities. The volume of statistics is impressive and persuasive: There are more telephone lines in London or Manhattan than in all of Africa; half of the world's population has never made a telephone call, much less accessed the Internet. One in two Americans is online, compared with only one in 250 Africans. In Bangladesh a computer costs the equivalent of eight years' average pay.

The UN Human Development Report 2001 shows figures for the extent of the digital divide:

- OECD countries contain 79% of the world's Internet users (as a percentage of the population, 54.3 in US whilst 0.4 in Sub-Saharan Africa or South Asia), and 95.6% of all Internet hosts are located in OECD countries.
- In OECD countries there is more than one mainline telephone connection for every two people, but just one for every 200 in the least developed countries.
- Also ICT costs vary enormous among countries and are particularly high in developing countries: e.g. monthly Internet access charges amount to 1.2% of average monthly income for a typical US user, compared with 614% in Madagascar, 278% in Nepal, 191% in Bangladesh and 60% in Sri Lanka.
- Concerning the penetration rate of Internet hosts, the OECD (2001b: 13) says that in OECD countries there are 81.5 Internet hosts for every 1,000 inhabitants but only 0.85 per 1,000 inhabitants outside the OECD area.

A common assumption is that people in less developed regions or countries gain access to technological innovations once they have more income. Following this reasoning, economic growth first creates opportunities for useful innovation. But the reverse process has also been commonly observed; in fact, the digital economy has made unprecedented gains in advancing human development, while the means for eradicating poverty have come largely from technological breakthroughs.

What is clear is that the disparities between the "information rich" and "information poor" is growing, and the potential impact on society – whether good or bad – will be accentuated by technology. All countries, even the poorest, are increasing their access

to and use of ICT. Yet "information rich" countries are increasing their access and use at such an exponential rate that, in effect, the divide between countries is actually growing. Within countries, all groups, even the poorest, are also increasing their access to and use of ICT. But within countries the "information rich" are increasing access and use at such an exponential rate that, in effect, the division within countries is also actually growing (cf. www.bridges.org).

The digital divide is a complicated patchwork of varying levels of ICT access, basic ICT usage, and ICT applications among countries and peoples. Addressing the digital divide requires the integration of

- development of systems that can be used collectively, such as tele-centres;
- development of IT competence through training and education;
- abolition of telecom monopolies;
- promotion of specific programmes that support the combination of public and private networks; and
- development and use of innovative software that can be better used in a specific country or regional context.[12]

None of this is likely to come together without a massive injection of resources and creativity.

Requested activities to reduce the digital divide gap

Bridges.org (an international non-profit organisation with a mission to help people in developing countries using ICT) analysed a large selection of on-the-ground initiatives aiming at bridging the digital divide and set forth the following issues which are the determining factors in whether or not people have "real access" to technology.

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12 Deutsche Stiftung für internationale Entwicklung: The Policy Dialogue on Digital Inclusion; source: http://www.dse.de/ef/digital/ (17-05-2002)

Table B.9.2 What is Real Access?

Physical access	*Is there physical access to technology?* People will only use technology if it is available within a reasonable distance from their home or work. A computer that lacks adequate power supply, connection (Internet capabilities), and software will not be effective in helping people see the relevance of technology to their lives.
Capacity	*Do people understand how to use technology and its potential use?* People must be able to effectively use the technology. Furthermore, it is essential that people understand the broader potential for technology applications, so users can be empowered to creatively apply the technology to other parts of their life.
Affordability	*Is technology affordable enough for people to use?* The costs of hardware, phone lines, electricity, Internet connections, software, and maintenance are that expensive that this excludes many people and organisations from using technology.
Trust	*Do people have confidence in and understand the implications of the technology they use,* for instance in terms of privacy, security, or cyber-crime?
Relevant content	*Is there locally relevant content in the local languages?* Content is only relevant when its substance is interesting to users given their cultural background, and accessible given their reading, writing and language skills.
Integration	*Does the technology further burden people's lives or does it integrate into daily routines?*
Socio-cultural factors	*Are people limited in their use of technology based on gender, race, or other socio-cultural factors?* People are often excluded from using technology based on ethnic, gender, or other socio-culturally-based inequalities. These factors must be considered and addressed.
Appropriate technology	*What is the appropriate technology that meets the needs and desires of people?* A wide variety of technologies are available. Policy makers and users must be able to critically assess which kind of technology is appropriate for the intended use.
Local Economic environment	*Is there a local economy that can sustain its use?* The local economic situation will determine the level and frequency of technology use. Technology that can be used to foster economic growth will foster use in the community.
Legal and regulatory framework	*Do laws and policies foster technology use?* What changes are needed to create an environment that does?
Macro-economic environment	*Is national economic policy conducive to widespread technology use,* for example in terms of transparency, deregulation, investment, and labour issues?
Political will	*Is there political will in the government to do what is needed to enable the integration of technology throughout society?*

Source: Bridges.org (2001:73)

The researchers of bridges.org found out, that many initiatives address specific aspects within the range of issues, but too often they neglect related factors that limit their success. For example, too many tele-centres providing computers and connections in rural locations do not become self-sustaining because local people do not use the services – often they fail to address the role of the centre in the local economy or the need for locally relevant content. There is a need for a holistic approach to cover the range of issues to create effective and sustainable uses for technology that are integrated into local society. "It is a lack of investment in human capital, not a lack of investment in physical capital, that prevents poor countries from catching up with rich ones. Educational attainment and public spending on education are correlated positively to economic growth" (Barro and Sala-i-Martin, cited in: ILO 2001, 201).

Table B.9.3: Which aspects of access do current initiatives address?

	Physical Access	Capacity	Affordable	Trust	Relevant Content	Integration	Socio-cultural Factors	Appropriate Technology	Local Economic Environment	Legal and Regulatory Framework	Macro-economic environment	Political Will
Infrastructure	✓				✓		✓			✓		✓
Physical Access	✓				✓		✓			✓		✓
Training Programmes		✓			✓		✓			✓		✓
Telecentres	✓	✓	✓		✓	✓	✓		✓			✓
School Computer and Distance Learning	✓	✓	✓		✓	✓	✓			✓		✓
Online Information Resources			✓	✓	✓		✓					✓
E-Government	✓		✓	✓			✓			✓	✓	✓
E-Commerce				✓			✓		✓	✓	✓	✓
Health Care	✓			✓	✓	✓	✓	✓				✓
Agriculture	✓				✓	✓	✓	✓				
Other Applied ICTs	✓					✓	✓	✓				
Technology Development	✓						✓		✓		✓	

Source: Bridges.org 2001:74

Contributions of companies to reduce the digital divide
The uneven diffusion of ICT – the digital divide – has caught the attention of many leading companies worldwide. There are many companies that set out to achieve digital inclusion. This is a challenging task, given the complexity and uncertainty of the

interaction between information technology and economic growth in a period of rapid technology change.

In less industrialised countries or regions with deficiencies in access to ICT, community-based learning initiatives to promote digital literacy and usability are considered as solutions for reducing the digital divide. Observations from many corporate social reports reveal that companies are functioning more and more as sponsors of such community-based training initiatives and are showing their responsibility for empowering the low-income communities.

A more appropriate approach for many companies, both to reducing the ICT shortage and including the digitally excluded in countries of operation, is to focus on public-private partnerships for skills development. Nokia has been building up ICT training institutes in China and South Africa (the South African Development Programmes) and Cisco Systems is active in the promotion of education and training as a means of narrowing the digital divide (ILO 2001: 240). The PITB-Oracle initiative demonstrates the dramatic impact that a focused effort on strengthening IT training can make. This partnership with the second largest software company in the world was an important step in the effort to position Pakistan on the global IT map.

Case study: Punjab Information Technology Board (PITB) – Oracle initiative

In March 1999 PITB negotiated with the Oracle corporation to commit $13.5 million in terms of free software and courseware to launch the Oracle Academic Initiative in the province. The objective of the initiative was to develop the capacity of a set of partner educational institutions to prepare students to become Oracle Certified Professionals (OCPs), one of three skills for which a global shortage existed. An 8-month PITB Certificate Programme in Oracle Database Management was launched in ten educational institutions in September 1999. Programme quality was closely monitored by PITB, which selected the current study body of about 300 from a pool of 4000 applicants through a competitive examination.

Collaborative effort between academic institutions, government and industry resulted in an analysis of user requirements together with prototype systems. In less than twelve months the initiative received outstanding success. In December 1999, the Director of the Oracle Corporation reviewed the progress of the partnership, and as a result announced that Oracle would increase its investment in Punjab to $20 Million, at the same time announcing a unique fee discount on the certification tests for students participating in the programme. By August 1999, 200 students hat attained various levels of Oracle Certification and Pakistan had climbed to third place (after USA and Canada) globally in terms of number of new OCPs being certified. The Oracle Corporation described the PITB initiative as a "global best practice" case in considering the top ten students for international placement.

When asked, "what should be expected of companies" in bridging the digital divide, British Telecom[13] defines the responsibility of companies as following: "Companies have been the leading innovators in the development of ICTs. Their emphasis, however, has been on enabling technologies. While these are crucially important for addressing universal access and even to some extent change-making content, they don't tend to have the potential for deep e-capability, the critical gateway for addressing the long-term challenges underpinning the digital divide. Companies have an enormous potential, through the weight of their financial resources, but also in the case of ICTs through products and expertise, to facilitate deep e-capability through learning processes. (...) Partnerships are really able to create multiplier effects because of the coming together of different parties and their relevant expertise. (...) Finally and most importantly, companies must transparently commit themselves to addressing the digital divide within their core business strategies as well as through community investment. Best practice will come when there is a blurring of the lines between the two, thereby creating the win-win scenario of CSR. Commitments come in many forms, one notable however is from the top – that CEOs make stands on the issue and influence relevant parties to do likewise, both externally and internally. Another is the transparent and accountable setting of targets for continuous improvement both for business and social development."

An example of partnerships, as suggested by BT, is the cross-border "digital partnership", established by leading companies and the World Bank, in which companies find imaginative ways to integrate technology, telephone connections, training and Internet access. The mission is to mobilise the immense problem-solving capability of people in business, make use of the vast IT resources they dispose of and provide access to content that can do something practical about levels of literacy among the poor.

Case study: digital partnership
It has been estimated that in the OECD countries about 600 million PCs will be decommissioned in the next five years. The value to companies concerned is generally less than $50 per PC and effective disposal is becoming increasingly costly for companies as managers have to observe stricter environmental regulations. But these PCs are worth something to poorer countries and their value would be immeasurably greater if they were part of a sustainable programme. A group of pilot companies that includes ABB and Diageo is helping develop a cost-neutral economic model that could become part of a blueprint for recycling technology for use in the developing world. The

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13 BT (2001): The Digital Divide. Better World – Our Commitment to Society. www.groupbt.com/Betterworld/PDF/digital_short.pdf (23-05-2002)

Digital Partnership intends to bring together companies that can offer hardware and software, telecommunications links, training and content to develop a plan for deploying these services in the community. Pilot programmes are being planned for South Africa with the National Business Initiative and other countries can follow.

Source: Financial Times, May 3 2001.

Case study: Breaking barriers to Internet access

The World Wide Web is too expensive for millions of people in developing countries, partly because of the cost of computers that are the standard entry point to the Web: in January 2001 the cheapest Pentium III computer was $700 – hardly affordable for low-income community access points. Further, the text-based interface of the Internet puts it out of reach for illiterate people. To overcome these barriers, academics at the Indian Institute of Science and Engineers at the Bangalore-based design company Encore Software designed a handheld Internet appliance for less than $200. Based on the Linux open source operating system, the first version of the Simputer will provide Internet and email access in local languages with touch-screen functions and micro-banking applications. Future versions promise speech recognition and text-to-speech software for illiterate users. The intellectual property rights have been transferred for free to the non-profit Simputer Trust, which is licensing the technology to manufacturers at a nominal fee – and the device is soon to be launched.

Source: PC World 200; Simputer Trust 2000; Kirkman 2001, cited in: UN Human Development Report 2001

Another good example of digital inclusion is HP's approach, in its aim to broaden access having the potential to create value.

Case study: The Joko Project

The Joko Project – born of a partnership involving HP, Sontal (Senegal's predominant telecommunications provider) and world-renowned musician Youssou N'Dour – is providing Internet connectivity, training and locally initiated solutions to connect Senegal with the world.

- "Joko Clubs" make Internet usage economically available for the first time in rural and urban Senegal
- "Joko Stations" in Europe and America will link expatriate communities to families and friends back home
- Services include e-mail, affordable telephony, education for both students and teachers, weather reports, crop prices, vocational training, e-jobs, counselling, financing and telemedicine.

"The best sign of success is the eagerness and excitement of the communities we're involved with," says HP e-Inclusion Manager Bernhard Virondreau.

Source: http://www.hp.com/e-inclusion/en/project/joko.html

B.9.3 Some formulations from existing codes of conduct

Caux Round Table's Principle 2:

The Economic and Social Impact of Business: Towards Innovation, Justice and World Community: "Businesses established in foreign countries to develop, produce or sell should also contribute to the social advancement of those countries by creating productive employment and helping to raise the purchasing power of their citizens. Businesses also should contribute to human rights, education, welfare, and vitalisation of the countries in which they operate."

ING, Business Principles:

Wherever ING operates, it recognises that good relations with its local communities are fundamental to its long-term success. The Group's community relations policy is founded upon mutual respect and active partnership, aimed at sustaining lasting and trusting relationships between the group's operations and local communities.

B.10 Core labour standards with focus on collective bargaining

In the world of intensifying competition that both globalisation and ICT have created, the need for decent labour standards has become acutely important. Without them the potential risks of the information economy could prevail over the advantages. The 1995 World Summit for Social Development addressed the social dimension of globalisation for the first time at the highest political level. The participating countries recognised that globalisation is too often accompanied by unemployment, poverty and social disintegration.

Due to the fact that flexible capital markets more and more elude national spheres of influence, MNCs are able to move production sites at short notice, producing in areas where the best overall conditions are found at the moment. While, on the one hand, the labour markets in high-wage countries are being threatened by competition from low-wage countries, the global race for the best locations for doing business most often results in disadvantages for workers in southern-hemisphere nations, since adequate labour laws rarely have been instituted in developing countries.

- A total of 10% of the value of goods traded internationally are produced under conditions violating basic labour rights. Child labour has come to entail some 250 million children worldwide.
- Across the globe, labour union activities are increasingly being suppressed.
- Each year approx. 2 million people the world over die as a direct consequence of their working activities, and about 12,000 of these are children (ILO, 16th World Congress on Health and Safety at Work).
- In China there are several hundred export-processing zones. Worldwide these zones employ 27 million people. In most countries national labour legislation does not apply to export-processing zones (OECD Observer, Oct. 2000).

Against the backdrop of this situation, international organisations and multilateral systems are assuming vital significance as points of reference for defining basic labour rights. These international instruments reflect an important canon of values which is fundamental for understanding codes of conduct as well as for the demands of those participating in the discussion of such codes.

In the preceding chapters, special topics related to e-work in the context of the global knowledge-based economy have been treated. While basic labour rights lie at the core of any definition of employee' rights, issues such as forced labour or child labour are hardly relevant for the target group of white-collar workers whom the global code for e-work addresses. Particularly in developing countries, knowledge workers more often belong to a privileged caste of employees. Basic labour rights are, nevertheless, of central importance for working conditions in the knowledge society. The present chap-

ter, therefore, discusses fundamental worker rights such as collective bargaining and the right to form unions, rights which even many employees in industrial countries do not take for granted. Thus, this chapter looks at examples of basic labour standards in general and of union rights in particular on the international level which may be considered for globally applicable labour regulations.

B.10.1 Union rights - the first social pillar of the global economy

Even in industrial nations, global competition is reinforcing the tendency to push labour standards down to a low level. The documentary film entitled "Secrets of Silicon Valley", for instance, portrays the extremely bad working conditions prevailing to a certain extent in Silicon Valley[14]. A far cry from e-hype and millions in venture capital, thousands of plain workers in the tech-delta grind away at their jobs for petty wages. Companies working under contract to well-known firms the likes of Hewlett-Packard and Cisco pay their warehouse staffs, packers and fork-lift drivers little more than $US 6.50 an hour. In Silicon Valley, with its ghastly living costs, wages like these are only enough to live at a subsistence level. One of the protagonists in this movie is Raj Jayadev, a temp-worker from India. Raj Jayadev is hired by Manpower Inc., one of the world's largest temporary employment agencies, to assemble Hewlett-Packard printers in a San Jose factory. When his paycheque is shorted, Raj successfully brings together workers to protest. Yet, when he raises safety and health issues, he is laid off for "stirring up trouble". According to more than a hundred interviews done for the documentation, Raj Jayadev's case is not unique. "It is common for companies in Silicon Valley to contract to temporary employment agencies in order to be able to manage staff as 'flexibly' as possible – which means being able to lay off hundreds of workers within minutes. Similarly, Jayadev's employer was not Hewlett-Packard but rather Manpower. Hewlett-Packard even denies maintaining factories here. Yet, the factory where Jayadev packed HP printers is located on HP property, while the building and security staff all belong to HP."[15]

In the light of telework, temporary employment and employment insecurity, the right to trade unions and to collective bargaining are generally taking on a more central role. Unions historically have been strong voices for equality in access to technology, and they can push the government and private sector towards easing the digital divide and making sound labour policies. The World Bank's World Development Report 1995, "Workers in an integrating world"[16] refers to the economic role of unions: "Trade union activities can be conducive to higher efficiency and productivity. Unions provide their

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14 Secrets of Silicon Valley Study Guide, http://www.secretsofsiliconvalley.org/studyguide.pdf (14-06-2002)

15 Spiegel Online, May 18, 2001, http://www.spiegel.de/netzwelt/netzkultur/0,1518,134610,00.html

16 ILO, http://www.ilo.org/public/english/standards/norm/whyneed/dev.htm (14-06-2002)

members with important services. At the plant level, unions provide workers with a collective voice. By balancing the power relationship between workers and management, unions limit employer behaviour that is arbitrary, exploitative, or retaliatory. By establishing grievance and arbitration procedures, unions reduce turnover and promote stability in the work force - conditions which, when combined with an overall improvement in industrial relations, enhance workers' productivity."

However, in the knowledge-based economy unions often have no easy time. The reasons for low trade-union representation in the knowledge economy are manifold:

- Unlike the tayloristically organised production of goods, in the knowledge-based economy companies must rely on their employees' knowledge. Agreements on objectives and accompanying evaluation have taken the place of observing performance. In carrying through this management concept, it is often suggested that employers and employees share the same interests. This gives way to the illusion that unions or rights to collective decision-making and representation are superfluous. According to a study done by the Austrian Institute for Empirical Social Research (IFES, quoted in Mum 2002), two-thirds of all those interviewed working in the "new economy" complain of a dearth of security provisions with respect to social situation and labour rights in their working contracts as well as a lack of rights to participate in company decisions.

- A fundamental change of present-day collective bargaining comes from the trend towards individualisation of the determination of terms and conditions of employment, which has been revealed in CSI interviews. Employers may see no reason to do otherwise, particularly when their employees do not demonstrate active interest in collective representation. They may see it as a way of rewarding individual merit and skills, and in attracting high-quality recruits. Some human resource management techniques may indeed encourage this approach as the most appropriate way of promoting enterprise competitiveness. On the other hand, such individualisation brings back into play the inherent inequality of the employment relationship with the attendant risk of depressing terms and conditions of employment, as well as opening the way to possible discriminatory or arbitrary treatment.

- Despite the shortage of skilled IT workers, among IT workers themselves there is hardly any awareness of the need to collectively stand up for their rights. Indeed, the profile of the typical ICT worker diverges in some respects from that of the traditional trade union member. For example, one interviewee, an employee representative at an Austrian IT company, observed that a) the low rate of union membership and b) the self-attitude of being omnipotent among IT workers in general lead to many individuals interpreting union support during collective bargaining and

for regulating other issues at the workplace as a sign of personal weakness and thus to rejecting such support.

- Generally, conditions for employees in the knowledge-based economy are heterogeneous, displaying characteristics that make it difficult to organise workers according to traditional union categories. The job of a call-centre agent, calling forth associations with piece or assembly-line work, is substantially different from the journalistic task of an online editor or the activities of an engineer in a telecommunications company, a systems administrator within an insurance conglomerate or a webmaster working for a publishing house. Yet some examples show that even heterogeneous groups of knowledge workers are being reached by labour unions. One such initiative is the "IT Worker Interest Group" founded by the Austrian Union of Salaried Employees.

Case study: union interest group for IT workers

work@IT is an interest group for individuals working in the field of information and communication technology. We are a grass-roots democratic, labour-union platform for high-tech workers from all lines of business. Among our members are programmers, technicians, authors and content providers, network administrators, developers, artists and web designers, webmasters, software testers, project managers, customer service representatives, telecommunications specialists, media observers and many more. From employees to so-called atypically employed persons, such as work and service contractors and contract workers, and to self-employed individuals with a trading license but no employees of their own, our members represent the diversity of the "new economy". Even those not belonging to a trade union can register without cost in order to become better acquainted with our services. The work@IT interest group is a union portal for IT employees to exchange experiences, communicate and network. We offer you support in articulating and getting action on your concerns and demands within the working world as well as on the policy-making level and in the media.

Source: http://www.interesse.at/it/

a) International Labour Organisation

The ILO has adopted more than 180 Conventions and 185 Recommendations referring to labour standards. At the ILO's 75th anniversary in June 1998, the adoption of the *Declaration on Fundamental Principles and Rights at Work* was launched, obliging all of the 175 member States, even those that have not ratified the relevant conventions, to promote and realise the principles pertaining to the fundamental rights in the ILO Convention, merely by virtue of their membership in the ILO. As was the case with all other ILO instruments, governments, industrial associations and trade unions were consulted during wording of the declaration. The core labour standards as identified by the Copenhagen Summit are: [17]

- Freedom of association (No.87) and the effective recognition of the right to collective bargaining (No. 98)
- Elimination of all forms of forced or compulsory labour (No. 29 and No. 105)
- Elimination of discrimination in respect of employment and occupation (No. 111) and gender specific remuneration (No. 100)
- Elimination of child labour (No. 182) and minimum age (No. 138).

Full text of "Freedom of Association and Protection of the Right to Organise Convention", 1948

Part I. Freedom of Association

- Article 1: Each Member of the International Labour Organisation for which this Convention is in force undertakes to give effect to the following provisions.
- Article 2: Workers and employers, without distinction whatsoever, shall have the right to establish and, subject only to the rules of the organisation concerned, to join organisations of their own choosing without previous authorisation.
- Article 3: (1) Workers' and employers' organisations shall have the right to draw up their constitutions and rules, to elect their representatives in full freedom, to organise their administration and activities and to formulate their programmes. (2) The public authorities shall refrain from any interference which would restrict this right or impede the lawful exercise thereof.
- Article 4: Workers' and employers' organisations shall not be liable to be dissolved or suspended by administrative authority.
- Article 5: Workers' and employers' organisations shall have the right to establish and join federations and confederations and any such organisation, federation or confederation shall have the right to affiliate with international organisations of workers and employers.

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17 http://www.ilo.org/public/english/standards/index.htm

- Article 6: The provisions of Articles 2, 3 and 4 hereof apply to federations and confederations of workers' and employers' organisations.
- Article 7: The acquisition of legal personality by workers' and employers' organisations, federations and confederations shall not be made subject to conditions of such a character as to restrict the application of the provisions of Articles 2, 3 and 4 hereof.
- Article 8: (1) In exercising the rights provided for in this Convention workers and employers and their respective organisations, like other persons or organised collectivities, shall respect the law of the land. (2) The law of the land shall not be such as to impair, nor shall it be so applied as to impair, the guarantees provided for in this Convention.
- Article 9: (1) The extent to which the guarantees provided for in this Convention shall apply to the armed forces and the police shall be determined by national laws or regulations. (2) In accordance with the principle set forth in paragraph 8 of article 19 of the Constitution of the International Labour Organisation the ratification of this Convention by any Member shall not be deemed to affect any existing law, award, custom or agreement in virtue of which members of the armed forces or the police enjoy any right guaranteed by this Convention.
- Article 10: In this Convention the term organisation means any organisation of workers or of employers for furthering and defending the interests of workers or of employers.

Part II. Protection of the Right to Organise
- Article 11: Each Member of the International Labour Organisation for which this Convention is in force undertakes to take all necessary and appropriate measures to ensure that workers and employers may exercise freely the right to organise.

Full text of "Right to Organise and Collective Bargaining Convention", 1949
- Article 1: (1) Workers shall enjoy adequate protection against acts of anti-union discrimination in respect of their employment. (2) Such protection shall apply more particularly in respect of acts calculated to — (a) make the employment of a worker subject to the condition that he shall not join a union or shall relinquish trade union membership; (b) cause the dismissal of or otherwise prejudice a worker by reason of union membership or because of participation in union activities outside working hours or, with the consent of the employer, within working hours.
- Article 2: (1) Workers' and employers' organisations shall enjoy adequate protection against any acts of interference by each other or each other's agents or members in their establishment, functioning or administration. (2) In particular, acts which are designed to promote the establishment of workers' organisations under the domination of employers or employers' organisations, or to support workers' organisations by financial or other means, with the object of placing such organisa-

tions under the control of employers or employers' organisations, shall be deemed to constitute acts of interference within the meaning of this Article.

- Article 3: Machinery appropriate to national conditions shall be established, where necessary, for the purpose of ensuring respect for the right to organise as defined in the preceding Articles.

- Article 4: Measures appropriate to national conditions shall be taken, where necessary, to encourage and promote the full development and utilisation of machinery for voluntary negotiation between employers or employers' organisations and workers' organisations, with a view to the regulation of terms and conditions of employment by means of collective agreements.

For promoting core labour standards ILO seeks to assist the efforts made by members through

a) supervisory mechanism: members have to present a report on steps taken to implement the conventions regularly every two to five years. Complaints can be initiated by ILO members, including employers' and workers' organisations, and can lead to the establishment of a Commission of Inquiry with the purpose of carrying out recommendations.

b) A yearly reporting requirement by which non-ratifying countries have to indicate the steps they have taken to promote the principles of the fundamental conventions. Employer and worker groups can provide comments on the national reports.

c) In the case of violations the ILO favours, instead of sanctions, technical assistance encompassing advice on legislative reform, capacity-building of regulators and administrators and training government officials, to strengthen the capacity of the tripartite constituents (cf. Eva Dessewffy, presentation at a symposium on April 25 and 26, 2002, Linz, Austria).

b) OECD Guidelines for Multinational Enterprises

Adopted in June 2000 by the OECD Ministers, the *OECD Guidelines for Multinational Enterprises* also contains provisions on work and employment. Although not binding, they are supported by OECD member governments of countries from which most MNCs originate. The Guidelines provide voluntary principles and standards for responsible business conduct in fields of employment, industrial relations, human rights, environment, information disclosure, competition, taxation, and science and technology.

With respect to social issues, the Guidelines are in line with the fundamental ILO conventions. Among the comprehensive recommendations for putting the principles into practice are found the suggestions to: translate the principles into individual national languages; make them available through the Internet and, above all, draw investors' attention to them; and nurture the dialogue with employers' associations, trade unions and NGOs. Not adhering to the principles potentially implies that government agencies

will take action. In cases when the principles are violated, National Contact Points serves as mediators between the parties to a conflict.

Full text of the OECD Guidelines for Multinational Enterprises referring to union rights[18]

IV. Employment and Industrial Relations; Enterprises should...

1. a) Respect the right of their employees to be represented by trade unions and other bona fide representatives of employees, and engage in constructive negotiations, either individually or through employers' associations, with such representatives with a view to reaching agreements on employment conditions.

2. a) Provide facilities to employee representatives as may be necessary to assist in the development of effective agreements. b) Provide information to employee representatives which is needed for meaningful negotiations on conditions of employment. c) Promote consultation and co-operation between employers and employees and their representatives on matters of mutual concern.

3. Provide information to employees and their representatives which enables them to obtain a true and fair view of the performance of the entity or, where appropriate, the enterprise as a whole.

5. In their operations, to the greatest extent practicable, employ local personnel and provide training with a view to improving skill levels, in co-operation with employee representatives and, where appropriate, relevant governmental authorities.

6. In considering changes in their operations which would have major effects upon the livelihood of their employees, in particular in the case of the closure of an entity involving collective lay-offs or dismissals, provide reasonable notice of such changes to representatives of their employees, and, where appropriate, to the relevant governmental authorities, and co-operate with the employee representatives and appropriate governmental authorities so as to mitigate to the maximum extent practicable adverse effects. (...)

7. In the context of bona fide negotiations with representatives of employees on conditions of employment, or while employees are exercising a right to organise, not threaten to transfer the whole or part of an operating unit from the country concerned nor transfer employees from the enterprises' component entities in other countries in order to influence unfairly those negotiations or to hinder the exercise of a right to organise.

8. Enable authorised representatives of their employees to negotiate on collective bargaining or labour-management relations issues and allow the parties to consult on matters of mutual concern with representatives of management who are authorised to take decisions on these matters.

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18 http://www.oecd.org/pdf/M000015000/M00015419.pdf

c) UN Global Compact

Basic labour rights are explicitly mentioned in a more binding charter, the United Nations Human Rights Convention. The initiative UN Global Compact launched by business, labour and civil society in June 2000 promotes and applies nine voluntary principles derived from international instruments to advance human rights, labour and environmental standards. This is a voluntary initiative aiming to serve as a "value-based platform designed to promote institutional learning".

In the field of labour, enterprises are asked to "demonstrate global leadership by upholding the values that lie at the heart of decent work. These principles help build constructive relations in the workplace and the community, as well as create more stable investments. Enterprises will realise benefits in terms of productivity, improved reputations and co-operative working environments, all of which can improve the bottom line" (Commission of the European Communities 2001: 10). "Several hundred" companies have already committed themselves to internalising the Global Compact.

Full text of UN Global Compact, Principle 3: freedom of association and the effective recognition of the right to collective bargaining[19]
Establishing and joining organisations are essential aspects of freedom of association. The principle applied in the workplace means that both workers and employers can establish and join organisations to represent their interests. These organisations are free to affiliate with national and international counterparts. Activities involved in establishing and joining organisations include drawing up constitutions and rules, selecting representatives in full freedom, organising administration and activities, and formulating programmes. Bargaining collectively on conditions of work is key to effective functioning of the relationship between workers and their organisations, and employers and/or their organisations, and is the expression in practice of freedom of association in the world of work. Recognising, on both sides of the table, the duty to bargain in good faith and make every effort to come to an agreement builds trust and productive workplace relations. An integral component of this principle involves industrial action by workers and their organisations to promote and defend their economic and social interests.

d) WTO

At Singapore in December 1996, WTO members renewed their commitment to the observance of internationally recognised core labour standards. The WTO Ministerial Conference in Doha, Qatar on November 14, 2001 expressly commissioned the member states with including the issue of trans-national employment into negotiations.

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19 http://www.unglobalcompact.org/

e) European Commission

Since the early years of the European Community, respect for labour standards is a substantial element of Community legislation, ranging from standards on health and safety to equal opportunities and non-discrimination at work. At the Nice Council in December 2000, the EU endorsed a social policy agenda which promotes the concept of quality in employment, in industrial relations, and in working conditions. The ILO's eight fundamental conventions have been ratified by all EU Member States. Due to the growing importance of adapting working conditions to the new economy and the need for greater coherence and transparency with regard to private initiatives like codes of conduct and social labels, the EC launched a Green Paper on promoting a European framework for Corporate Social Responsibility in July 2001.[20]

As a reaction to differences among the voluntary codes of conducts and because a means of external verification has been lacking, two other instruments worthy of mention have been developed: SA 8000 und the Global Reporting Initiative.

f) SA 8000

Social Accountability International (SAI), founded in 1997 as the Council on Economic Priorities Accreditation Agency (CEPAA), has developed standards for independently auditing to what degree companies adhere to codes. The SA8000 norm consists of various social standards, relevant for employment, which human rights experts consider integral to social auditing.

Full text of the SA8000 norm concerning "Freedom of Association and Collective Bargaining"[21]
- 4.1 The company shall respect the right of all personnel to form and join trade unions of their choice and to bargain collectively.
- 4.2 The company shall, in those situations in which the right to freedom of association and collective bargaining are restricted under law, facilitate parallel means of independent and free association and bargaining for all such personnel.
- 4.3 The company shall ensure that representatives of such personnel are not the subject of discrimination and that such representatives have access to their members in the workplace.

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20 http://europa.eu.int/comm/employment_social/soc-dial/csr/greenpaper.htm (10-05-2002)

21 http://www.cepaa.org/

g) Global Reporting Initiative

Based on the triple bottom line for harmonising companies' reporting principles, the Global Reporting Initiative (GRI) also relies on high standards for social reporting in the area of labour standards.

Full text of the GRI concerning to reported contents referring to "Freedom of Association"[22]

- 6.82 Staff forums and grievance procedures in place – percentage of facilities and countries of operation.
- 6.83 Number and types of legal actions concerning anti-union practices.
- 6.84 Organisational responses to organising at non-union facilities or subsidiaries.

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[22] http://www.globalreporting.org/GRIGuidelines/

Comparison of voluntary codes of conduct

Comparing the approaches to social regulation of labour standards mentioned above, the following table provides an overview of the different areas of regulation covered by the individual initiatives.

Table B.10.1 Comparison of voluntary codes of conduct

	ILO	OECD	Global Compact	SA8000	GRI
Kind of code	Voluntary Guidelines	Recommendations	value-based platform	Voluntary standard	Voluntary standard
Geographical coverage	Global	Whereever OECD Firms operate	Global	Global	Global
Sectoral coverage	All	All	All	All	All
Respresentation in the code:					
States	yes	yes	yes	no	yes
Workers	yes	yes	?	yes	yes
NGOs	no	no	?	yes	yes
Industry	yes	no	yes	yes	yes
Independent monitoring	no	no	recommended	yes	recommended
Refers to ILO core conventions	yes	no	yes	yes	yes
Health & safety	yes	no	yes	yes	yes
No forced labour	yes	no	yes	yes	yes
Hours of work	yes	no	?	yes	?
Minimum age	yes	no	yes	yes	yes
Wages (*living)	yes	no	yes*	yes*	yes
Freedom of association	yes	yes	yes	yes	yes
Collective bargaining	yes	yes	yes	yes	yes
No discrimination	yes	yes	yes	yes	yes
Equal remuneration	yes	no	yes	yes	yes

Source: Pearson and Seyfang (2001), compliments of CSI

## B.10.3 The role of trade unions with respect to codes of conduct

Codes of conduct should be based on conventions and principles of international or-ganisations, "involving social partners and those in developing countries covered by them", in order to improve labour standards on an international level (European Com-

mission 2001b, Green paper on CSR). But many companies adopt codes of conduct without involving trade unions in any way. The findings of the OECD review on codes of conduct (OECD 2000: 13) show that only 30% of the 246 voluntary codes investigated mention respecting freedom of association and collective bargaining.

Also Benjamin, in her capacity as executive director of Global Exchange (USA), criticises that the original goal of codes, namely protecting workers in countries of operations, are hardly ever realised efficiently in practice. "In the South many workers' rights groups see codes as a justification for not doing anything substantive, as a smoke screen. They think codes have never been disseminated in a serious way to workers and that often they are not just meaningless, but actually harmful because they give companies cover." (Carnegie Council on Ethics and International Affairs, 2000, Series 2 No. 4) From her experiences in visiting many firms around the world she addresses criticism toward private companies codes, stating that many codes do not include freedom of association, nor does even one workplace code call for minimum wages covering living costs or prohibit gender discrimination.

Figure B.10.1 Voice regulation and representational security
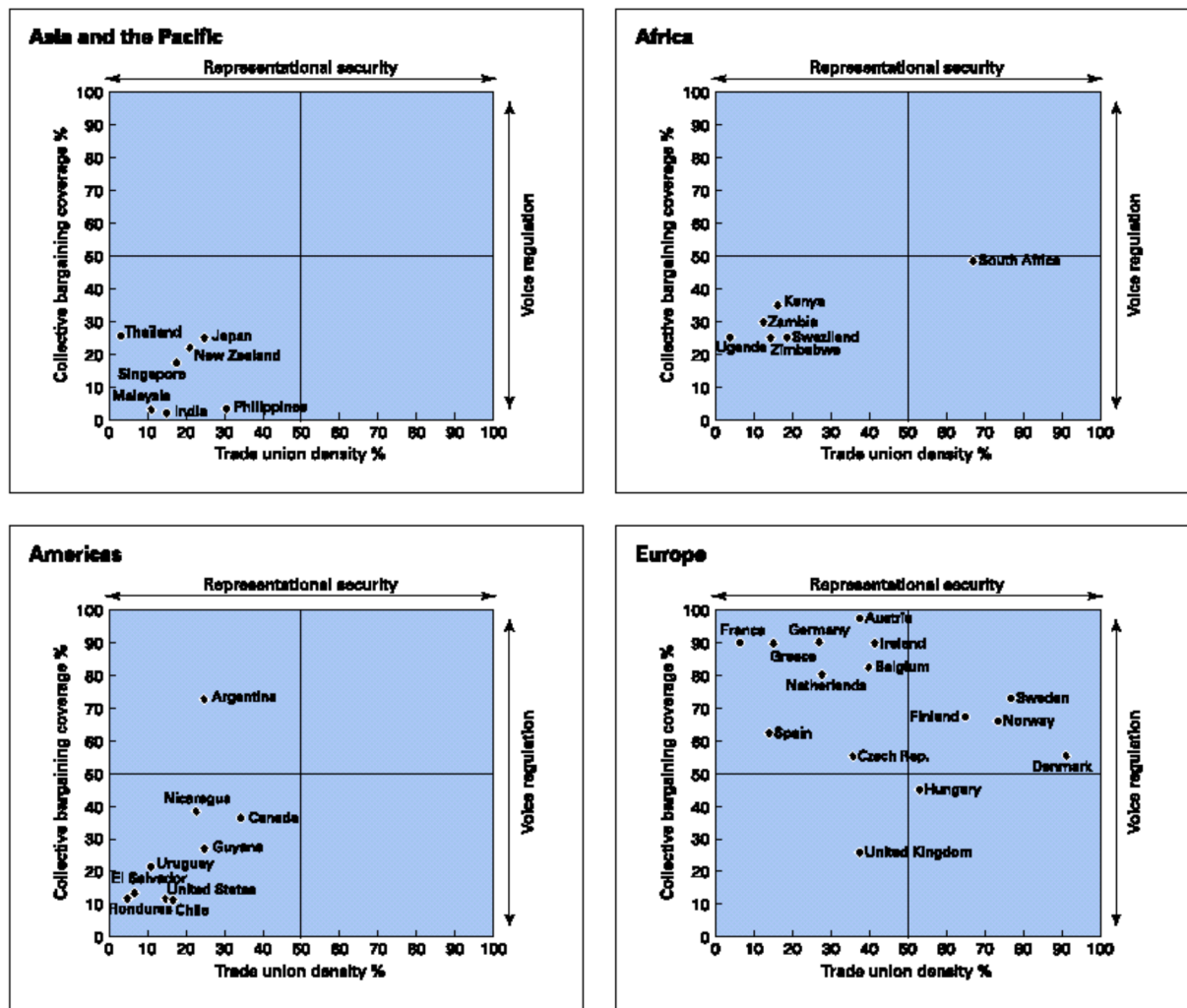
Source: InFocus Programme on the Declaration, based on data from ILO: *World Labour Report 1997-98* (Geneva,1997) and *Country studies on the social dimensions of globalization*. Task Force on Country Studies on Globalization (Geneva, ILO, publication forthcoming).

Source: ILO Report I (B), 2000: 20

The low density of trade union organisation in many countries makes it unrealistic to insisting that codes must always be negotiated with trade unions. The international scope of the codes within the globalised economy makes it questionable whether it is either practicable or appropriate for national trade unions to seek to negotiate codes with international scope. Instead of becoming a party to a signed agreement, trade unions can:

- avoid complications by seeking to advise companies on appropriate code content and implementation;

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- insure that the link between exploitation and abuse of workers on the one hand, and the oppression of workers on the other, is understood and reflected in the code;
- take the central role in implementation and verification of codes on a permanent basis; no one process scheme and audit scheme are as effective as observations made by workers' representatives during daily working life (interview with Eva Angerler, GPA)

Although in some countries trade unions are underrepresented or even prohibited, companies have nevertheless opportunities for establishing participative forms of elected consultative committees. Trade union experience[23] shows that, even under dictatorship, workers have been able to create or enlarge the space for trade union organising and collective bargaining with some employers. This was the experience in Chile, Korea, Poland, South Africa and Turkey while these countries were dictatorships. Companies respecting human rights should therefore be alert to the possibilities of creating and enlarging the space for workers' self-organisation. "Worker empowerment is and always has been the most enduring way to end poverty and correct abusive workplace conditions. (...) To empower workers we must open space for workers to organise democratic unions, independent of government or employer dominant. The right to form unions is not simply one of many codes that need to be sought: It is the primary one " (Banks 2000:12)

B.10.4 Some formulations from existing codes of conduct

Svenska Handelsbanken, Social responsibility at Handelsbanken:
Handelsbanken does not conduct business with any country on The Observer's Human Rights Index, that is, those countries that have the worst record in the area of human rights according to Amnesty International.
Working conditions and union rights: Handelsbanken complies with the laws and agreements on working hours in each country. In the Nordic countries, where 95% of the Bank's employees work, Handelsbanken adheres to the collective bargaining agreements which clearly regulate working hours, overtime, rest periods, breaks and vacations. The Handelsbanken Group has established a fixed set of employee rights throughout the Group, such as minimum wage. Child labour is not accepted at Handelsbanken. All employees in the Handelsbanken Group have the right to organise and join a union. Employees are represented in the central Board of Directors through the profit-sharing foundation Oktogonen. Employee representatives are also found on the Boards of Directors of the regional banks. At Handelsbanken, all individuals with the

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[23] International Confederation of Free Trade Unions.
http://www.icftu.org/displaydocument.asp?Index=991209382&Language=EN (13-06-2002)

same competence have the same right to employment, promotion, salary and professional development regardless of gender, age, ethnic background or sexual orientation.

Nokia, code of conduct:

Human Rights: Nokia will respect and promote human rights. Nokia recognizes, with the international community, that certain human rights should be considered fundamental and universal, based on accepted international laws and practices, such as those of the United Nations' Universal Declaration of Human Rights, International Labour Organization and Global Compact principles. Among those rights that Nokia views as fundamental and universal are: freedom from any discrimination based on race, colour, sex, language, religion, political or other opinion, national or social origin, property birth, age, or other status; freedom from arbitrary detention, execution or torture; freedom of peaceful assembly and association; freedom of thought, conscience and religion; and freedom of opinion and expression. Nokia will not use child or forced labor, or tolerate working conditions or treatment that is in conflict with international laws and practices.

LIST OF INTERVIEWS

With experts

Eva Angerler, Co-Worker of Department for Work and Technique at the *Private Employees' Trade Union (GPA)*, Austria

Bernhard Feuling, Chair of Work Council at Freudenberg Group, Germany

Christian Frey, Certified Project Manager at Austrian Airlines, Austria

Liselotte Griesmayer–Lopez, Managing Director at Christian Solidarity International /CSI, Austria

Paul Kolm, Department Manager for Work and Technique at the Private Employees' Trade Union (GPA), Austria

Martina Molnar, Managing Director at humanware, Austria

Michaela Reeh, CSR at OMV

With e-workers

Herbert Aigner, System LI-OS at Siemens AG, Austria

Dominque Feugier, Staff Member at UNIDO, Austria

Erwin Kößldorfer, Software Development at Siemens AG, Austria

Rolf Nagel, Member of Work Council at Siemens AG, Austria

Peter Neschen, Information Technology&Networking at Siemens AG, Austria

Robert Sabaj, Department Manager at PSE- International, Slovakia

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