

VALUE CHAIN RESTRUCTURING

Value chain restructuring and
company strategies to reach
flexibility

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1 Introduction¹

Flexibility is one of the most important issues both in the debate on organisational change and in the analyses of work and employment. The main focus has always been on the organisation and its capacity to increase adaptability and responsiveness in view of versatile markets and shifting consumer demands. Organisational flexibility, in turn, is usually seen to lie mainly in the flexible use of personnel in numerical or functional terms. With the spread of companies' flexibility strategies this issue has become one of the most important factors influencing the quality of work.

The model of the flexible firm (Atkinson, 1984: 4-5) is the most prominent example of concepts trying to show how a company's flexibility is reached through personnel strategies. The model brings together the features of internal labour markets and a company's relation to the external labour market. A stable, highly-skilled and committed core work force is said to provide functional flexibility while the peripheral work force with low employment security allows for numerical flexibility. While functional flexibility means a firm's ability to adjust and deploy the skills of its employees to match changing tasks, numerical flexibility is a firm's ability to adjust the level of labour inputs (NEDO, 1986). The model thus conceptualises a division of the work force in mainly two groups and assigns to these different roles for achieving organisational flexibility. The groups are clearly distinguished according to levels of skills and commitment. In addition, there is an interrelation between the two in a way that all employment risks are massed with the peripheral workers thus sheltering the core workers.

During twenty years of debate only little evidence has been produced to support the model (Pollert, 1991; Kalleberg, 2001). Yet the distinctions between numerical and functional and the one between internal and external flexibility (Vickery & Wurzburg, 1996) are still common practice: 'numerical' flexibility indicates the variability of the volume of workers or working hours deployed according to current needs and 'functional' flexibility the variability in the functions performed by the workers; strategies to reach flexibility are 'internal' or 'external', depending on whether the variability is achieved within the boundaries of the company and its work force or through contractual exchanges with organisations or individuals outside the company.

There are several problems linked with the debate. First, it concentrates on labour and equates organisational flexibility with the flexible use of personnel while neglecting other ways to reach flexibility, *e.g.* through organisational change, use of technology *etc.* (Procter, 2005; Flecker, 2005a). Indeed, it may be worth looking at the cognitive and systemic tradition in organisational theory which conceives of flexibility as a response to an

¹ The authors would like to thank all WORKS partners for providing the valuable research material this report is based on. We are also indebted to Pamela Meil (ISF) and Monique Ramioul (HIVA-K.U.Leuven) for the very helpful comments they gave us during the internal peer review process.

inherent dilemma for organisations. Increasing responsiveness to changing and volatile environments, or devoting resources to uncertain ends such as innovation requires organisational slack (Thompson, 1967) which is at odds with the aims of efficiency and complexity reduction (Carlsson, 1989; Kühl, 1995; Luhmann, 2000). Flexibility in terms of internal differentiation of a core and a periphery, the use of flexible employment or networked production (Piore & Sabel, 1984; Powell, 1990) promises solutions to the dilemma which limit the amount of necessary slack and maintain competitiveness. However, such solutions increase complexity and may end up redistributing rather than eliminating the costs and benefits of flexible production. Second, in spite of including external forms of flexibility the flexible firm model is limited to the analytical level of the organisation neglecting the level of networks and inter-firm relations that have become more and more important for the analysis of organisations and work (Sauer & Altmann, 1989; Benner, 2002). The production of goods and increasingly also of services is a result of interorganisational relations. And the arrangements between companies within value chains and networks are as important for the achievement of flexibility as the flexible organisation of the individual firms (Procter, 2005: 475). Third, the focus on the organisation and its employment relations neglects the wider picture of labour market segmentation with its systematic differentials in employment and working conditions. Value chains span different segments because core companies aim to cut costs and increase flexibility.

In this report organisational and employment flexibility are analysed from a value chain perspective combining the level of the organisation and its relationships with its workers on the one hand and the level of inter-organisational arrangements on the other. It looks at the forms of flexibility that are aimed at through the restructuring of value chains and at the consequences of such restructuring for the flexible use of personnel within the organisations and for the quality of work. It draws on findings from the research within the WORKS project mainly in the areas of externalisation strategies, work organisation, working hours and employment relations in selected economic sectors. The first chapter describes the project and the applied research methods while the main part of the report summarises the research findings on different aspects of organisational and employment flexibility.

2 The background: research in the WORKS project

It is generally agreed that major upheavals are taking place in the organisation of work as corporate structures are transformed in the context of economic globalisation and rapid technological change. But how can these changes be understood? And what are the impacts on social institutions and on workers? The 'Work organisation restructuring in the knowledge society (WORKS)' project was funded by the European Commission in 2005 under its 6th Framework Programme to investigate these questions. With partners in seventeen different institutions in fourteen EU Member States, this ambitious research project has combined theoretical work and a detailed analysis of a wide range of statistics with in-depth case studies to analyse the forces that bring about these changes, including global value chain restructuring and the policy environment.

One of the underlying assumptions of the WORKS project is that the reorganisation of work can only be understood fully in the context of a global restructuring of value chains, entailing a simultaneous decomposition and recomposition of sectors, organisations, labour processes and skills. However, the considerable heterogeneity within Europe of skill supply, levels of employment, welfare systems, and economic sectors makes it especially difficult to disentangle the causes and effects of such processes and to isolate the primary drivers of change. Yet it is particularly important for Europe both to understand the factors that will enable firms to sustain their competitive edge, to ensure a future supply of jobs that is satisfactory both quantitatively and quality and to examine the impact of these changes on the quality of life. At the heart of this is a single issue: how are employment practices adapting to change and with what effect? If we can answer this more effectively on a Europe-wide basis we will be able to propose practical solutions to real problems.

Starting in June 2005, the WORKS consortium, involving partners from seventeen different institutes across fourteen EU Member States, carried out an ambitious programme of theoretical and empirical work. These were carried out under five main pillars: 'theories and concepts', 'quantitative research', 'policy', 'qualitative research on organisations' and 'qualitative research on individuals'. The work of these pillars is summarised more fully below.

This is one of eleven thematic reports that brings together the results of all five pillars to deepen our insights into the topic of value chain restructuring and organisational and employment flexibility.

The other reports will focus on the topics of: value chain restructuring in Europe in a global economy; changes in work organisation and representation at the workplace; skills and qualification policies and HRM; new career trajectories and biographies; changing gender and ethnic relations in the workplace; working time, gender and work-life balance; change processes and future perspectives; changes in work in transitional economies;

health, safety and the quality of working life; and employers' use of technology and the impact on organisational structure.

The material on which this report draws is summarised below.

2.1 Theories and concepts

In the first stage of its work the WORKS partners collectively carried out a review of the very large body of literature with relevance to the project's research questions, in order to map the field, formulate hypotheses to be tested in the empirical work and develop a clear conceptual framework for the research. This was no easy task. There are many lenses through which one can view the restructuring of work in a global knowledge economy. There are the lenses of different academic disciplines, for instance the sociology of work, economic geography, organisational theory, social psychology, ethnography, gender studies, industrial relations or political science. Then there are the lenses of different social perspectives, for instance those of international development agencies, of national governments in developed and developing countries, of technology providers, of statisticians, of employers, of trade unions, of educators, of civil society, of skilled professional workers who are may be beneficiaries of change, and of those groups that are potential losers. There are also differences deriving from different national research traditions, different ideological approaches and many other variables. In each of these many fields, a body of literature has grown up, trying to make sense of the changes taking place and supplying fragments of evidence. Piecing all this evidence together was a major challenge. The very disparity of the origins of this literature means that it is difficult to find a common frame of reference. Even when the same terms are used, they may be used with different meanings and the lack of commonly-agreed definitions can make the refracted pieces of evidence difficult to compare, often giving them a contradictory and anecdotal character.

Nevertheless, in its first six months, the project managed to bring together in a single report (Huws, 2006) a remarkably comprehensive overview of the available evidence, thanks to the large collective efforts of the interdisciplinary WORKS team. This evidence was carefully sifted with the aim of distilling insights that could help to produce a clear conceptual framework in order to develop hypotheses and research questions to guide the empirical research to be undertaken by the WORKS project. This programme of work was, however, highly ambitious, encompassing the aims of: improving our understanding of the major changes in work in the knowledge-based society, taking account both of global forces and of the regional diversity within Europe; investigating the evolving division of labour within and between companies and the related changes at the workplace; exploring the implications for the use of skills and knowledge, for flexibility and for the quality of working life; and examining the impact on occupational identities; time use and learning; as well as the impact on the social dialogue and the varieties of institutional shaping. Balancing the need to take account of these many dimensions whilst still retaining a focus on clear research questions that could be addressed feasibly within a coherent research design in a relatively short space of time was a major challenge, and we begin by presenting the methodology that was adopted to achieve this.

The first task was to achieve a division of labour that on the one hand took full advantage of the specialist subject expertise of partners whilst also recognising the diversity of national research traditions across Europe and the need to take account of the literature in

all major European languages. Once topics had been assigned to partners, in a second stage, these partners were asked to produce a list of 'key concepts' for inclusion in a glossary.² The purpose of the glossary was to ensure that all partners could share a common understanding and make visible any differences of interpretation or definition of key terms so that they could be discussed and agreed, in a process whereby, in its contribution to the cohesion of the whole group, the dialogue involved in producing the entries was as valuable as the end result. The next stage involved the production of draft reports covering the main concepts and the associated literature. Despite the authors' broad knowledge of their chosen topics, and the fact that each report included inputs from institutes in more than one country, it was felt that the only way to ensure that each report covered the full range of relevant European scholarship was to add a further, vital stage in the work. This involved circulating each draft report as it was completed to all the other WORKS partners, including those who had not been involved in the actual process of report-writing. In this stage, partners were asked to draw on their knowledge of the literature in their own language or national setting, as well as their specific subject knowledge, to comment on the reports, point to issues that might be regarded as contentious and add references to relevant sources. This process of peer review enriched and refined the report which was then used by all partners as an input to the development of research questions, methodologies and research instruments for the empirical research.

2.2 Quantitative research

The 'quantitative research' pillar of the WORKS project studied the changes in work in Europe on the basis of comparative analyses of data from existing organisation and individual surveys. In a first step, major European organisation surveys and individual and household surveys relevant for changes in work were mapped and benchmarked in order to assess their relevance and their strengths and weaknesses for comparative analyses on changes in work. Next, and more important for the thematic reports, the research focused on the secondary analysis of the results of the organisation and individual/household surveys. For the organisation surveys, a thematic analysis of thirteen major national and international organisation surveys, focusing on the major results with respect to the key issues of the WORKS project, resulted in an overview report 'Comparative analysis of organisation surveys in Europe' (Ramioul & Huys, 2007). The key issues addressed in this report are:

- new forms of work organisation, organisational and technological innovation, changes in work. Here in particular some findings with respect to skill-biased organisational change and the role of employee involvement and participation are relevant;
- changes in skills and qualification and vocational training policies at establishment level;
- work-life balance and working time arrangements. Here conclusions from EU wide research on working time arrangements and flexibility policies are of particular interest;
- quality of the working life as measured in organisation surveys.

² Available on-line on http://www.worksproject.be/Glos_and_defint.htm.

For each of these issues, the most relevant conclusions from the organisation surveys were summarised, thus leading to a comprehensive overview of organisational changes in Europe based on this particular data source.

For individual surveys, three major sources of individual and household data made it possible to carry out longitudinal and EU comparative analysis on the issues relevant for the WORKS project: the Community Labour Force Survey (CLFS); the European Working Conditions Survey (EWCS) and the European Community Household Panel (ECHP). Based on these three key data sources, four different reports were published, each focusing on the EU comparative analysis and on the identification of trends with respect to key WORKS issues. The reports focused on the following issues:

- tracing employment in business functions: a sectoral and occupational approach: in this report an innovative method was used to measure changes in employment related to value chain restructuring;
- trends in work organisation and working conditions. For this report, three waves of the European Working Conditions Survey were analysed in a longitudinal and EU comparative perspective, shedding light on changes in task complexity, autonomy, working time independency, health and safety issues and working conditions;
- work flexibility in Europe: a sectoral and occupational description of trends in work hours, part-time work, temporary work, and self-employment was carried out based on this important European data source;
- occupational change in Europe: based on longitudinal data, aspects of work satisfaction, occupational mobility and overqualification were investigated.

2.3 Qualitative research on organisations

The organisational case studies within the WORKS project covered a number of generic business functions that represent a wide variety of activities and labour processes in the 'knowledge society' ranging from highly-skilled 'knowledge work' to semi-skilled manual tasks. The research also aimed to focus on those business functions that feature prominently in the external restructuring of companies and thus in the restructuring of global value chains. The selected business functions were: research and development, production, logistics, customer service and information technology.

To study the restructuring of value chains these business functions need to be located in specific sectors. The selection of sectors reflected the emergence of global value chains in different historical stages: sectors where vertical disintegration and internationalisation is already a rather old fact, and sectors where these have developed only very recently. The sectors under study were:

The *clothing industry* is an example of an 'old' industry where restructuring of global commodity chains was already an issue in the 1970s. Recently, the integration of Central and Eastern Europe in pan-European production networks and the phasing out of the Multi-Fibre Arrangement and the WTO Agreement on Textiles and Clothing considerably changed the trade regimes and resulted in a new wave of restructuring mainly affecting production in Southern Europe and the CEE countries. This sector also provides interesting examples of 'head and tail' companies which concentrate high-skilled work within Europe but carry out the rest elsewhere.

The *food industry* is the largest manufacturing sector in terms of employment in the EU. It was subject to major restructuring after the completion of the single market in the European Union in the early 1990s which allowed companies to replace their country-by-country organisation with a pan-European structure. In contrast with parts of the clothing industry, food production is by and large highly automated. Both industries are interesting as examples of buyer-centered value chains in which the demands of the retail trade play a pivotal role.

The *IT industry* is a growing industry that saw a major wave of restructuring during and after the boom years in the late 1990s and around 2000, partly associated with offshoring. Internationally, this has contributed to the emergence of a ‘new breed of TNCs’, global companies that supply services to other companies. To a large extent the IT service provider companies have grown through large outsourcing contracts that include the transfer of personnel from their public or private sector client organisations, a tendency highly relevant for the research questions of WORKS.

Public sector organisations and *services of general interest* are currently subject to far-reaching restructuring because of liberalisation and privatisation policies and budgetary constraints. In these sectors the lengthening of value chains through large scale outsourcing is a very recent phenomenon. The consequences for the quality of work are highly-influenced by traditional differences in the regulation of work between the public and private sectors.

Each business function located in a particular sector was studied in a range of countries with diverse employment and welfare regimes (liberal, conservative, socio-democratic, etc.). This made it possible to analyse the influence of institutional frameworks on the consequences of restructuring. Overall, 58 case studies were conducted in fourteen countries. The following overview shows the distribution of case studies.

Table 2.1 Sample of case studies

	R&D/design	Production	Logistics	Customer service	IT
Textiles/clothing	BE; FR; DE; PT; IT	BE; IT; PT; HU; GR	FR; DE; NL; PT; HU		
Food		GR; BG; IT; NO; DK; UK	BE; NO; BG; GR; UK		
IT	DE; AT; UK; BE; FR; NO	DE; AT; HU; BG; SW			
Public sector administration				AT; BE; BG; HU; IT; UK; SW	BE; NL; UK; FR; DE; NO; SW; PT
Services of general interest: post and rail				DE; AT; SW; NL; GR	

For each case study, eight to ten interviews with management, key employees, and shop stewards (in the selected business functions) were conducted. The interviews were complemented by company documents and other material that made it possible to produce a comprehensive picture. Researchers in the respective countries synthesised the individual case studies from the interview data. On the basis of the individual case study reports,

comprehensive comparative analyses were carried out to compose this report. The authors of the report are deeply indebted to the researchers who carried out the case studies in the various countries and to the respondents who devoted their time to our research and helped us to understand the developments in their companies and sectors. For the presentation in this report, all company names have been changed to assure anonymity.

2.4 Qualitative research on individuals

The organisational case studies were complemented by case studies designed to investigate the impacts of changes at work on individuals and their households. Thirty of these occupational case studies were achieved in fourteen countries, between June 2006 and May 2007; in total 246 in-depth individual interviews were carried out, according to common interview guidelines elaborated in May 2006.

These occupational case studies are closely related to the organisational case studies that were carried out in a selected number of business functions, during the same time span. In the WORKS project, the concept of the 'business function' lies at the core of the qualitative empirical research, since these business functions provide the most useful unit of analysis for studying value chain restructuring and changes in work. In order to study changes in work at the individual level, individual workers were selected within specific occupational groups linked to key business functions.

Six occupational groups were selected: designers in the clothing industry; researchers in information and communication technology; IT professionals in software services; production workers in food or clothing; logistics workers in food or clothing; front office employees in customer relationships in public services. In each occupational group, three to seven case studies were conducted in different countries, covering a variety of socio-economic and institutional contexts. Each case study relied on seven to nine in-depth individual interviews, including a biographical dimension.

The analysis of the interviews was structured around five themes that grouped together the WORKS research questions. These were: career trajectory, occupational identity, quality of work, knowledge and learning, and work-life balance.

Particular attention was paid to gender issues. Gender was treated as a transversal theme in the analysis of changes in work at the individual level. The principle of gender mainstreaming (*i.e.* taking systematically into account the differentiated experiences of men and women in all items of data collection and analysis), formed one of the basic guidelines for the individual interviews.

2.5 The policy pillar

A central task in WORKS is to examine what effect policy initiatives and regulation at various levels – international, European, national, regional, sectoral and company – actually have on work life and work experience. Especially relevant in this regard is the role of institutions in the determination, implementation and enforcement of policy. We began with the question: 'can we expect divergences in the ability to regulate changes in work due to restructuring according to different types of production or employment regimes, different types of industrial relations models, diverse institutional frameworks?'. Toward

this end, all of the organisational case studies included a section on industrial relations and regulation of work. Within each company that was investigated, data was collected on the forms that worker representation took, which issues were negotiated, the role of workplace representation in restructuring (information, consultation, active intervention), the impact of European or national regulations, and the pressures on regulations and institutions due to restructuring. Additional interviews with trade union representatives and works counselors were carried out where possible.

The research agenda motivating this line of inquiry was to examine what role the institutions and actors of industrial relations play in restructuring across value chain in diverse settings and across diverse institutional contexts. A further issue is what role workers' representatives have in tempering the effects at the workplace that result from this restructuring, including the terms and conditions of employment, fragmentation and segmentation, gender equality, training and skilling, and quality of work life. Existing studies have shown that there are major challenges for existing institutions and forms of social dialogue to deal with current trends in restructuring and changes at work. Therefore, the case studies also investigated the impact of restructuring on the strategies or effectiveness of workers' representation and workers' voice.

In order to gain a comprehensive picture, this report gathers the findings from WORKS qualitative and quantitative pillar together. However, the coherence of findings should not be overrated as data sources and levels of analysis vary widely. The quantitative reports of workpackage 9 are mostly based on national and international surveys and provide data on national labour markets whereas case studies of organisations and occupations address organisational practices and individual work experiences. Although the work organisations we investigated are of course embedded in national labour markets and institutional environments, obviously neither level of analysis neatly mirrors the other. Work organisations are shaped as much or more by organisation-specific structures and strategies, by their position in the value chain, and by the characteristics of the respective industries and their specific markets. *Vice versa*, the items investigated in surveys that cover a range of industries and workplaces may mean very different things in different organisational contexts and are influenced by all kinds of policies, strategies or emergent developments in addition to value chain restructuring. Teamwork for example is perceived as a central hallmark of functional flexibility and high-performance work practices in industrial contexts where it often is connected with job enrichment and enhanced skills (Batt & Doellgast, 2005). However, in frontline services that are generally performed in one-on-one customer interactions, teams may function as addressees of Taylorist control (Baldry, Bain & Taylor, 1998), and in knowledge-intensive work such as research or software development they may combine different specialisations in project work and even enhance specialisation which creates a different type of flexibility. Hence, the data triangulation (Flick, 2008) pursued in this report provides a complex and occasionally contradictory picture. However, where findings are coherent, they are certainly strengthened considerably.

3 Pressures for flexibility and externalisation strategies

3.1 Demands for flexibility

In the debates on organisational flexibility and flexible employment firms' need for flexibility is usually taken for granted. The consensus is so widespread that authors usually only have to refer to globalisation, intensified competition, versatile markets and capricious consumers to establish the salience of the issue. This applies both to academic discourses on organisational change or employment and to political debates for example on 'flexicurity'. Yet, 'the market', or 'the environment,' is not only shaped by consumers and regulators but influenced first and foremost by the strategies of all companies competing in a market. It would thus be equally justified to take company strategies in competitive product and service markets as a starting point. Often, we can trace back pressures for flexibility less to consumers than to changed marketing strategies of companies. In addition, it is often neglected that variations in capacity utilisation, for example, may only have become a problem for companies because of increased pressures from financial markets to yield high levels of return on investment in the short run (Altvater & Mahnkopf, 2002; Driver & Shepherd, 2005) because the return on investment decreases if demand is low but fixed costs cannot be reduced.

While the causes of pressures for organisational flexibility may be misrepresented in the debate, there is no denying that they actually exist and that they have increased in many industries. Yet, it is not so clear which companies face such pressures to what extent. There is surprisingly little interest in empirical evidence showing that not all companies are subject to pressures for flexibility in the same way. Rather, authors generalise the need for organisational flexibility and, what is more, often equate strategies to reach flexibility with flexible deployment of labour (Flecker, 2005a). This seems to be due to the highly political and ideological character of the flexibility debate.

Strategies to reach flexibility are linked with value chain restructuring in various ways. Let us briefly sketch the main hypotheses in this respect. In Atkinson's (1984) flexible firm model outsourcing was located in the periphery of the firm providing it with numerical flexibility. Later conceptualisations treated the internal/external and the numerical/functional distinctions as analytically distinct dimensions (Vickery & Wurzburg, 1996; Goudswaard & De Nanteuil, 2000). External flexibility thus has a numerical, temporal and a functional dimension although outsourcing is often seen as increasing only numerical and temporal flexibility. External functional flexibility can however be important for the access to knowledge and innovation. Nielsen and Lundvall (2003) find that firms characterised by internal-functional flexibility that also use external-functional flexibility by

networking with customers and suppliers, *ceteris paribus*, are more active in terms of product innovation than firms that operate in a more traditional way.

Table 3.1 Types of flexibility

	Numerical	Functional
Internal	Part-time work, flexitime arrangements, annualised working hours, working time accounts	Multitasking, job enrichment, multiskilling, teamworking, project organisation
External	Fixed-term contracts, freelance work, temporary agency work, temporary layoffs/seasonal work, irregular work	Subcontracting, outsourcing, freelance work

Sources: Atkinson & Meager, 1986; Goudswaard & De Nanteuil, 2000; Monastiriotis, 2003; Wickham, 2005; Huws, 2006

Another shortcoming of the flexibility debate is that, in spite of including external forms of flexibility, it focuses on the analytical level of the organisation neglecting networks and inter-firm relations that have become more and more important for the analysis of organisations and work (Sauer & Altmann, 1989; Benner, 2002). 'The production of goods these days is a result of interorganisational relations. The supply chains for components in major industries stretch across the globe and connect advanced economies and less developed parts of the world. The achievement of flexibility is as much an attribute of interorganisational arrangements as it is of the flexible organisation of firms themselves.' (Procter, 2005: 475). Organisations thus gain the option to pass on the risk of capacity utilisation to their suppliers and service providers. These in turn may operate under different labour regulations which allows them to shift flexibility and risks to their employees. This means that organisations' strategies to reach external flexibility in turn intensify the pressure for flexibilisation within service and supplier organisations (Arzbächer, Holtgrewe & Kerst, 2002; Lehdorff & Voss-Dahm, 2005).

In this context, interorganisational arrangements are not only interesting at the formal level of outsourcing projects or supply contracts or in term of transaction cost. Flexibility strategies also depend on the actual power relations between the organisations. 'Business to business contracting may act to place very strict constraints on the subcontracting organisations in terms of wage levels, work organisation and even working time arrangements. (...) However, at the same time the dilemma between co-operation and control may mean that the external contracting is not as "hands off" as assumed in the flexible firm models; instead of the contracted out work being treated as a market rather than an employment relationship (...), the end result may be (...) that the labour process becomes subject to the control of both the employer and the client organization.' (Rubery, 2006: 10). This means that companies can shift flexibility demands on to their service providers or suppliers also by exerting control over the labour processes of these.

The research findings of the WORKS project show a great deal of variation with regard to the strength of pressures for flexibility, the reasons for strategies to reach flexibility and the actual flexibility strategies they pursue in the context of value chain restructuring. Degrees and forms of pressures for flexibility are in fact highly sector-specific and depend

on the competition on product or service markets, on customers' or client companies' demands for flexibility, on demands by shareholders to increase return on investment or on public policies. The main pressures for flexibility in the sectors and business functions under investigation are:

- seasonality of production and/or demand;
- variations in demand levels;
- pressures for responsiveness due to the speeding up of business activities;
- pressures from competitors for speeding up of innovation cycles;
- goals to strengthen customer orientation and thus to increase service availability and shorten reaction times;
- attempts to shorten time-to-market in research and development.

In the *food industry*, the case studies on restructuring often involved a lengthening of value chains in the form of takeovers, relocation of tasks abroad and outsourcing. However, there were also simultaneous trends to centralisation and an accompanying standardisation. The dependence of food production on weather and seasonal conditions leads to variations in workload, as do fluctuations in demand which for some products, such as ice-cream, chocolate, beer *etc.*, also are seasonal. Therefore, companies often cannot use production capacities continuously throughout the year. In addition, unexpected increases in sales or demands by retailers for just-in-time delivery may play a role. The case studies also showed some pressures for responsiveness to the market and for speeding-up processes. Yet, the main goals of current restructuring appear to be cost cutting and quality enhancement rather than flexibility. An additional motive of restructuring is to strengthen control over the supply of raw material or semi-finished goods through vertical integration. Increased independence in this respect may also give some flexibility to the organisation in the sense of making quicker reactions to customer demands possible. Yet the main form of flexibility the food industry aims for is the adaptation of production to harvest times and to seasonal variations of demand volumes.

'Global food chains are increasingly subject to the process of vertical coordination' (ILO, 2007: 3). This has the consequence that large lead firms either buy up entire parts of the chain or have enormous influence in the distribution process to customers, and therefore 'exercise considerable power throughout the chain' (*ibid.*). In the *Benelux* brewery case in particular, which covered three countries in our sample, there is a clear trend towards concentration and the control of large percentages of market share. The other cases also revealed the increasing weight of large customers, that is, retail companies, in determining what is produced in which quantities and in what time frames. Additionally the growing attention to customer demands resulted in work intensification in some cases and in demands for more flexible working time arrangements in the majority of cases. The concentration and vertical integration of companies as well as the concentration and expansion of their customers increased demand for product diversity in all the food cases examined here. This made the work of the logistics departments more complex. They had to process diverse orders, coordinate with the production departments that the correct mix was being produced, optimise container and transport efficiency, and keep costs as low as possible.

In the *clothing industry* we found a rather different situation. Manufacturing companies are under pressure from retailers not only to cut costs but also to shorten delivery times. In addition, more and more clothing companies have tried to reach a competitive edge by

way of shortening fashion cycles, establishing continuous replacement instead of two collections a year, and enlarging product variety. This means that they have started to compete not only on cost but also on speed. In doing so, they in turn increase pressures for flexibility for their competitors and companies up and down the value chain. Intermediaries contribute to this general acceleration of business processes, but are also subject to it as their service comes to include high levels of responsiveness and swift reactions to market changes when organising the value chain for retail or brand owner companies. In the clothing industry flexibility is thus a central issue and companies continuously increase the pressures they put on each other in this respect.

In this industry organisational flexibility mainly implies an acceleration of collection development, developing different collections simultaneously, compressing lead times in manufacturing and thus bringing items quicker to retailers or own outlets. Intensified competition, the acceleration of business and the resulting demands for flexibility lead to increased pressure on the subcontractors carrying out manufacturing and logistics. There are still clear differences in employment and working conditions between companies with different positions in the value chain even though the WORKS research has not covered the low end of production workshops for example in Turkey. This trend not only put pressure on suppliers in Central and East European countries, it also allowed them to upgrade their operations as West European companies develop business models favouring proximity of production and speed before cost reduction (Faust, Voskamp & Wittke, 2004; Pickles, Smith, Bucek, Roukova & Begg, 2005).

In comparative terms the business function of *research and development in the IT industry* experiences much less pressure for flexibility. Yet, ivory tower situations are on the decrease, and actual products, market observation, closer relations with customers and an anticipation of market needs are on the agenda across the diverse types of R&D organisation. Pressure for flexibility slightly increases because IT research is supposed to speed up time-to-market of innovations or because research is reorganised along product lines instead of technologies. In both configurations, research, innovation and marketing are brought closer together. Time horizons matter increasingly. Generally, time to the next milestone is shortened, and software engineering methodologies intended to further accelerate R&D are implemented. In one case, Agile methodology was implemented upon an initiative of the mother company, and in an other, the organisation itself specialises in rapid prototyping. Such methodologies aim for shorter, iterated development cycles, and some informalisation. In the exchanges with external partners, demonstrations of speediness and the capability quickly to come up with a working prototype play a part in trust-building.

Where there is a high degree of basic research the needs of flexible responses are obviously limited. However, public R&D organisations often seek to increase the proportion of contracted research to reach political aims. This implies shorter project duration, tighter and tougher deadlines and the pressure to adapt the content of work more often to customer or market demands.

The business function of *software development* is closer to the market and often offers customised systems or the adaptation of standard software to customer needs. Pressures for flexibility include the need for responsiveness and work on the customers' premises. In the field of off-the-shelf products, competition forces companies to shorten development times, to speed up time-to-market and to tighten deadlines. Overall, especially in the

more integrated cases of relocation among the WORKS case studies, the pressure on developers and project managers increases at both ends of the outsourcing relationship.

There is some ambiguity in the interrelation between the restructuring of value chains and pressures for flexibility that becomes especially obvious in the cases of integrated multinational companies. Case studies show that with the relocation of software development remote locations first take over the more standardized functions: circumscribed modules of software development, maintenance, quality assurance and testing. In addition, software development across locations and production phases is subject to further standardisation or a process of 'industrialisation' which means a systemic approach that introduces formalised development processes that span the whole lifecycle of software, co-ordinate work on a global scale within the company, and try to assure quality control of a range of very complex products. However, in contrast to the formal level of standardisation and bureaucratic procedures, pressures for flexibility increase in the international competition for projects and work. CEE subsidiaries, for example, compete with Western locations and among each other on the basis of greater flexibility, longer working hours and willingness to work week-ends.

In *public administration and public services* the pressure for flexibility is not foremost among the motives for the outsourcing of IT. Outsourcing to IT service providers means that the IT infrastructure of an organisation or a public authority, including hardware and software and related services, is provided by a specialised company external to the client company or the public administration. Often administrations decided to outsource the IT function to a specialist IT company in order to guarantee the necessary expertise, reduce development cost and increase the speed of development. Obviously, political trends supporting privatisation play a role as well. As far as there are pressures for flexibility that lead to outsourcing, these are the needs to adapt to technological change and to secure access to new knowledge in a shorter time than previously.

In contrast, in *customer service* of public administration or public service organisations the pressures for flexibility are more clearly felt. In public services, a major factor in restructuring has been the privatisation for example of postal and telecom services and the ongoing liberalisation of these markets. Since then, cost efficiency has become crucial to survival. It frequently translates into cost cutting strategies which can, among other things, be achieved through tapping into low-cost labour markets and a closer adaptation of capacities to varying demand. To achieve these goals organisations may outsource parts of customer service or set up new customer service units in-house. Increasing customer orientation is another important factor behind restructuring processes in public services. Political aims also require administrations to improve customer orientation and to expand service availability for citizens (and voters). In cases of both IT and customer service outsourcing in the public sector and public services, service level agreements (SLAs) with partners, in-house as well as subcontracting, are gaining importance in the governance of public sector 'value chains'. They are also used to pass the risks caused by changing workloads arising from unpredictable events on to subcontractors and their employees. Outsourcing to private service providers may also be used to extend the temporal availability of service which may be much more costly with a public sector work force.

Overall, the industries and business functions under investigation in the WORKS project not only show diverse levels of pressure for flexibility. The meaning of organisational

flexibility also varies significantly. As a consequence, the interrelation between value chain restructuring and strategies to reach flexibility can be expected to be highly specific to the sector and the business function.

3.2 Value chain restructuring and external flexibility

Although flexibility is usually not the main aim of restructuring processes the qualitative research findings of the WORKS project revealed various interrelations between value chain restructuring and company strategies to reach flexibility.

First, differences in employment regulation between countries, sectors and companies act as incentives for externalisation. This means that companies circumvent employment regulation perceived as rigid (in view of different regulation elsewhere that allows employers more flexibility) by outsourcing or relocation. It is worth noting that usually, employment protection does not prohibit numerical flexibility. Rather, it makes it more costly. Through outsourcing or relocation abroad companies can increase numerical flexibility in a cost saving way if personnel in remote subsidiaries or with suppliers or service providers can be deployed more flexibly at lower costs.

Second, the issue of flexibility relates to inter-organisational relations within the value chain because the various forms of value chain governance impact on the way in which demands for flexibility are distributed along the chain. Needs for functional flexibility or risks of capacity utilisation, for example, accrue especially with dependent supplier or service provider companies. The findings on the clothing industry in particular show that demands for flexibility are not simply externalised but also increase for companies that hold a strong position within the value chain.

Third, and associated with the previous aspect, the WORKS research revealed the extent to which the issue of flexibility is a contested terrain as companies and organisations attempt to pass on risks and costs to others. Subcontractors and service providers sometimes enter into open negotiations with their client organisations on the levels of temporal flexibility and spatial mobility their workers are expected to provide.

3.2.1 External numerical and functional flexibility

Outsourcing is in fact used to adapt the capacities of the core firm to changing demand levels or, in other words, to provide numerical flexibility. Subcontractors and supplier companies can either cover peak demand on a one-off or contract-by-contract basis or help the core firm to cope with fluctuations within a continuous business relationship. The case study series provided a wide range of examples for this. The Italian clothing company *Green S.p.a.* answered international competition and the saturation and instability of demand by increasing flexibility and lowering costs. This is why the outsourcing of design and prototyping has accelerated (Pedaci, 2007a). The Greek clothing company *Co B* copes with fluctuations in demand through a storage system that acts as a buffer and through overtime. However, demand on temporal flexibility could be passed on to the subsidiary and to subcontractors abroad, so that Saturday work could be reduced in the Greek plant (Gavroglou, 2007a). In the software industry, the German multinational *Business-Software* leaves actual consulting and implementation of its software at customers' sites to other companies and individual consultants. Therefore some customer-driven

demands for flexibility, involving mobility and long periods of work off-site and on customers' locations, are not an issue in the company itself (Krings, Bechmann & Nierling, 2007).

Overall, the findings confirm that in several industries and business functions externalisation is used as a strategy to reach higher levels of numerical flexibility. There are also clear indications that suppliers and service providers often provide this flexibility through worse working conditions and non-standard employment (see Chapter 4 of this report). At the IT multinational *Domainsoft*, for example, CEE subsidiaries compete with West European locations, among others, on the basis of greater flexibility, longer working hours and willingness to work week-ends. Hence, they accept fluctuating workloads and tight deadlines (Makó, Illéssy & Csizmadia, 2007). In Italy, the clothing company *Green S.p.a.* benefits from outsourcing to a range of small companies that in Italy are exempt from some employment protection and capable of further putting out work to homeworkers (Pedaci, 2007a). These instances of outsourcing in combination with poorer working conditions and employment standards show that it is not only in the clothing industry that the devil takes the hindmost. However, the WORKS research also showed that we cannot generalise such a principle.

One reason for this is that externalisation is not only driven by the aim to increase numerical and temporal flexibility. At least in some sectors and business functions, external *functional* flexibility turned out to be more important in value chain restructuring than expected. In IT research and development, companies achieve external functional flexibility by using high-tech intermediaries such as VR2 in Germany who provide specialised software tools to support development processes in the automobile industry (Meil, 2007a). In other cases large companies bought up smaller research units to gain access to knowledge and research capacities. These may even come at cheaper cost if, for example, university spin-offs or research organisations pay public-sector rather than industry-level wages or can subsidise projects with public funding. In some of the extended value chains in software development a mixed strategy is followed in which both costs and external functional flexibility play a role. In the public sector, some case study organisations tried to reach a swifter upgrading of their information technology through outsourcing the IT function. In these cases, externalisation also made it possible for organisations to get access to new knowledge and services and to add tasks to their value chain that, at least in the short-term, could not be fulfilled internally. In the clothing industry, some companies that extend their value chain towards retail tend to buy designs instead of developing them in-house. While this mainly serves the purpose of speeding up the development of collections, it may also be an aim to tap knowledge of tastes and trends in particular markets. Overall and not surprisingly, externalisation increases functional flexibility mainly in knowledge-intensive business functions.

Apart from inter-firm relations providing functional flexibility there are more reasons why conditions do not necessarily become worse further down the value chain. In IT services, for example, the outsourcing service providers are often powerful global players. In addition, the highly-skilled workers in these and other knowledge-intensive business functions have a rather strong bargaining position at least in some cases. Under these conditions it is much less likely that the client organisation is able to externalise risks. In some cases public sector organisations became highly dependent on the service providers who were more and more able to set the terms of the co-operation.

3.2.2 Dynamics of inter-firm relations and unintended consequences

Interestingly, the levels of external flexibility that a core firm or client organisation can reach through outsourcing are not fully circumscribed by the initial organisational decisions and contractual arrangements. Rather, power relations between the organisations, but also the bargaining position of workers, influence the degree to which flexibility demands can be shifted on the service provider or supplier firm. The case of the Italian clothing company *Green S.p.a.* and its manufacturing subcontractor *NewWear* illustrates the point very well (Pedaci, 2007a): time pressures are usually very high for workers at *NewWear* but they even increase further if delays that occur at *Green* have to be made up. Such a constellation can also be found in the business function of logistics but it is obviously not limited to the clothing industry.

In software development it is quite common to use external or remote units further down the value chain as a flexibility resource. This not only means that companies deliberately rely on external flexibility to cope with their customers' demands. Asymmetric power relations, high cost differentials and geographical distance may let (core or client) companies get away with ineffective project management resulting in irregular workloads at the remote unit or subcontractor simply because problems do not become obvious for the core firm or client company. In this respect, the case of the Austrian IT company *Messenger* and its small Croatian software development unit *Digit* (which are both owned by a US-based multinational) shows that value chain restructuring may even improve the situation of the dependent downstream unit and result in more regular and easier to plan workload (Flecker & Schönauer, 2007): previously, *Digit* worked for the US headquarters of the same multinational directly, and were faced with extremely irregular workloads and lengthy periods of virtual inactivity, being 'under the radar' of corporate management. As responsibility for *Digit* was assigned to the Austrian subsidiary, the Croatian developers were integrated in the workflow of *Messenger*, resulting in a more constant workload.

The fact that externalisation is often motivated by the aim to reach flexibility does not mean that outsourcing does necessarily provide more flexibility to the client organisation. Research in the food industry yielded examples to the contrary. *ND*, an Italian producer of vegetables and frozen foods, is an interesting case in this respect. Unexpectedly high demands for frozen foods led to the decision to outsource parts of the production to increase the capacity. Later on, however, the company planned to re-internalise outsourced production activities and to substitute its own production for current purchasing. The reason for this is that in-house production 'would allow them to maintain a strict and more direct control on food processing and thus keep down wastage and delays due to the shortcomings of third parties' (Pedaci, 2007a: 5). Also a Greek and a Norwegian case study in the food industry showed that companies aimed at increasing control over quality and timing through insourcing.

The outsourcing of IT regularly leads to more formal procedures, more paperwork and strengthened cost considerations. The case of *Citycouncil* in the UK shows how the cooperation between various local government departments and IT services changed through outsourcing although IT staff still work on the same premises (Dahlmann, 2007c). While before the clerks and the IT workers directly made appointments to solve computer problems, now all requests and tasks are scheduled by the IT service provider's central helpdesk. In addition, IT workers have to cost all tasks before they start to carry them out

which results in a substantial amount of paperwork. Overall, the procedures introduced by the service provider company thus hamper rather than boost flexibility in the sense of responsiveness to customer demands.

Overall, the findings show that the fragmentation of value chains may hamper flexibility, first, at the level of the workflow by new interfaces and problems in the co-operation across organisational boundaries. Second, the contractual arrangements and their consequences in terms of bureaucratic requirements may reduce responsiveness and slow down workflows. These issues will be further explored in Chapters 5 and 6 on work organisation and the circulation of knowledge.

3.3 Summary

Strategies to reach flexibility in the context of value chain restructuring do have different goals. *First*, outsourcing may help companies to cope with variations in capacity utilisation in a cost-effective way. To be able to use suppliers or service providers to cover excess demand or to deal with fluctuating volumes of output makes it possible to keep fixed costs low and to save on overtime of the internal work force. This motive for, or effect of, outsourcing is important in food production, in the clothing industry and in the business function of customer service. *Second*, flexibility also has the meaning of responsiveness, adaptability, swift workflows and increased variation and changeability of procedures, products and services (Carlsson, 1989). Taking recourse to external knowledge and capacities, for example in R&D, in software development or in clothing design, makes it possible to enhance flexibility in this sense. In some cases, however, companies reached higher levels of responsiveness and adaptability by insourcing activities that were outsourced before. *Third*, value chain restructuring may also serve the purpose to improve the availability of services, to extend opening hours and to enhance temporal flexibility at comparably low costs. A typical example of this is the outsourcing of customer service activities to call centre companies with lower employment standards and therefore lower costs of flexibility.

Although flexibility is rarely the primary motive of externalisation, in most cases suppliers and service providers offer high levels of variability of capacity utilisation, adaptability and temporal flexibility. In the clothing industry, for example, brand owners and retailing companies shift the risk of capacity utilisation to suppliers down the value chain and hire intermediaries for the newly emerging, demanding job of co-ordinating the lengthened and often global supply chains. In software development and IT services, numerical, functional and temporal flexibility play a role in outsourcing arrangements or in the relation between headquarters and remote subsidiaries but in these business functions the mobility of workers to work on customers' premises is an additional issue. While we found some textbook examples in which risks and demands for flexibility are passed down the value chain and the devil takes the hindmost, this picture needs to be qualified in several respects. First, there are variations in power relations between organisations. In IT services, for example, the service provider may be in a position to set the terms of the co-operation. Second, power distribution also depends on the professional groups that are affected. Highly-skilled workers in the IT industry, for example, can be in a rather strong bargaining position and thus can fend off demands for flexibility even if they are positioned further down the value chain (see Chapter 5.6). Third, there are clear country dif-

ferences in the scale of differentials between the labour market segments that are contingent on national labour market regulation. In Italy, for example, employment in small businesses is considerably less regulated and workers are less protected than in large companies, giving an institutional incentive for outsourcing work. Scandinavian countries, have encompassing employment regulation and industrial relation systems with obvious limitations on the possibilities to externalise the costs of flexibility.

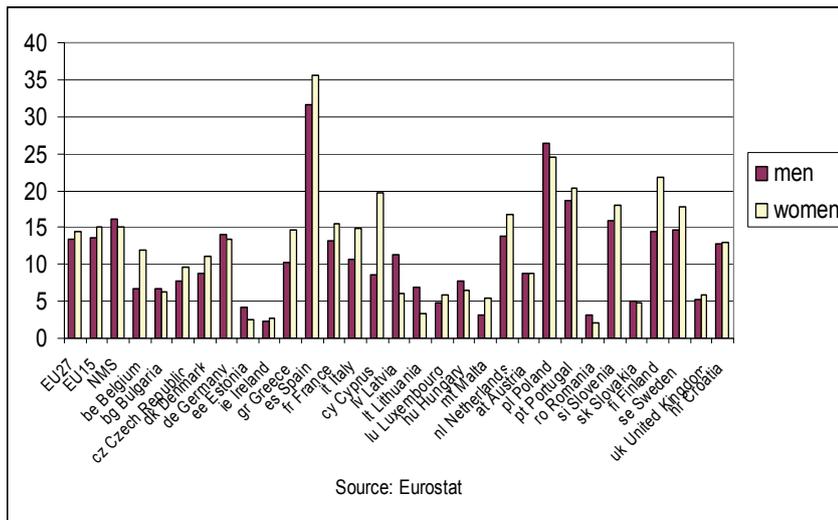
Although externalisation is often used to increase flexibility, the research findings also revealed limitations in this respect. In several cases it became clear that outsourcing hampers flexibility in the sense of reducing responsiveness, slowing down overall workflows, and intensifying 'bureaucracy' where needs for control and monitoring increased. These effects can be expected in particular where power relations are balanced, where contractual arrangements are complex and where it is difficult to exert control across organisational boundaries.

4 Flexibility and forms of employment

This chapter investigates the way in which value chain restructuring influences organisations' choices between different forms of employment contracts. External numerical flexibility, for example fixed-term contracts, freelance work, temporary agency work and seasonal work, has frequently been associated with outsourcing (Atkinson & Meager, 1986; Cappelli *et al.*, 1997; Goudswaard & De Nanteuil, 2000; Monastiriotis, 2003; Wickham, 2005; Huws, 2006). Providers of outsourced services may pass on the flexibility requirements of their clients on to their employees, for instance in the form of non-standard contracts (Arzbächer *et al.*, 2002). Thus, 'the external flexibility of organisations relies to a great extent on the internal flexibility of other organisations. External flexibility thus intensifies the pressure for flexibilisation within service organisations' (Lehndorff & Voss-Dahm, 2005: 293). Such reliance on numerical flexibility may have its drawbacks with regard to the quality of work: it comes at the expense of work force stability, human capital investment learning opportunities and workers' commitment. Indeed, a disproportionate amount of the EU-15's employment growth from 1995–2000 by 22 million additional jobs has consisted of fixed-term jobs (6 million), and especially the low-wage segments have become 'more atypical' (Fernández-Macías & Hurley, 2008: 2). However, this cannot simply be explained through widespread outsourcing. The use of flexible employment contracts is influenced on a range of levels: the national institutional context of labour markets, industrial relations, welfare state regimes, and gender contracts, the character of products and production processes in the respective sectors, and the HRM strategies of companies that are shaped by their position in the value chain (Rubery & Grimshaw, 2003; Shire, Mottweiler, Schönauer & Valverde, 2009). The WORKS case studies also show that there is no simple link between value chain restructuring and an increase in flexible employment forms. It is mainly the public sector where we observe a clear trend towards increasing heterogeneity of employment forms in the course of the restructuring of value chains. In the private sector, WORKS found numerous cases in which value chain restructuring increases flexibility while retaining employees in standard open-ended contracts using flexible working time arrangements, *i.e.* internal numerical flexibility. There are also cases in the sample where flexible employment forms are simply used to cut cost regardless of value chain restructuring. Although the degradation of working conditions and precarisation of employment in the public sector should receive attention, it must not be overgeneralised. For many countries and sectors, possible erosions of the standard employment relationship cannot immediately be connected to value chain restructuring.

First this chapter will take a closer look on the national embeddedness of flexible employment with a specific focus on temporary employment. In the next step it will investigate to what extent value chain restructuring leads to an overall fragmentation of employment with the implication of increased inequality and competition among

Figure 4.2 Temporary employment as percentage of total employment, by gender, 2005



Whereas temporary employment appears to be an obvious and easy to measure indicator of external-numerical flexibility, it has its limitations, especially as its occurrence is contingent upon the level of employment protection in each country. These rules determine the cost of hire and fire practices and the ability of companies to externalise the cost of flexibility to society (Lindbeck & Snower, 1998).

For example, in the UK with its weak employment protection legislation, temporary employment under-counts external-numerical flexibility by ignoring the possibly high level of churning among regular employees. Denmark also has low rates of temporary employment. Yet we know that it has one of the highest job turnover rates, given its weak employment protection laws and the dynamics of the Danish labour market. Conversely, relatively high levels of employment protection for regular workers in a country often do not limit the extent of numerical flexibility but provide incentives for companies to make extensive use of temporary contracts and end up passing the requirements of flexibility on to temporary workers as in Portugal, Spain and also France (Galtier & Gautié, 2003; OECD, 2004: 87). The result is a highly dualised labour market. In these countries, increased job insecurity is concentrated amongst young people, women and workers in the declining industrial sectors (European Commission, 2007). In France for example, agency and temporary work grew three-fold between 1983 and 1998, and low-skilled, female-dominated clerical work was particularly subject to this change. In Sweden, however, a big increase in temporary employment could be put down to changes in supply rather than demand, as it occurs there also mostly amongst young people who might therefore be ‘job hopping’ (Boje & Grönlund, 2003: 198). Overall, there is little evidence that countries can be grouped consistently into types. Countries are in fact highly distinctive entities even where changes like globalisation, which might be expected to affect the more industrialised countries in similar ways, are concerned (Birindelli *et al.*, 2007).

The argument that the relative incidence of temporary work in different countries can be misleading as an indicator of numerical flexibility is confirmed by data on job stability. One would expect that countries with little temporary work would be countries with high job stability; in fact this does not hold in many cases. It holds for the case of Malta (low level of temporary work, very high percentage of workers working for the same employer) but not in the case of the UK (low level of temporary work, low level of work for the same employer) nor in the cases of Portugal and Greece (high levels of temporary work, high levels of work for the same employer). If we consider job turnover rates³ directly, we find that countries as disparate as Sweden, UK and Spain have very similar average job turnover rates.⁴ These apparently paradoxical results can be reconciled by the operation of secondary labour markets.

With regard to occupations, the WORKS analysis of the European Labour Force Survey shows that especially elementary occupations have a high incidence of temporary work (29.1 *per cent*) (Birindelli & Rustichelli, 2007: 63). Moreover it is more widely spread among blue-collar (17.6 *per cent* of the total of employee in 2005) than among white-collar workers (12.2 *per cent*) in EU-15. There is also a much higher incidence in agriculture (36.7 *per cent*) than in industry and in services (13.3 and 14.1 *per cent*) in EU-15 (*ibid.*: 62). In the food industry in particular (NACE 15) both in EU-15 and the New Member States, temporary employment is quite developed (13.3 *per cent* and 19.2 *per cent* of the total of employees in 2004, respectively) (*ibid.*: 64-66).

In the sectors investigated in the WORKS project, the picture is heterogeneous. In the *food industry* (NACE 15), temporary employment is quite developed in both EU-15 and the New Member States. 13.3 *per cent* and 19.2 *per cent* of the total of employees in 2004, respectively have fixed-term contracts or are employed by a temporary work agency. In production activities the incidence of temporary employment is generally higher than the sectoral average with 15.9 *per cent* in EU-15 and 24.0 in the New Member States (*ibid.*).

For the *clothing sector*, data on temporary employment show that despite a slight growth, in EU-15 the percentage on the total of employment in the textile and clothing sector (NACE 17+18) is well below industry average. In 2004 it amounted to 9.3 *per cent* against 13.3 *per cent* registered temporary workers in industry as a whole in 2005. Considering the New Member States, it is notable that the percentage of temporary employees is much higher there: one out of five workers in production activities is a temporary worker (Birindelli & Rustichelli, 2007: 64-66). In the clothing industry some of the flexibility required by time and cost pressures has traditionally resulted in outsourcing. Although wages in the clothing industry are generally set by collective agreements, they are close to the minimum wage in most countries (France, Hungary, Portugal, Greece). It is plausible to hypothesise that the relocation of operations to low-wage countries offers companies a 'functional equivalent' of contract (external-numerical) flexibility, thus rendering the use of temporary workers in low-wage countries superfluous.

The *IT sector* (NACE 72) in EU-15 rarely resorts to temporary employment and no remarkable changes have occurred in recent years. In 2004 the percentage of temporary

³ The job turnover rate is defined as the total sum of job gains and job losses registered at the firm or establishment level, divided by the employment level at the beginning of the period.

⁴ The data are average annual job turnover rates in existing companies for the period 1992-2000, (Gomez-Salvador, Messina & Vallanti, 2004).

workers on the total of fixed-term and temporary employees amounted to 8.4 *per cent*. As the sector size in the New Member States is very small in Eurostat, reliable estimates cannot be provided for these countries.

Quantitative data on *public administration* (NACE 75) show that in EU-15 the use of temporary employment had its peak around 2000, afterwards a slight decline can be observed. In the New Member States, the incidence of temporary public employees decreased between 1996 and 2000 and then increased up to 10.8 *per cent*, in line with EU-15 data. In *railways and postal services* (NACE 60.1+64.1) temporary employment has also declined since 2000 in EU-15 and amounts today to 6.9 *per cent*. In the New Member States it is almost non-existent (4.6 *per cent*) (*ibid.*). Interestingly, data show that in the activities connected to direct customer contact, temporary employment is also decreasing from 10.6 *per cent* to 8.4 *per cent* in EU-15 (*ibid.*: 67). Looking at the organisational case studies, this can partly be explained with an increase of outsourcing of service and other functions to the private sector, with the result that atypical employment forms are no longer visible in the public sector data. The use of temporary employment in relation to value chain restructuring in the case studies illustrates the interrelationship of sectoral and national conditions.

In the *food industry*, the employment of temporary work forces is quite traditional. The main motives for using seasonal workers as well as temporary agency workers are peak staffing and the inherent seasonality of the sector. Employment is clearly segmented along gender and ethnic lines. For example at *Beer AD*, a Bulgarian beer producer, seasonal temporary agency workers mainly come from a low qualified group of the Roma community (Stoeva, 2007; Kirov, 2007). *CO.A*, a Greek vegetable producer with a subsidiary in Bulgaria, hires ten to twenty seasonal line workers every year who have fixed-term contracts. These unskilled temporary workers are predominantly Roma from nearby villages, whereas the few technicians and managerial personnel are ethnic Bulgarian and have open-ended contracts (Gavroglou, 2007b). An ethnic dimension of the work force can also be observed at the Italian vegetable producer *ND*. Immigrant workers (most of them are male) are mainly warehousemen and porters. Against the background that undocumented migrant workers form a crucial part of the work force in the food industry, it has to be noted that all of the workers in the observed case study companies hold regular working permits. However, most migrant workers at *ND* have past experience as undocumented migrants, who initially did not have the requisite identity papers, work permits or other documentation to work legally (Pedaci, 2007b). All over Europe, the agricultural sector receives negative headlines for its exploitation of undocumented migrants from poor Southern countries. The case *Fishing Company* from Norway, shows another aspect of migrant work. Here, young staff from Sweden are hired on short-term (normally three months) contracts during busy periods, and serve as a 'buffer' against dismissals of core staff, according to the human resource manager (Saetermo, Torvatn & Dahl-Jørgensen, 2007: 7).

The Danish food industry case, the meat producer *Meat Inc.*, clearly shows the interplay of the national institutional context and the options of value chain restructuring. In Denmark, strategies to reach flexibility revolve around the model of flexicurity, which is based on the highly developed Danish social security system. Flexicurity means a policy strategy that attempts to enhance the flexibility of labour markets, work organisation and labour relations on the one hand, and to enhance employment and social security on the

other hand (Huws, 2008). The term of dismissal notice is very short in Denmark (7-42 days, depending on job tenure), so companies' manoeuvring space for numerical flexibility within standard employment contracts is large. Hence, flexible labour has a long tradition in the Danish labour market and has become a regular, well-regulated phenomenon. In *Meat Inc.*, due to the institutional context of the company and the dynamic Danish labour market, the use of short-term contracts is very rare. However, *Meat Inc.* tried to make the most of its possibilities and relocated parts of the deboning activities to Germany. At first sight, Germany does not appear as the most attractive outsourcing destination, but the German subcontractor employs migrant workers, among others from Poland, who are employed in low-cost and precarious forms of contracts, such as short-term contracts. Employees in Germany also work longer hours for lower wages, which results in much lower production costs. This situation weakens the position of Danish slaughterhouse workers, who feel they are constantly under threat of further outsourcing. Employment relations at Danish slaughterhouses have traditionally been characterised by frequent strikes and conflicts between workers and management, but in recent years the number of strikes has decreased, primarily as a consequence of the potential threat of closing slaughterhouses and outsourcing manual labour (Gorm Hansen, 2007a).

In the *clothing industry*, the case studies illustrate both global offshoring and, in Italy, a locally segmented use of varied employment contracts. The French medium-sized family-owned fashion company *Adele*, which produces and distributes women's clothes, closed its factories in France in the 1980s. Half of the products are sourced from subcontractors in central and Eastern Europe (Hungary, Romania, Bulgaria and Ukraine) and half from Asia, mainly China – all of them low-wage countries and attractive offshoring destinations. In France, *Adele* kept only a small pilot production unit with strong technical skills (Muchnik, 2007c) and normal, open-ended employment contracts. In Italy, outsourcing to smaller companies is attractive, due to differences in the general regulatory framework and working conditions for small businesses. 'As from the beginnings of a clothing "industry" or proto-industry (Phizacklea, 1990), some companies also outsource work to homeworkers or very small businesses which is the case for the subsidiaries of Italy's *Green S.p.a.* (...)' (Flecker & Holtgrewe, 2008b: 23). In addition, the company has moved into retail itself, and in line with practices in the retail sector, there is more non-standard work in the retail subsidiary. It is possible that the strategy of branded clothing manufacturers to move into retail will further increase the proportion of atypical employment.

The IT sector is another sector in which outsourced work is not carried out under precarious employment conditions. For example, the aim of the Bulgarian IT subcontractor *Softserv* is the higher-quality end of the market and long-term customer relations. Nevertheless it still offshores some of its own work further to an owned subsidiary in South-East Asia. In this case, customers participate in decisions whether to locate part of the coding work in Asia or have it all done in Bulgaria. *Softserv* is located in a low-wage country, and it can be observed that all employees have permanent, full-time labour contracts in both Bulgaria and Asia (Galev, 2007).

In the case of *IT outsourcing from the public sector* to IT service providers, again, employment contracts mostly remain open-ended and full-time. *IT Health* in Norway is an example. In this case, a regional health administration centralised the IT of all hospitals and health centres in the newly established IT service provider *IT Health*. This organisation is in public ownership but economically independent. IT workers were transferred

from the hospitals to *IT Health*, and indeed, this transfer of workers brought an expansion of employment and an improvement of employment conditions. All employees retained their job tenure. There were only changes regarding the wages because these needed to be harmonised. The various hospitals and health centres had considerable differences in their wage systems: '(...) one would not have believed we were in the same country – there was such a vast gap', said a manager (Dahl-Jørgensen & Torvatn, 2007: 9).

In contrast, the German case of project-based IT service outsourcing shows a picture of increasing heterogeneity and fragmentation that is typical for recent developments in the public sector. Indeed, the public sector creates its own segmentation of employment, and the varying power of work force groups (Rubery, 2006: 7) can lead to increasing competition between workers' segments. In Germany, a public administration formed a public-private partnership with *MM Spinoff*, a multimedia subsidiary of a large IT service provider, to develop a training portal. The employees of the public administration who are involved in the project are civil servants with tenured positions. The subcontracting company *MM Spinoff* is not covered by a collective agreement. Furthermore its employees collaborate with external workers, for example temporary agency workers from other companies or freelancers, whose employment conditions, especially with regard to working times, are even less regulated (Meil, 2007b). The reason for the employment of temporary agency workers in this case was not cost-cutting, as the cost of agency workers is considerable, but a ban on recruitment. Nevertheless, the configuration led to an increase in non-standard and unregulated work.

Another instance of (former) public sector organisations' creativity in the flexibilisation of employment is *German Railways*. In 2001 they set up a temporary employment agency within the company with the main function of making the utilisation of staff more flexible. This agency was set up to help to find new positions for those who had lost their jobs because of rationalisation. It helped the organisation retain its internal labour market as always had been, while reacting quickly to the needs of flexibility and providing a comparatively high level of employment security (Dunkel, 2007). Similar to this, *Swedish Post* management operated with a redeployment organisation, which was set up to transfer staff from closed post offices within the company (Tengblad & Sternälv, 2007c).

The increase of temporary and atypical employment in Europe thus cannot immediately be linked to the restructuring of value chains. In industries such as clothing or IT, even global offshoring mostly takes place with 'normal' employment relationships – although contracts and working conditions in most offshoring destinations were outside the range of the WORKS studies. In the food industry, temporary work, ethnic and gender segmentation are traditional, and there are few changes of the practice, although nearshoring provides companies with additional options. In some cases, the restructuring of value chains even lead to a harmonisation of employment conditions through the centralisation of production or services. On the other hand fragmentation of employment with respect to status, wages and job security can also be observed.

4.2 Fragmentation of employment

Indeed, the sheer expansion of atypical employment shows a tendency for companies to adjust their employment strategies in a way that externalises risks and costs to labour and/or society by making employment more precarious and/or flexible for a portion of

the work force (Birindelli & Rustichelli, 2007; Brynin & Longhi, 2007; Birindelli *et al.*, 2007). This is indicative of a fragmentation of employment which is however not a general trend.

Fragmentation of employment means that differences and inequalities in terms and conditions are created between workers who were previously employed under the same conditions (Marchington, Grimshaw, Rubery & Willmott, 2005). Traditionally, labour market segmentation theory distinguishes between a core and a peripheral work force. The 'flexible firm' model by Atkinson (1984, 1985) divides the work force into 'core' workers and 'peripheral' workers. Core workers are the more-or-less permanent workers of a company, usually possessing a high level of qualifications and/or firm-specific skills that cannot be easily replaced. Peripheral workers are those who are employed by a company on a fixed-term or occasional basis and are thus the first to be laid off when demand slackens. This 'more diverse periphery of non standard or externalised employment, (...) provided both numerical and financial flexibility, with costs and staffing levels more responsive to market than internal conditions' (Rubery, 2006: 6). Rubery notes that 'it was not clear if the apparent development of stronger divisions between a core and a periphery was to be interpreted as a response to changing internal needs for long-term and committed staff due to changes in the business or technical conditions of the organisation or a response to slacker external labour markets which provide opportunities for hiring non standard staff or outsourcing at lower costs compared to fully internalised labour' (*ibid.*).

However, 'the existence of value chains puts into question the traditional distinction between core and periphery or between internal and external, which was developed for a single firm or independent business unit' (Huws & Ramioul, 2006: 59). Peripheral employees to one firm may in fact be central or core to another (Benner, 2002), and within value chains, requirements of speed, responsiveness and flexibility may be passed on between companies, and between companies and their employees (Lehndorff & Voss-Dahm, 2005). In addition, the 'buffering' function of non-standard employment or peripheral labour markets to shield core work forces from the market's volatility may be questioned (Arzbächer *et al.*, 2004). For example, in Pfeifer's (2005) analysis of the determinants of temporary employment in Germany and the impact of these flexible employment forms on job security and job stability of regular employees, which was based on data of the German Institute for Employment Research (IAB), neither fixed-term contracts nor temporary agency work were found to improve job security and job stability for regular employment. Indeed, the WORKS case studies show that in numerous cases, especially but not exclusively in the public sector, the insecurity of the 'peripheral' part of the work force is gradually affecting the work reality of 'core' employees who are feeling increasingly under pressure.

Though the core/periphery model remains questionable in the context of value chain restructuring, evidence of fragmentation with respect to status, wages, job security, and the degree of (involuntary) working time flexibility is found especially in the public sector and the services of general interest, where it leads to increased inequalities in terms and conditions of employment between workers.

The *Greek postal service* is a striking example. The unit under investigation is a subsidiary of the National Postal Service. It was established to take over the courier part of services and acts under different organisational and labour relations principles. In the course

of restructuring 98 employees were transferred to the subsidiary, while they still have a contract with the National Postal Service. Additional staff is composed of 120 regular employees, whose employer is the subsidiary, 80 seasonal employees, who work under a four- or eight-month contract for the national minimum wage, and 250-300 temporary agency workers hired for a two-month period which can be renewed up to a total of eighteen months. This leads to the situation that currently there are four categories of workers at the subsidiary, who are doing mainly the same job (Gavroglou, 2007c).

Citylife, an Austrian case study on the outsourcing of telephone services for public administration to a subcontracting call centre consortium, is another example. In this case the public authority passed on flexibility demands to subcontractors. The consequences for agents' employment contracts are serious. In contrast to staff of the public authority who have job tenure, the subcontractor hired call centre agents with mostly quasi-freelance contracts. This specific Austrian form of employment implied very low employment security, exemption from social security contributions, and also from rights such as the claim for paid leave with all the negative effects on individual social security (in case of illness or unemployment).⁵ In reaction to this practice, which was widely-spread in Austrian call centres, social insurance organisations and unions put companies under pressure to change employment contracts. They argued that the employment relation did not fully meet the legal criteria for a freelance contract and companies were effectively trying to evade social-security contributions. Eventually, *Citylife*, like many other call centres in Austria, gave their agents standard employment contracts which are still low-paid, but give access to social security and other benefits (Schönauer, 2008).

In other industries, fragmented employment relations are to some extent traditional. In the *food industry*, seasonal labour is often used but this is not related to value chain restructuring. In the *clothing industry* in Southern Europe, outsourcing to small companies clearly makes use of the marked, institutionally enabled, differentials in employment conditions. In Italy, *Green S.p.a's* subsidiary outsources work to homeworkers or very small businesses. Companies with fifteen or fewer employees are exempt from some taxes and social security contributions and also from some employment protection. In addition, the employees of the subsidiary are covered by the collective agreement for handicraft enterprises rather than that of the clothing industry. All of this results in some 20-25 per cent lower pay for a similar job description and rank (Pedaci, 2007a; Flecker & Holtgrewe, 2008b). In the IT sector we see some evidence of fragmentation concerning entry positions of young employees. In the Austrian case *IT Research Labs*, as in other research organisations, entry positions are often filled by students and are both freelance and part-time. As projects develop and students gain their degrees, they increase their hours and move on to full-time and, possibly through a period of fixed-term contracts, to permanent employment (Holtgrewe & Meil, 2008a).

Flexible employment and fragmented work not only affects the individual quality of work, but also has an effect on workers' ability to voice their interest (see also Meil, Tengblad & Docherty, 2009). Different cases, especially from the public sector show that people in precarious forms of employment are not keen on voicing their interest or joining trade unions. For example at *Greek Post*, workers at the newly founded subsidiary used to belong to an independent union of their own, which was not affiliated to the national con-

⁵ Since 2008, Austrian quasi-freelancers are covered by unemployment insurance.

federation of postal workers. A year ago the union affiliated to the confederation, which can be interpreted as an attempt towards harmonisation, but seasonal workers and temporary agency workers are still not represented by any union (Gavroglou, 2007c). At *Citylife*, the subcontracting call centre of an Austrian public housing administration, the situation is very similar. The quasi freelancers were not covered by any collective agreement and cannot elect a works council, although the Austrian white-collar union has played a part in the campaign to normalise these workers' employment contracts (Schönauer, 2007). Another example is the Austrian case of restructuring of *Postal Services* (Hermann & Schönauer, 2007). The service partners working with the Austrian Post are small companies with mostly informal ways of participation as often the number of employees is also too small to elect a works council (Meil *et al.*, 2009). In the public sector thus the fragmentation that emerges through privatisation and/or restructuring hampers collective action. There are also some examples from other sectors in which gaps or weaknesses in the existing system were used to reduce union representation, such as outsourcing to a less organised region in Italy (Pedaci, 2007a) and using marginalised and precarious workers with little access to representation, such as the Roma workers in Bulgaria (Linardos, 2007). However, in some areas of higher skilled and knowledge-intensive jobs such as the IT sector trade union density is similarly low in spite of the prevalence of normal employment relationships. For example, in the German *Business-Soft*, a works council was only elected recently after a long period of controversy, whereas before, the company had a consultative committee outside the range of the Works Constitution Act (Krings *et al.*, 2007). Meil *et al.* (2009: 23) argue that the high skill level of employees leads them to assume they have leverage in individual bargaining. Hence, low union density does not mean that they have no voice: 'Another argument is that traditional negotiation issues and priorities of union bargaining strategies, *i.e.* wages and working time arrangements, are less salient for this group'. In both highly- and lower-skilled configurations, the patchy interest representation may lead to a 'personalisation of malaise' or to labour issues concentrating in more contingent coalitions and *ad hoc* topics than traditional interest representation (Piersanti, 2007: 14).

4.3 Transfer and secondment of workers

In the course of restructuring of value chains we often observe a transfer of workers or different forms of secondment of personnel in which continuity of the employment relationship may be maintained but the functions of formal employer, actual workplace and actual direction and organisation of work may be split. Staff secondment is a special case of staff transfer, where workers are temporarily 'loaned' by one employer to another. Staff remain employees of the original employer but carry out work under the direction of the employer to whom they have been seconded. Secondment is often used as an alternative to a real transfer of personnel (Huws, 2008). It often creates differences in terms and conditions between workers who are doing the same tasks or work at the same place, but are not employed under the same contract. This contributes to the fragmentation of employment across work forces. Case studies revealed that transfer and secondment of workers are crucial issues which - in companies with some union presence - always lead to more or less intense negotiations with union representatives. Worker transfer is regulated in the European Council Directive 2001/23/EC on TUPE ('Transfer of Undertakings

(Protection of Employment) Regulations') and its national implementations which lay down conditions governing the transfer of personnel from one employer to another. In most instances of staff transfer observed in the case studies that objective terms and conditions of working contracts remain the same. However, transferred staff experienced higher demands for flexibility and heavier work loads. Interestingly, subjective insecurity especially increases.

In the IT service sector, transfer of workers happens more often than in other sectors as IT service providers expand by taking over IT departments of their clients. In the Swedish case of outsourcing of the wage administration *XY Data* employees had worked under high levels of uncertainty during five years before the outsourcing, since top management did not see wage administration as a core activity and the future of the department was unclear. After the outsourcing and the transfer to the new employer, perceived insecurity decreased, partly because of the proactive information and HR policy of the service provider. The transition was smooth; the trade union accepted the management plans. The terms and conditions of employment stayed roughly the same, but in practice more flexibility is demanded from employees and the workload became heavier. The union was able to reach a permanent agreement on terms and conditions. This went beyond the EU TUPE directive which stipulates a one-year transitional period. However, trade union representatives were concerned over a recent takeover of the subcontracting company by a US-based multinational, fearing that this might lead to a future offshoring of work (Tengblad & Sternälv, 2007b). In the case of *Customer*, a British example of restructuring of customer service in the public sector, staff were physically transferred but retained the employment contract with the seconding organisation, which is the public authority. They worked in a new environment with new colleagues, but were still part of the sending organisation. Nevertheless, employment conditions for transferred staff changed. For example, some found that their individual working hours flexibility was reduced. Much stricter time schedules and work on Saturdays reduced their individual scope for planning. Union officers welcomed the secondment model as an alternative to outsourcing but feel that it will only offer a short-term safeguard. The secondment model has put transferred staff in a more precarious situation for the future. There is concern that downsizing may be more likely now and due to the fact that *Customer* acts as a private-public entity, it is uncertain how they will treat the work force in the long-term (Dahlmann, 2007a).

4.4 Summary

In general, we are observing an expansion of atypical employment and specifically temporary work in Europe which implies that companies are increasing their external-numerical flexibility and making use of the options national labour market regulations provide. Indeed, the way in which employment becomes more flexible depends to a great extent on the institutional context of a country and on sector-specific traditions. This is not a necessary consequence of value chain restructuring. A lot of outsourcing and restructuring takes place with the use of normal employment relationships. However, in transnationalised industries such as clothing and IT WORKS has not been able to investigate the employment contracts of say, workers at offshored clothing manufacturers, and it is worth keeping in mind that in low-wage offshoring destinations a 'normal' employment relationship may still mean very little protection and poor working conditions. In the food

industry, flexible employment is traditional and does not appear to change much - but nearshoring may imply a use of more flexible labour as in the case of Danish Meat Inc. Configurations in which value chain restructuring means a flexibilisation and precarisation of employment contracts are mostly found in the public sector. Here, we also find the most evidence of a fragmentation of employment which, far from 'new' flexible employee groups buffering 'core' employees from market fluctuations and extended working hours, put pressure on the working conditions of core employees as well. This fragmentation also erodes workers' capacity for voice and interest representation as work is moved out of the more organised segments of the labour market, new employees may regard their jobs as transitional and competition across segments increases.

All these measures of flexible employment - temporary contracts, transfer of workers, outsourcing of tasks - show that an appropriate organisation of work is the foundation for flexible employment of staff. And, on the other hand, flexible work organisation is also used as an alternative to flexible employment forms. This will be analysed in detail in the following chapter.

5 Work organisation and flexibility

By definition, the lengthening and fragmentation of value chains implies that lead firms or core organisations rely on external resources and capabilities. Hence, they are likely to try and increase their external flexibility or, when outsourcing work to external partners, also to shift demands for flexibility onto them. An obvious example are customer services in the public sector, where outsourcing often brings expanded service times and more varied service delivery channels (face-to-face, call centres, on-line self-service). On the other hand, evidence from the WORKS case studies shows that the needs for flexibility cannot in all cases be mechanically divided up, neither between labour market segments, nor within value chains. Rather, we observe new interferences of functional and numerical, internal and external flexibility, and indeed, some restructuring processes generate rigidities of their own.

As value chains lengthen, interfaces multiply within and across organisations with regard to both co-ordination and control of work. Increased standardisation and codification of procedures and indicators can be seen as attempts to reduce this newly-generated complexity. On the one hand, such standardisation may end up reducing flexibility. On the other, it may increase the need for communication and mutual accommodation of standards and situations (Wehrsig & Tacke, 1992; Braczyk, 1993; Marchington, Vincent & Cooke, 2005). These requirements frequently are shifted onto workers who, in addition to functional flexibility, provide what we call *ad hoc* flexibility and an ability to multitask. The notion of *ad hoc* flexibility adds a dimension to the established concepts of numerical/functional and internal/external flexibility which becomes obvious when looking at the level of the workplace and the work situation. Increasing demands for *ad hoc* flexibility thus are a corollary of the standardisation of work. Standardised procedures need to be interpreted and contextualised with regard to their applicability and limitations. *Ad hoc* flexibility comes close to what the WORKS report on skills (Ramioul & de Vroom, 2009) calls an 'intensification of skill'.

This chapter addresses changes in work organisation firstly with regard to the indicators on work complexity and intensity that the WORKS project developed from survey data (Paragraphs 5.1.1 and 5.1.2) and the case study evidence for new divisions of labour (Paragraph 5.1.3). Then we analyse the occurrence of teamwork both on the societal level (Paragraphs 5.2.1 and 5.2.2) and in the case studies (Paragraph 5.2.3). Section 5.3 investigates the dimensions of a standardisation of work and codification of knowledge and their implications for flexibility. Section 5.4 addresses the effects of the observed patterns on actual and potential knowledge circulation and innovative capacity specifically. As employees' subjectivity remains a crucial resource of *ad hoc* and functional flexibility, Section 5.5 investigates how the new and intensified demands on workers fit in with their occupational identities. Section 5.6 reports on the demands for mobile and off-site work in restructured value chains.

5.1 Internal-functional flexibility: old and new functions

5.1.1 New forms of work organisation and job complexity

Internal-functional flexibility is generally considered to be the hallmark of 'new forms of work organisation'. Most studies agree that in a context of rapidly changing environments it seems increasingly inefficient to operate in a hierarchical organisation with many vertical layers. The development of a learning economy is expected to confront individuals and companies with new demands. The emphasis on new organisational forms is likely to grow and to promote functional flexibility and networking capabilities to speed up information flows and responsiveness within and between organisations. Such new forms refer to the following organisational characteristics and practices: cross-occupational working groups, integration of functions, softened demarcations between tasks and jobs, delegation of responsibility, self directed teams (Nielsen & Lundvall, 2003: 14). In many instances relational contracting and networking beyond the boundaries of one organisation are supposed to enhance functional flexibility (Nielsen & Lundvall, 2003: 3).

In the WORKS quantitative analyses of the European Working Conditions Surveys data, work organisation was investigated through three main dimensions: work co-ordination, work intensity and working conditions. The first dimension refers to the design of tasks and the division of labour between employees, which have important consequences for knowledge and learning in work. Here we focus on work co-ordination as it is the most pertinent for the purpose of capturing the extent of internal-functional flexibility and the associated 'new' workplace practices such as multitasking, quality control, horizontal communications, continuous learning, *etc.* Through multiple correspondence analysis on relevant aspects of work two synthetic indicators were constructed for work co-ordination: 'work complexity' (Figure 5.1) and 'independence in time allocation' (see Section 5.2.2). With respect to work complexity we find that jobs involving complex tasks also entail meeting precise quality standards, self-assessing the quality of one's work, rotating tasks between colleagues, solving unforeseen problems, and learning new things (and, to a smaller extent, being able to change the order of tasks and methods of work). At the opposite end employees who report that their work is not complex, also say that they are not able to change or choose their methods of work and order of tasks, that they do not solve unforeseen problems or assess the quality of their work themselves, and that they do not feel that they are learning new things. 'The fact that complexity, discretion and learning goes hand in hand with each other supports the idea of the existence of a learning model of organisation' (Greenan, Kalugina & Walkowiak, 2007: 16). Thus, 'work complexity' is a better indicator of internal-functional flexibility and multitasking than the often-used proxy of teamwork (see Section 5.2.1). It measures task complexity and learning opportunities directly, whereas teamwork can be organised in different models which offer different learning opportunities for employees as Lorenz and Valeyre (2005) have shown for the previous wave of EWCS.

Looking at countries with diverse prevalent patterns of work organisation, complex jobs involving discretion and learning are likely to concentrate in countries known to have adopted new forms of work organisation. Lundvall (2005) suggests that more 'advanced' countries should have a greater proportion of workers performing complex tasks. With regard to value chain restructuring we may hypothesise likewise that countries whose

industries are known to take a higher position in the value chain should have a greater proportion of workers performing complex tasks. The reason for that is that simpler jobs are easier to outsource and outsourced jobs tend to be more standardised. The mapping of complex/routine jobs among European countries carried out by WORKS partially confirms these hypotheses as well as the results of Lorenz and Valeyre (2005). Generally speaking, workers in Scandinavian countries and the Netherlands perform complex tasks most frequently - although Malta surprisingly is ranked in the fourth position, and Estonia is ranked sixth. In Southern countries such as Portugal and Greece and the New Member States routine jobs are more frequent. Notably, the general level of work complexity for EU-15 has decreased significantly during the period of 1995-2005, whereas it has increased for the New Member States.

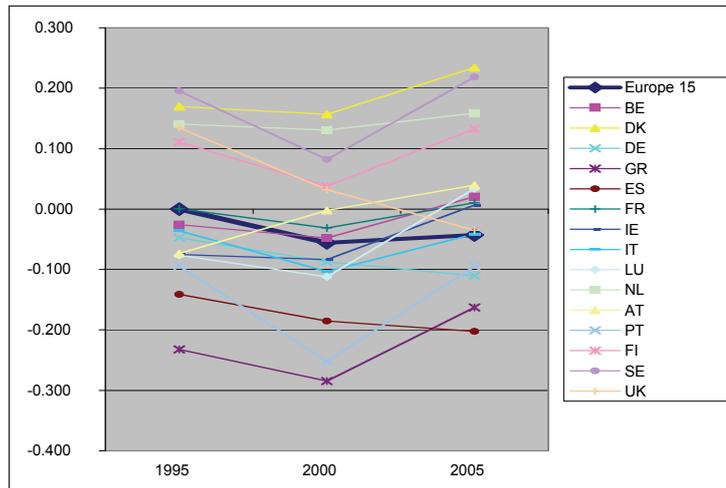
According to the analysis carried out:

1. in EU-15 there is a certain decrease in complexity of work between 1995 and 2005. Upon a closer look, an even larger decrease has been recorded between 1995 and 2000 which and has been recovered only partially since. In other words, in the last ten years on average there is a decline in the possibility for workers to change their order of tasks and methods of work. Jobs now involve a lower degree of solving unforeseen problems, of complex tasks or learning opportunities than ten years ago (Birindelli & Rustichelli, 2007: 6);
2. Scandinavian countries and the Netherlands score highest on work complexity among EU-15 countries, whereas Spain, Portugal, Greece and, surprisingly, Germany score low;
3. while from 1995 to 2005 work complexity declined in the EU-15 as a whole, it is noteworthy that it actually increased in the countries where it was already high in 1995 (Sweden, Denmark, Finland, the Netherlands). On the country level a decline was found in the UK and, to a lesser degree, in Germany, Italy and Spain. This means that work complexity during 1995-2005 has been increasing in most EU-15 countries, but it has been declining in the most populous ones (which explains the decline in the weighted average of the EU-15 but can itself hardly be explained by shifts in the position of these countries' industries in globalising value chains). Hence, whereas more complex jobs occur in countries with advanced economies and industries in central positions in the respective value chains, not all countries with advanced economies keep increasing their job complexity. Ongoing progress in this respect is restricted to the Scandinavian countries and the Netherlands, possibly enabled by the specific shape of their welfare states and industrial relations systems (Traxler, Blaschke & Kittel, 2001; Anxo & Niklasson, 2004);
4. another aspect of this differentiation is that it is the countries with a high percentage of part-time employment are characterised by a high degree of work complexity (Greenan *et al.*, 2007: 50, Table 4.3);
5. based on 2000-2001 data, work complexity increased significantly in the New Member States while in the EU-15 it has remained constant (declined from 1995 level) (Greenan *et al.*, 2007: 32, 39).

On the level of individuals, the multiple correspondence analysis conducted in WORKS reveals important correlations between a person's degree of work complexity and certain other characteristics. It is found that the statistically typical employee in a job that requires performing complex tasks is a man, who is not too young. He works with a computer, has

supervision responsibilities and is in a skilled occupation outside the manufacturing sector. There is a significant correlation between an individual's type of employment contract and the degree of his/her job complexity: An individual who works under an indefinite contract is significantly more likely to have a complex job than an individual working under a fixed-term contract (Greenan *et al.*, 2007: 48ff.). So is a self-employed individual. In addition, countries where job complexity is high have a well-educated work force, a strongly feminised economy with an important proportion of part-time workers and a low proportion of young workers (Greenan *et al.*, 2007: 48-50).

Figure 5.1 Job complexity



Source: Greenan *et al.*, 2007: 33

The WORKS analysis of job complexity by country concludes that, all things being equal, women perform more routine jobs. Yet, somehow paradoxically, it is also found that the countries with greater percentage of women in the economically active population are characterised by a higher degree of work complexity. The fact that women tend to concentrate in jobs with fewer learning opportunities, while the feminisation of the work force goes with the economic and social development of the country as a whole is indicative of the tensions between formal policies for equality, the inclusion of women in the labour market, and the reproduction of gender hierarchies within firms.

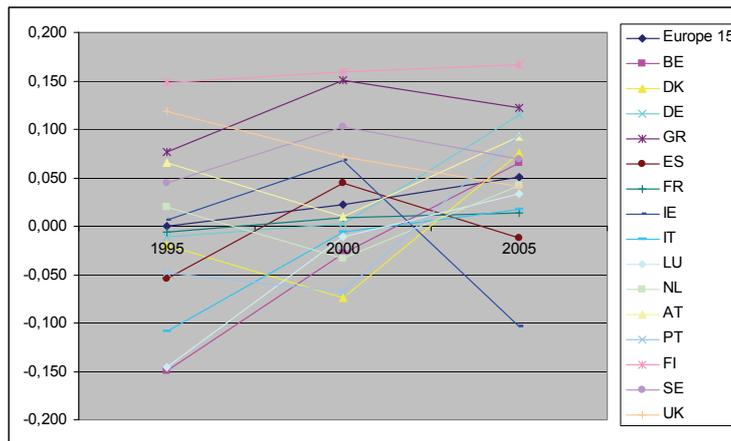
Compared to manufacturing, all other sectors have more complex jobs. Compared to plant and machinery workers, work complexity is higher in almost all other occupations. There is also a positive correlation between work complexity and working in the public sector, and between work complexity and jobs involving working with computers. The latter confirms Athey and Stern's (1998) argument about a positive correlation between IT and innovative work organisation practices (Greenan *et al.*, 2007: 53). New technologies continue to facilitate internal-functional flexibility rather than replacing it with automated routines.

5.1.2 Work intensity (market and technology)

An important characteristic of work organisation, which is particularly indicative of the quality of work, is the intensity of work. Studies suggest that a rising work effort is a feature of new forms of work organisation, and that it has a detrimental effect on the work quality and the well-being of the work force (Karasek & Theorell, 1990; Askenazy, Caroli & Marcus, 2002; Boisard, Cartron, Gollac, Valeyre & Besançon, 2003). Through its multiple correspondence analysis of EWCS data, WORKS has constructed two synthetic indicators of work intensity which capture distinct sources of work intensity, that is, technical and market-based constraints. Constraints in this context mean the pressures these factors exert on work rhythm and on the time workers have to perform their tasks and get the job done. The indicator 'intensity of technical constraints' includes constraints linked to the automatic speed of a machine, to the movements of a product, to numerical production targets but also to the direct control of a manager (reflecting a hierarchical organisation of work). The other indicator, 'intensity of market constraints' reflects the degree to which work pace is dependent on direct demands from people such as customers, passengers, pupils, patients *etc.*, as well as the fact of not having enough time to get the job done without direct control by a manager (which reflects a flatter work-organisational hierarchy). High intensity of technical constraints and high intensity of market constraints are both positively correlated with 'working at a very high speed' and 'working to tight deadlines', but these indicators have the added virtue of distinguishing two different sources of work intensity (Greenan *et al.*, 2007: 20-23).

While there is no direct relationship between these two types of work intensity, it is plausible to hypothesise that workers in organisations with high levels of functional flexibility (measured by the complexity of work) are more likely to report market-driven work intensification rather than technology-driven work intensification. Indeed, the complexity of work is positively and significantly correlated with the intensity of market constraints, whereas it is not significantly correlated with the intensity of technical constraints. A possible explanation is that high technical constraints relate to situations where work is more standardised (as in traditional, assembly-line type work organisations), leaving less room for discretion and learning, whereas work contexts where direct demands from people are high are inevitably less standardised. Some discretion may contribute to customer orientation by improving responsiveness to the frequent unforeseen contingencies that are encountered in interactive service work (as well as other new forms of work organisation promoting internal-functional flexibility) (Greenan *et al.*, 2007: 28-29).

The WORKS analysis of EWCS data confirms the expectation that workers in more advanced countries (along the value chain) face market-driven intensification of work rather than technology-driven intensification of work, although the correlation is not very strong (Figures 5.2 and 5.3).

Figure 5.2 Technology-driven work intensity, EU-15

Source: Greenan *et al.*, 2007: 36

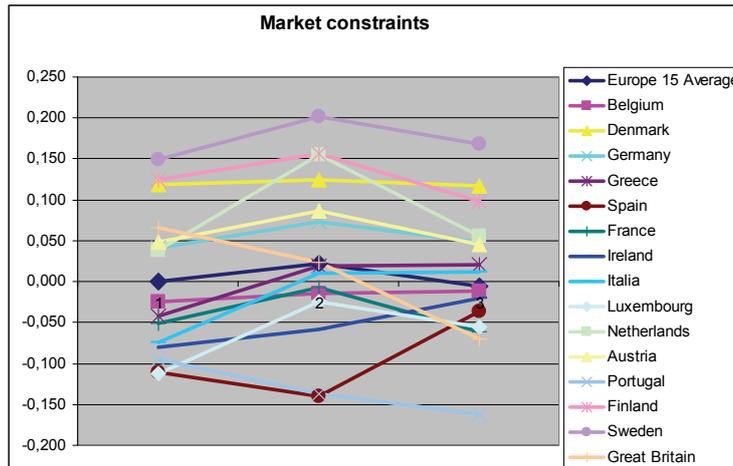
Between 1995 and 2005 the technology-driven intensity of work has increased in the EU-15 (Figure 5.2). However, controlling for sectoral and occupational changes within the same period reveals little change within sectors and occupations (Greenan *et al.*, 2007: 83). This means that the significant increase in technology-driven work intensity recorded between 1995 and 2005 is fully attributable to changes in the sectoral and occupational composition of the economy – rather than to organisational changes within sectors and occupations. The highest technology-driven constraints are found, rather unexpectedly, in such diverse countries (from a work organisation point of view) as Finland, Greece, Germany and Luxembourg.

Results for the intensity of market-driven constraints on work rhythm are more consistent with our expectations (Figure 5.3). The highest intensity of market-driven constraints (work dependent on direct demands from people such as customers, passengers, pupils, patients, *etc.*) is observed in Scandinavian countries, the Netherlands and Austria (where new forms of work organisation are more prevalent). In Spain, Portugal and Greece (where traditional forms of work organisation prevail) these constraints are less developed (Greenan *et al.*, 2007: 24). Market-driven work intensity has not changed significantly between 1995 and 2005.

Multifactor analysis of EU-15 countries gives us certain interesting correlations between the type of employment contract and the degree and type of work intensity employees are likely to be facing at work:

- workers on an unlimited contract are more likely to be working under high market-driven constraints than temporary (fixed-term) workers (Greenan *et al.*, 2007: 50);
- workers under an unlimited contract are also slightly more likely to be working under high technical constraints than temporary workers (Greenan *et al.*, 2007: 59).

Figure 5.3 Market-driven work intensity, EU-15



Source: Greenan *et al.*, 2007: 37

For the twelve New Member States and the period 2001-2005, the results of the WORKS analysis reveal the following situation:

- in absolute value the intensity of technical constraints is quite comparable between the twelve New Member States and the EU-15 (the latter refer to the period 2000-2005);
- technical constraints have decreased in the twelve New Member States, while they increased significantly in the EU-15;
- market constraints are generally lower in the twelve New Member States than in the EU-15;
- market constraints have decreased significantly in the twelve New Member States, as well as in the EU-15 (Greenan *et al.*, 2007: 39-42).

All in all, neither value chain restructuring, increased pressures for flexibility nor other factors appear to push work organisation in Europe uniformly into a direction of higher work complexity and increasing work intensification. Surprisingly, it is the technical constraints on the rhythm and timing of work that have most consistently increased in EU-15 whereas in spite of ongoing tertiarisation (cf. Bosch & Wagner, 2005) market constraints are on the decrease or constant.

However, actual changes in work organisation can be observed on the level of the case studies. Here, work intensification and a general speed-up are observed generally, with different implications for functional flexibility.

5.1.3 Old and new functions

As such diverse functions as fashion design, software R&D, postal and railway services and, also (in a more indirect or symbolic sense) health and public administration move closer to the market and seek to improve their responsiveness to market demands, they frequently generate new functions and divisions of labour within and between companies

that are observed in the case studies. Specialisation and functional flexibility interact here, as specialists increasingly communicate and negotiate with other units and specialists. Mostly, for workers this implies an increased variety and simultaneity of tasks and of cognitive perspectives that need to be included in the performance of their tasks. However, the enlargement of jobs and responsibilities comes with increased pressures on time and performance and often enough, is not supported by training and/or improved remuneration. Thus, even where value chain restructuring offers new opportunities of challenging and interesting work, this does not necessarily translate into more favourable working conditions. This pattern mostly applies to the more knowledge-intensive and higher value-added functions in the value chain, which also to some extent include logistics. On the other hand, in the production of food and clothing, and also in the outsourced customer services, we find ongoing or even revived Taylorist patterns of work organisation.

For example, in the *clothing industry*, as fashion collections are adapted continuously rather than seasonally, designers use the immediate feedback of sales figures along with creative and artistic input into their work and closely collaborate with marketing from the beginning. As time-to-market shortens, designers' communication and co-ordination with pattern makers and production engineers intensifies as well. As more tasks are done simultaneously, some cycles of improvements and corrections are eliminated: 'And if we make too many corrections, we'll never see them at the end, we have to launch production directly so we have very little time available to react, so we have to be very self-confident', says a French designer (Muchnik, 2007b). Companies which have outsourced production such as the French *Adele* or Belgian *Wonderwear*, or act as intermediaries such as Portugal's *WW-DK* (who organise the entire value chain on behalf of labels and retail chains) have moved up the value chain and continue to control and manage their subcontractors' processes, often through IT mediated enterprise resource planning and workflow management systems that are used across companies. The production work remaining in the original countries has been upgraded to prototyping work, enriching and enlarging the jobs of seamstresses (De Bruyn & Ramioul, 2007a).

For subcontractors who manufacture clothing (and may in turn subcontract part of it), flexibility remains on traditional paths with assembly-line work, although in the interface positions of production planning and quality assurance, the intensive and speeded-up learning from customers remains part of the job. Where the logistics function is retained within the clothing industry, it focuses on storage, labelling and distribution and some quality control. Transport is outsourced to generic logistics companies. Logistics companies in the case study increase functional flexibility as demands for reliability increase. At the German *Eco-Clothing*, a low-tech and participatory approach to logistics is actually retained in spite of the mother company's attempts to consolidate and standardise logistics operations across the company. Hence, as standardised work and production is outsourced and offshored, the companies remaining in Europe necessarily increase internal and functional flexibility.

In the *food industry*, retail's increased demand for reliable deliveries and high quality at low prices has not changed work organisation much. Divisions of labour follow traditional labour market segmentations, and flexibility is mostly required with regard to the seasons. Work is mostly Taylorised, although some job rotation is used to compensate the physical demands of heavy labour in, for example, freezing conditions, or to give workers

the number of working days their seasonal contract stipulates. Again, as logistics services become more critical to the value chain, we find some devolution of planning and coordinating tasks on the shop floor.

The hi-tech sector of *software R&D and production* is obviously less dependent on the making and transport of physical goods. Again, information and collaboration needs increase and multiply within and beyond organisations, although there is some specialisation as well. In R&D, some newly established public-sector research organisations with the mission to bring research findings closer to marketable products offer companies opportunities to outsource basic or exploratory stages of the research process. These units often experiment with the location of their new marketing and project management activities. Some new positions are filled by people with business or generalist backgrounds, but mostly research organisations find that these tasks cannot be fully separated from researchers' activities as their expertise is needed to effectively market and manage research projects. Hence, we find close collaboration between the new generalists and researchers and mutual learning - and sometimes research organisations even manage to fit formal training in project management in with young researchers' ongoing academic training as in the case of Austria's IT Research Labs. Former basic research units of large companies such as the French ComTel, in turn, find themselves increasingly co-managed by marketing and note a loss of freedom in the choice of their research subjects and projects: 'In the previous mechanism, the R&D Centre had to sign a "fictitious" contract with a business unit in order to finance its activities on research projects. The researchers had to satisfy a demand, or find common interests with a business unit. It was a customer/supplier relationship between the R&D and Marketing divisions. The new organisation instead introduces a matrix relationship through corporate marketing. [...] The new organisation seeks the concomitance in the decision process. For each programme or project at all levels of decision, one responsible for each division (R&D, information systems and marketing) is in charge of the management and this head composed by three persons has to be in regular and physical contact to discuss and take decisions together at the same time, in the same place.' (Muchnik, 2007a: 11).

In customer service in the public sector and the privatised services, the function itself can be said to be inherently flexible as clients' and customer demands are somewhat unpredictable (cf. Korczynski, 2001; Holtgrewe & Kerst, 2002). Differentiating between call centre services, face-to-face service functions and sometimes self-service leads to new specialisations and new work roles: call centre agents take over work from civil servants who also handle phone enquiries from their desks. Here, on the one hand, jobs are narrowed down, and frequently, escape routes from the strains of continuous customer contact are blocked off. On the other hand, clerks handling face-to-face contact may benefit from the outsourcing as they are now shielded from continuous interruptions by the phone. However, in order to deliver customer service remotely, customer and service information needs to be codified in databases that are shared by the different service delivery units. Their activities are often co-ordinated through standardised workflow systems that bridge organisations. Thus, indirectly, the intensification of work associated with outsourcing affects both outsourced and in-house jobs and increases the pressure on core workers who remain in the public sector.

IT services that are outsourced from the public sector face similar changes. In early stages, functions and work roles often remain much the same although personnel and

their contracts are transferred to service providers. Still, public sector agencies frequently find that as customers, in order to control and supervise their IT subcontractors, they need to develop new functions of liaison and boundary-spanning rather than handing off entire modules of work. After outsourcing, administrations thus set up entire new ICT units or individual positions and may divide liaison functions between the handling of contracts and day-to-day, operational collaboration. These positions may provide opportunities for workers from previous internal IT departments to avoid moving to service providers, or new employees may be recruited for these positions. Where service outsourcing from the public sector is accompanied by new steering instruments such as service level agreements (SLAs, see Paragraph 4.3), liaison tasks will comprise continuous negotiation over the interpretation of these agreements and over fulfilment or deviations (cf. Marchington, Vincent & Cook, 2005).

5.2 Teamwork and project work

5.2.1 Teamwork

Teamwork has traditionally been regarded as a hallmark of functional flexibility (Batt & Doellgast, 2005). Although it may take different forms (from semi-autonomous to lean teams), it is broadly accepted as a new form of work organisation that departs (to a larger or smaller extent) from the traditional model based on narrow and individualised work assignments. Teamwork appears to be present in most organisations. However, upon closer investigation of the real content of teamwork, enthusiasm quickly drops. The dominant team type has limited autonomy and a fixed team leader appointed by management and is referred to as a 'lean' team (Ramioul & Huys, 2007: 12).

Organisations with teamwork are typically young organisations and they are mainly found in health care, education, financial services or the metal and electronics sectors. Teamwork is most present in organisations with a knowledge-intensive character in which complex work prevails and who are confronted with high client specificity and important fluctuations in demand (*ibid.*). The WORKS project investigated a range of recent country studies and surveys that address the properties of teamwork:

1. in Belgium, working with people or customers rather than working with technology or information has been found to further the development and implementation of teamwork. The reason for that may be that in interactive services, teams provide a basis for the scheduling of staffing when fixed working times cannot be individually defined due to the volatility of customer demand (Ramioul & Huys, 2007: 13);
2. according to Kersley *et al.* (2006), in the UK the incidence of teamwork and multi-tasking has hardly changed between 1998-2004. Organisations that share all characteristics of teamwork are still an exception there (Ramioul & Huys, 2007: 13). Mostly, companies implement only a limited number of features such as responsibility of teams for specific products or services, team members being dependent on each other's work to be able to do their job, rotation of tasks, joint decisions on how work is to be done, team members being able to appoint their own team leaders;
3. even with these limitations, in the UK team production is a good bet for enhancing organisational performance (Devaro, 2006). In a large cross-section of British organisations Devaro found that the median organisation enjoys a considerable increase in the

probability of higher financial performance by using team production. However, contrary to the assumption that self-managed teams are preferable to closely-managed teams, the evidence suggests that non-autonomous teams are doing no worse than autonomous teams (regardless of the autonomy measure considered) (Ramioul & Huys, 2007: 24-25);

4. the most globalised and competitive French organisations are still more oriented towards a centralised lean-production model than to more decentralised organisational forms (Ramioul & Huys, 2007: 14);
5. according to Lund and Gjerding (1996), flexible firms in Denmark - understood as those capable of responding to a changing environment with new products and technology - make less and less use of routine work and more and more use of intra-organisational co-operation.

5.2.2 Teamwork in the case studies

Overall, the restructuring of work across diverse organisations does not necessarily increase the use of teamwork or other high-performance work practices in the case studies either. At the lower end of the value chain, generally work is likely to become more standardised and subdivided into narrower tasks. However, there are a few cases where during restructuring, new technology and automation have enabled some improvement on very repetitive work. Value chain restructuring on its own does not contribute much to increases in functional flexibility of operative and low-skilled work in production and services, and most teamwork and job enrichment arrangements have other causes, not least a commitment by management to more enriched job designs and/or workers' own initiative to improve their jobs.

In the *food industry*, we find some job rotation in order to distribute work in cold and noisy environments more evenly. In the case of the relocation of frozen pea production from Greece to Bulgaria, where workloads are dictated by the pace of the incoming raw materials and the speed of the machines, Bulgarian workers have 'developed a system in which they self-regulate the duration and allocation of breaks and ask to remove workers who are not carrying their load' (Meil & Schönauer, 2008: 75). In *customer service*, little teamwork has been observed, although it is likely that service workers use either formal or informal team structures to cope with the demands of work and 'let off steam' (cf. Korczynski, 2003). In the *German railways*, service workers have fended off an attempt by management to remove opportunities to rotate work at the customer helpdesk with work on the platforms on an *ad hoc* basis (Dunkel, 2007). Job rotation is used as a welcome 'escape route' from ongoing contact with customers in situations where things get strained or emotionally charged.

In *food and clothing logistics*, which generally is gaining in importance in the value chain, we find some more innovation at the workplace than in *production*, although ongoing restructuring waves may quickly remove gains in the quality of work. In clothing logistics in Portugal and Germany, teamwork is used and responsibilities are devolved onto the shop-floor. Also, the remaining production function at Belgian *Wonderwear* shifted to prototype production with a considerable redesign of jobs from Taylorised short cycle work to whole tasks comprising the full production cycle of one product. The case of beer logistics in *Benelux* shows on the contrary how the relocation of work reverts work

organisation back to a more routinised task structure than previously. *Benelux* breweries have moved back and forth between a sequential organisation of work and a more holistic work organisation which assigned responsibilities according to geographic area. First, in the *Benelux* plant, the export department processed tasks sequentially, from taking orders, processing the orders, organising and planning transport, arranging necessary certification, arranging pre-inspections to keeping the clients informed of progress (De Bruyn & Ramioul, 2007b: 6). In a first wave of restructuring, employees were given responsibility for a geographic customer area. However, in the next wave of restructuring, when *Benelux's* logistics activities were outsourced to Prague, 'the previous sequential linear organisation of tasks was reinstated. This not only caused problems in implementation and the number of mistakes, it also meant less interesting work and a worsening of quality of work life' (Meil & Schönauer, 2008: 76).

In the knowledge-intensive sectors and business functions, specifically in *IT services* and *software R&D and development*, project work is the default mode of work organisation and it remains so, with project organisation sometimes covering different locations (Holtgrewe & Meil, 2008a & 2008b). Projects allocate people, their working time and other resources to a certain enterprise over a limited time span, for which inputs and outputs are specified by some form of external or internal contract. The tools of project management range from standardised software packages to company-specific procedures with generic, institutionalised instruments and blueprints in between. Types of projects vary with the stability and flexibility of work roles and the singularity of the products and services generated (Whitley, 2006). As projects thus temporalise organisational and transorganisational structures and processes, they are both functionally and numerically flexible almost by definition (cf. Kalkowski & Mickler, 2002; Orlikowski & Yates, 2002).

Restructured value chains, however, mean that projects become more varied in terms of time and space. Time horizons are shortened, in R&D especially, and in software development, project teams may cover different locations and are often subdivided into smaller teams who work on more modularised tasks. Under these conditions, maintaining responsiveness to external and internal markets requires specific management skills. Resources need to be assigned and negotiated for each new project, and market pressures, internal competition and professional standards need to be managed.

Indeed, especially in both public and private-sector R&D, professional standards still play a considerable part as a basis for negotiation and consensus, and they require and promote some functional flexibility that goes beyond transactional 'customer' relationships. Norway's *A NOR* for example, who develop a search engine platform for the various businesses ('verticals') of a large internet company (*Comp A*), have their work funded by these verticals. There is a continuous discussion between *A NOR*, the verticals, other parts of *Comp A* management, and users of the platform on *A NOR's* future tasks and projects. The results of this more or less formalised consultation procedure evolve into a roadmap for the next eighteen months. Thus, there is an internal 'customer' relationship with the verticals which, however, is mitigated by professional consensus-building and an ongoing exchange with the user group of the platform.

Generally, R&D projects are located in particular teams in the cases, although collaboration across teams is a possibility when a particular expertise is required as a small part of the project. Hence, where teams are mostly organised along technical specialisation, this specialisation may get in the way of functional flexibility. This tension is mostly an

issue for workers with an intermediate level of experience, as researchers usually start with fairly general tasks of coding and quality assurance, and senior researchers mostly are hired as specialists in their area.

In *software development*, companies divide tasks between setting of demands and specifications (which may involve internal or external customers), software architecture, actual programming (= coding) and testing and quality assurance (= QA), and afterwards, maintenance, sales and support. Organisations are built around technological fields (such as platforms, usability, interfaces) or applications and/or customer segments. *SoftServ Bulgaria*, an outsourcing company, is fairly unique among our cases in its 'customer-centric' structure which has internal teams responsible for customers rather than projects. This structure is supposed to foster long-term collaboration and knowledge-building and entails a general opening of organisational boundaries. Here, project teams go beyond the organisation, include the customer's side and may even involve other subcontractors of the same customer: 'It is a little bit more specific that we work as a single team together with the people in the US - the customer. It is not obligatory that things we do here will be tested only from our QA, or things that they [customer] do, will be tested only from their QA' (interview with project manager, male, 30; Galev, 2007: 12). Customers also are given some influence over the location of work in Bulgaria or in Asia.

German *Business-Software's* reorganisation is the most co-ordinated and far-reaching effort. It is characterised by increased specialisation, compartmentalisation, a loss of task diversity, and expanded documentation and code review work. 'In former times the developer has conducted trainees, accomplished consultancy, he did everything ... He wrote documentations, this all became much more specialised. Today a developer develops, a product manager writes the specifications and the developer of the documentations is doing the documentation and... In either case the functional tasks became much more smaller' (Krings *et al.*, 2007: 18).

Generally, in the software industry it is the more well-defined and circumscribed tasks such as coding, testing, QA and lower-level support that are relocated or outsourced when value chains are restructured. In some companies such as Swedish *INIT*, Hungary's *Domainsoft* or Austrian/Croatian *Messenger* this means that managers notice more change than employees because the demands on project management increase as it is done translocally while operative work changes to a lesser extent. The developments in the clothing industry are similar. However, here production is mostly offshored completely and the remaining functions including prototyping are upgraded while still being pressurised by the speed-up and intensification found along the value chain.

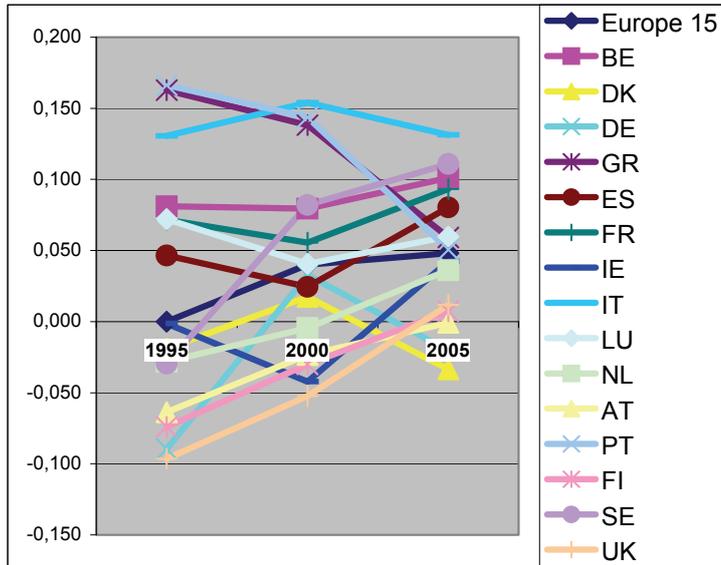
5.2.3 Independence in time allocation

With regard to working conditions, independence in time allocation provides another indicator of the effects of teamwork *versus* more modular forms of work organisation. independence in time allocation was developed as a second synthetic indicator of work co-ordination by the WORKS multiple correspondence analysis of the EWCS. Independence in time allocation means that workers can choose or change the order of tasks and take their breaks, holidays or days off when they wish. It distinguishes workers who are independent in their time allocation from those who are not because they belong to work groups in their workplace and their jobs are interdependent with colleagues' work. The

indicator thus provides a measure of actual, time-related integration of tasks and cooperation *versus* a more modular work organisation that gives workers discretion at the expense of some isolation. A high value of 'independence in time allocation' should not be mistaken as indicative of workers' time sovereignty. It is rather indicative of a low level of collectivisation of work and a low level of internal and functional flexibility in the work organisation. This becomes clear when looking at the organisational characteristics of work with independence in time allocation: there are no interdependencies between tasks either through quality norms or through job rotation, and workers are not involved in work groups (and they are not able to get assistance from colleagues).

As underlined by Chénu (2002), autonomy in working time depends on collective characteristics of sectors and occupations. It appears that workers who are constrained in their time allocation are likely to benefit more from informational learning and to perform more complex tasks because interdependencies between workers are a source of informational complementarities (Lindbeck & Snower, 1998). Indeed, in the analysis of Greenan *et al.* (2007: 17) task complexity and learning are weakly but positively correlated with low independence in time allocation. The indicator fuses together elements of functional flexibility characteristic of new forms of work organisation (through its component of learning) with elements of numerical flexibility through its component of individualised or non-team labour inputs).

Figure 5.4 Independence in time allocation, EU-15



Source: Greenan *et al.*, 2007: 34

The indicator of independence in time allocation for EU-15 shows a significant increase between 1995 and 2005, signifying a decreasing collectivisation or possibly, an increased modularisation of work (Figure 5.4). Risking some speculation we might argue that a

diffusion of this kind of decoupling of tasks is likely to facilitate further restructuring and outsourcing moves of the respective tasks. The degree of independence in time allocation is quite comparable between the EU-15 and the twelve New Member States. In the twelve New Member States there was a slight decrease in this work dimension while in the EU-15 there was an increase. The ranking of the twelve New Member States with respect to independence in time allocation is presented in Table 5.1.

Table 5.1 Independence in time allocation, 2005, New Member States

	Rank
Romania	1
Hungary	2
Malta	3
Slovakia	4
Lithuania	5
Cyprus	6
Poland	7
Latvia	8
Czech Republic	9
Bulgaria	10
Estonia	11
Slovenia	12

Source: Greenan *et al.*, 2007: 40

With respect to the relationship of this indicator to employment, it seems that having an unlimited contract is associated with a higher independence in time allocation (Greenan *et al.*, 2007: 54).

5.3 Mobile work

New demands for flexibility are also found in the spatial dimension. With the outsourcing of tasks jobs may be done remotely or, alternatively, the site of work is not identical with the location of the employer, and work may for example be done on customers' sites for longer or shorter periods of time. This issue is mostly addressed in the cases of *IT work* and here it becomes clear that in spite of the technological possibilities the location of work becomes a contested issue and may be a constraint of flexibility in a managerial sense.

Norwegian *Comp A*, a private sector IT research unit, provides an example where knowledge workers successfully defended their interest (Torvatn, Anthun & Dahl-Jørgensen, 2007). When the company was bought by an US-based internet company, 'Norway-based researchers collectively refused to move to the US to consolidate the company's research activities there. As employees were able to confidently argue that, if they wanted to move to the US, they would have done so already, workflows and communications were rearranged to suit distributed research. On the other hand, due to the centralisation of French Comtel's research activities researchers were faced with unwanted

mobility demands they could only refuse at the expense of their careers. Hence, the bargaining power of even highly qualified specialists is contingent upon both external labour markets and exit options and organisational configurations.' (Holtgrewe & Meil, 2008a: 147). In Norway, researchers managed to flexibilise the organisation in order to stay in place, whereas in France, the traditional hierarchy and centralisation of a large organisation prevailed in putting the onus of mobility on employees.

Some spatial mobility, especially short-term travel for troubleshooting missions at customer sites is a feature of work in many IT cases in both development and services. This is generally accepted although it disrupts everyday life and family arrangements. *Domainsoft's* head of business development points to the dilemma: 'If – for example – something goes wrong in Indonesia, then somebody calls us from there saying that there is about three million people unable to call each other on their mobile. In this case we have to find somebody whose first question is not about the payment details of the overtime work but who is able and willing to go urgently to the airport with his/her laptop and is prepared to tolerate the stress. Somehow it suits us more and we like it. This requires another way of thinking about (working) time and flexibility which is completely different to the usual way of thinking. These cases happen more often than before. What is difficult is that you like it when you are young but you are lacking the necessary knowledge to do it. When you are more experienced and fully able to solve these very complex problems professionally you are already married with a small house, children, dogs, etc. and this cause conflicts. It is also a special skill how to prioritise these contradictory obligations.' (cited in Makó *et al.*, 2007: 13).

In a way that is different from other cases, for Bulgarian software subcontractor *Soft-Serv* developers' reluctance to take on longer-term offsite assignments presents a constraint to the work they can take over: 'I've had customers I had to turn down, because I just couldn't get people willing to travel for a long period of time. Two weeks, three weeks – no problem. If we're talking about 3 or 6 months – there's a problem!' (CEO cited in Galev, 2007: 16f).

In the German case of IT services, a similar problem occurs (Flecker, 2008: 90). Here, consultants work on customer sites over longer periods of time up to a year. As this is unpopular and presents problems for workers' work-life balance, arrangements of remote work or limited presence on the customer's site over just a few days per week are negotiated with customers, or new sites are opened close to the customers' premises (Meil, 2007b).

Hence, it appears that sought-after IT experts are able to exert some influence over their working conditions and that in some cases, demands by customers or mother companies can be negotiated. These workers are occasionally able to have their employers flexibilise workflows and communications in their own interest – and highly-skilled IT work emerges as a less mobile activity than we might have expected as work organisation is rendered more flexible in the interest of workers.

5.4 Summary: work organisation in restructured value chains

All in all, we find that the restructuring of value chains does not necessarily foster flexible work organisation. Restructuring is diversified, and the contradictory processes of standardisation that enables outsourcing (see the next chapter), offshoring of simpler tasks

and upgrading the remaining ones, and businesses' moves up the value chain have varied impacts on the flexibility of work and organisation. This may be part of the reasons why we are not observing consistent trends of task complexity, workplace discretion or even work intensification in Europe in the quantitative analyses, where contradictory and ambiguous, context-specific developments are averaged out.

Indeed, increasing functional flexibility is rarely an explicit agenda of work reorganisation in processes of restructuring. This is occasionally part of IT outsourcing in the public sector when the aim is to gain access to technical knowledge and the implementation of new technology. It may also be part of the rationale for contracting out software R&D or, internally, for a company to buy up or merge with a R&D business. However, overall, aims of cutting cost, moving up value chains and improving competitiveness shape work organisation more than explicit functional flexibility strategies. Yet through outsourcing, new demands for functional flexibility may be added chiefly, but not exclusively, on the higher value-added side. Especially, the co-ordination of suppliers and outsourcing activities requires flexibility in terms of time (for instance communication across time zones), technical and social skills (of intercultural competency, negotiation, documentation, project management and general learning capacities). Such capabilities may be provided through additional recruitment and/or more or less formalised skill enhancement, but chiefly, are achieved through the individual skills, competencies and performance of workers in these positions. For operative and low-skilled work in production and services, value chain restructuring on its own does not contribute much to increases in functional flexibility. While some uses of information technology allow for job redesign, most teamwork and job enrichment arrangements in these functions have other causes, not least a commitment by management to more enriched job designs and/or workers' own initiative. However, in clothing production, jobs remaining in Europe in some cases have been comprehensively upgraded as mass production has moved abroad.

In addition, we have seen that companies' positions in a value chain are not static either, as they struggle to improve their position and their share in the value-added (Faust *et al.*, 2004; Huws & Dahlmann, 2007). Where they succeed in moving up the value chain, the needs for both external and internal flexibility increase as the remaining or added functions will be on the knowledge-intensive and complex side. While at the higher end of the value chain functional flexibility is based on high skills and long tenure, at the lower end numerical flexibility is made possible through the simplification of work.

Functional flexibility is, however, a corollary of companies' and public sector organisations' attempts to improve responsiveness to their respective markets. Often enough, the requirement is simply passed on to workers without improvements in work organisation. Actual patterns and changes of work organisation with regard to flexibility thus are contingent on the industry, the companies' position and previous history in the value chain, the 'nature' and material conditions of work and the national institutional context.

On the other hand, value chain restructuring and standardisation are closely interrelated, and mutually enforcing. When processes and routines are standardised, further outsourcing and relocation of work become easier over time. These moves, however, are likely to increase external and numerical rather than the internal and functional flexibility of enhanced work organisation. This means that organisational flexibility in the sense of increased responsiveness to unforeseen requirements, market turbulences or opportunities is not necessarily improved or may even be hampered by the effects of standardisa-

tion. These demands are frequently shifted onto workers' skills and informal capabilities to compensate for dysfunctional rigidities of work organisation. Ironically, thus, value chain restructuring both requires workers' functional and *ad hoc* flexibility and may endanger it through the multiplication of tasks and compression of time. This, however may also erode companies' longer term strategies of developing innovative capabilities and moving up the value chain.

6 Knowledge standardisation and innovation

An organisation's capacity for knowledge circulation and innovation is enabled by functional flexibility (Nielsen & Lundvall, 2003). This implies a longer-term perspective of both employment and worker commitment which may be put under some pressure by both standardisation and the acceleration of business cycles as it is observed in the case studies. Compared to flexibility in the sense of market responsiveness it is more proactive and more dependent on some organisational slack and space for exchange and creative thinking. While of course, all work to some extent is knowledge work and the designation as such often is a matter of unequal and gendered recognition and valuation of work as much as the structural division of labour (cf. Durbin, 2006), differences in knowledge intensity in a conventional sense make differences in terms of flexibility and innovativity. As the general questions of human capital are addressed in the thematic reports on skills (Ramioul & de Vroom, 2009), this chapter focuses on the relationship of flexibility, standardisation and knowledge work. Specific attention is given to the innovative business functions of software R&D and development and fashion design.

6.1 Standardisation and codification

Overall, value chain restructuring is both enabled by a standardisation and codification of work and in turn, drives that standardisation as work is controlled and co-ordinated across sites. Standardisation limits functional flexibility and discretion in the work organisation whereas it enables numerical flexibility both externally and internally, although hybrid developments are quite possible. The range of standardisation processes which we observe in the case studies may be part of the explanation of decreasing work complexity in several European countries as described in Section 5.1.1 - although we cannot clearly distinguish the influence of value chain restructuring from other possible causes.

However, standardisation does not necessarily mean a detailed prescription of methods and procedures of working. It rather is an embracing term that points to the common features of a variety of modes of control beyond Taylorist regimentation. They range from bureaucratic regulations and procedures to more outcome-oriented, IT-supported modes that focus on the financial discipline of accounting or project management tools or on electronic surveillance and performance measurement (Thompson & McHugh, 2002). Standardisation thus has several dimensions:⁶

- standardisation as '*technical standardisation*' means an increasing use of technical, open or proprietary standards for rationalisation of products, services and labour processes. This is mainly observable in software development, but also found in logistics with new

⁶ This systematic has been adapted from comments by Gérard Valenduc.

- standards for electronic data interchange, increasing use of integrated ERP systems and SCM (supply chain management) software;
- standardisation in the *Taylorist sense* means a fragmentation of workers' tasks, the re-composition of standard tasks by engineers; wider business process reengineering. *Taylorist standardisation* generally leads to deskilling and mainly concerns production workers;
 - standardisation as *codification of knowledge*. This is well-observable in customer services for citizens. The use of ICT tools (software scripts and internet-supported documentation in customer services, enterprise resource planning and merchandise information systems in production, workflow management, *etc.*) requires a codification of knowledge and shifts skill requirements from 'content-related' skills (increasingly codified) to communication skills and other 'soft' skills (tacit skills);
 - in addition, especially in cases involving mergers and acquisitions, there is evidence of a *formalisation* of procedures of project management, HRM or documentation.

In the *manufacturing industries* investigated, Taylorised production is still alive, but frequently assembly-line work has been located outside the range of our case studies when clothing production is offshored. The remaining manufacturing functions in clothing at least in Western Europe mostly relate to prototyping and higher quality production and thus have become less standardised with considerable job enrichment on the shop-floor. Where both client and subcontracting companies are investigated, regimentation generally is tighter in subcontracting companies and working conditions are clearly inferior. The Italian cases of food and clothing production specifically exploit differences between segments of the sector within the country (Pedaci, 2007a & 2007b). In the food sector overall, work organisation remains quite traditional and low-skilled. A traditional division of labour exists between processing and production/packaging departments with the former having higher levels of skill and higher levels of status. Some technological innovations allow for more variety and teamwork, and informal practices of rotating work are also found in order to relieve physical strain.

In outsourced or restructured *customer service operations*, Taylorist standardisation and increases in repetitive work are most prevalent in the case studies although in this function modes of control hybridise hierarchical, technological and sometimes, also cultural aspects (cf. Kinnie, Hutchinson & Purcell, 2000). Front-line workers are expected to be as interchangeable as their customers; all employees are expected to serve in a similar way and should be able to fulfil all the required tasks. In some cases, there is some kind of specialisation of units and some technical control to keep the tasks simple and to reduce the possibility of mistakes (Dunkel & Schönauer, 2008). Hence, the strive for both numerical and limited functional flexibility, is enabled by standardisation. The actual degree of standardisation is contingent upon the type of customer contact which ranges from phone directory enquiries to complex travel arrangements or emergencies. In addition, the specialisation on interactive service work deprives workers of the opportunities of face-to-face services occasionally to avoid customer contact and move 'backstage' when things get stressful. In some cases, workers have achieved some job rotation possibilities to relieve such situations. However, generally the separation of customer interaction as a business process intensifies work and limits functional flexibility. It is also associated with a comprehensive codification of specific knowledge that is transferred to data and knowl-

edge bases, and often with workflow systems that monitor the necessary steps when physical services need to be initiated as in property management or police work.

Shifting work from the public sector with its more varied and holistic tasks and skills to separate service units with newly hired employees considerably decreases functional flexibility. However, call centre agents and service representatives inevitably retain the tasks of navigating these knowledge bases and adapting the information found to the customer's problem – which requires skills of navigation and circumspection that are often underestimated but by no means trivial. Occasionally, then 'second level' helpdesks and further specialisations in complex cases are introduced.

In addition to this codification of knowledge, the technologies of call centres such as automated call distribution, also provide tools of comprehensive surveillance of work. They measure call duration, waiting times and 'calls lost' and allow for detailed monitoring of call quality (cf. Batt, 1999; Batt, Holman & Holtgrewe, 2007).⁷ While this technology is used to monitor and discipline agents to a larger or smaller extent, it also provides the information for inter-organisational controls that are implemented to ensure the performance of the subcontractor. Between clients and subcontractors, new modes of control emerge that can be described as hybrids of bureaucratic and contractual controls. They affect both *customer* and *IT services*. Service level agreements for example stipulate detailed performance data or response times for an externalised service, thus shifting the need for flexibility and timeliness onto the service provider – occasionally at the expense of actual problem-solving (Flecker, 2008). The monitoring of such agreements represents a considerable part of the new functions of 'transaction work' that develop on the client side as well as the subcontractor's. They also contribute to the expansion of bureaucracy that IT service staff note. The procedures of workflow management and detailed timekeeping are felt to get in the way of actual problem-solving which IT service engineers still regard as the core of their jobs. 'Whereas before, requests from other departments were handled on an *ad hoc* basis, now the relocated helpdesk takes down requests and the services are planned and scheduled through the information system. In addition, every task needs to be costed, which leads to a big increase in paperwork. One of the interviewees estimated he spent a third to a half of his time on costing a piece of work that will be done for a council department. This is seen by some as a waste of time and more generally as 'a change from a service-driven to a cost-driven department.' (Dahlmann, 2007c: 14; Flecker, 2008). 'For example someone has a problem with their PC in the finance department, they ring up explaining that they have a problem with the system. Before, we would come to an agreement between us when I will come and take a look at it; now the central helpdesk, they pass on the query to me and then I have a certain number of days to solve the problem; if I have a fail rate of 10 *per cent* over the month then the City council gets service credits' (Dahlmann, 2007c: 13). Working towards service level agreements thus removes some but not all discretion over the scheduling of work. It increases stress and pressures as inter-organisational controls immediately translate into performance criteria for workers. Workers also worry that performance monitoring may lead to competition between

⁷ Here, outsourced customer and IT services touch upon one another, as IT services and technology providers develop the technological bases of customer service as well. However, in the sample there are no cases covering the entire value chain of services to the public sector and it seems that so far, integrated service providers covering both ends are mostly found in the English-speaking world (Miozzo & Grimshaw, 2005; Flecker, 2007; Dahlmann, 2007b).

them and impact negatively on their collegial relationships and work climate (Flecker, 2008). In support, the distinction of first- and second-level seeks to separate out complex problem-solving and renders work on the first level more monotonous and less interesting (Dahl-Jørgensen & Torvatn, 2007).

Standardisation in the shape of increased technical standardisation and formalisation of procedures and documentation is observed in *software development*, specifically in the more integrated and centralised cases of restructuring such as Germany's *Business-Software* or Hungarian *Domainsoft*. In the *clothing industry* as well, enterprise resource planning and workflow management systems are used across organisations to control supplier companies as well. Portuguese *WW-DK* for example demands full transparency from their outsourcing partners: 'If you want to outsource efficiently, you need very open structures. So you can follow what is going on' (general manager). In order to offer the same transparency to their own customers, they developed a specific *Order Tracking System* (WW OTS) software which aims at making order tracking and workflow more transparent and easier (Woll, Vasconcelos da Silva & Moniz, 2007b: 4). When successfully implemented, such systems are likely to facilitate further relocation of tasks and projects.

However, the standardisation and formalisation of procedures is inevitably complemented by an increase in the need for communication across sites. Standardisation does not substitute but structure informality, and workers and managers need considerable and increasing skills in intercultural communication intertwined with problem-solving ability and empathy towards collaborators and customers: 'I have to know who is actually testing in India, that means when I would like to know something from the quality management, I have to phone to India, I have to communicate with these people, with all the cultural differences, I have to confront myself with the whole cultural clash', says a German project manager in software development (Krings *et al.*, 2007: 19).

Still, across industries, outsourcing and relocation of work are usually accompanied by standardisation which takes different shapes, from ongoing Taylorism in material production to a codification of knowledge and an increased formalisation of documentation in the knowledge-intensive sectors. Customer service is standardised in both dimensions: here the codification of knowledge and the connection of information and communication technologies enable attempts at Taylorist restructuring of interactive service work – up to the limitations set by the inherent unpredictability of customer interactions. Thus the interrelation of value chain restructuring and standardisation emerges as a dynamic and indeed, recursive process. When companies develop the processes and routines that support the co-ordination of distributed work by standardising requirements, product or service architectures, feedback and quality control routines, further relocation of work become increasingly easier over time, increasing the competition between locations unless they manage to specialise.

However, organisational flexibility in the sense of increased responsiveness to unforeseen requirements, market turbulences or opportunities is not necessarily increased or may even be hampered by the effects of standardisation. Ironically, thus, in all but the most operative tasks, value chain restructuring both requires workers' functional and *ad hoc* flexibility and endangers it as organisational slack and discretion are removed or replaced by the routines of documentation or automated scheduling.

6.2 Knowledge circulation and innovation

The distribution and circulation of knowledge is essential for the economic performance and innovative capability of companies and value chains. Traditionally, networks are supposed to offer the conditions for knowledge-intensive exchanges and innovative recombination of knowledge bases (cf. Powell, 1990). More market-based relationships may tend to undersupply innovative knowledge and hamper its circulation. Hierarchies may increase redundancy of knowledge, overspecialisation and lock-in. Indeed, it has been suggested that value chains are fragmenting at those points where knowledge has been rendered most explicit and codified (Von Hippel, 1994; Faust *et al.*, 2004). *Vice versa*, value chain fragmentation, increased competition within and between companies and the overall acceleration of work with its related standardisation may hinder learning and the generation and circulation of innovative knowledge.

6.2.1 The quantitative picture

Exploring the relationship between flexibility and knowledge-intensive work is tantamount to exploring the relationship between flexibility and innovation. There are two reasons for this. First, innovation represents – by definition – something new and therefore adds to existing knowledge. Second, innovation is a process where the innovating unit operates under uncertainty and therefore is confronted with unforeseen problems and needs for slack and reserve capacities (Nielsen & Lundvall, 2003: 2).

Laursen (2001) expects the effectiveness of flexible organisational practices to be greatest in knowledge-intensive organisations. Such organisations are confronted with a high rate of technological change and should benefit from a flexible, decentralised and integrated organisational structure. In addition new organisational practices can better assist in creating and utilising local knowledge, and this is of more importance to knowledge-intensive organisations. The results of his empirical analysis show that, concerning individual practices, some flexible practices such as teamwork are positively related to innovation. However, when all of the new organisational practices were combined into one single variable, the effect was found to be much stronger. New organisational practices are therefore more effective in influencing innovation performance when applied together, rather than when applied alone. Moreover, the evidence showed that the application of complementary organisational practices is more effective in more knowledge-intensive sectors as compared to less knowledge-intensive sectors.

The above results are confirmed by the study of Caroli and Van Reenen (2001). They find that, firstly, there is an association between the introduction of organisational changes and a subsequent substantial growth in value added and, secondly, that less skill-intensive organisations are significantly less likely to benefit from organisational change. British (WERS) and French (REPONSE) data confirm the presence of performance enhancing complementarities between systems of employee representation and new organisational practices such as team organisation, job rotation, quality circles and shop or service meetings which are found to positively contribute to the interdepartmental information flows and feedbacks which are critical to a company's capacity for technological innovation (Lorenz, Michie & Wilkinson, 2003). Rather than a simple causal relationship with new organisational practices leading to innovation, apparently there is

to be a two-way causality between the two. Firms operating in market segments where continuous incremental product innovation is a prerequisite for survival and firms pursuing strategies of continuous product innovation will realise that they need new, functionally flexible forms of work organisation in order to organise the different sources of knowledge required for the innovation and to cope with the unforeseen problems they encounter as part of the innovation process (Nielsen & Lundvall, 2003).

In order to investigate the relationship between work flexibility and knowledge-intensity of work, WORKS conducted a closer analysis of the European Working Conditions Survey and European Labour Force Survey for the ICT sector, which reveals the following:

1. IT workers (NACE 72) do not work in a flexible environment more often than other professions (in the UK and Germany), while the IT sector in EU-15 as a whole rarely resorts to temporary employment and no major changes have been registered in recent years. In 2004 temporary employees amounted to 8.4 *per cent* of total employment (Birindelli & Rustichelli, 2007: 7, 65);
2. information technology is complementary to new form of work organisation; workers who work with computers have more interesting and complex jobs and are more concerned with market constraints than technology-induced pacing of their work (Greenan *et al.*, 2007: 53);
3. in France, communication between workers and technicians is more intense in contexts where new organisational practices and ICTs are present. This is manifested in teamwork, information exchange, mutual co-operation, informal reunions, *etc.* all of which reflect a new form of rationalisation and use of qualifications in the process of production that seeks to involve employees at different levels more deeply;
4. functional flexibility is in fact related to the introduction of new technology. It has been shown that in Denmark (Joergensen, 1998), the introduction of information technology is accompanied by organisational change wherein jobs are more characterised by functional flexibility, delegation of responsibility and based upon co-operation and communication in internal and external networks (Ramioul & Huys, 2007: 15).

6.2.2 Knowledge codification and circulation

As we showed previously, along the value chains investigated, knowledge is codified in a variety of ways: overarchingly in the instruments of accounting and budgeting and in the specifications of contracts between firms; in the *software industry* through formal procedures of documentation and specification and of project management, in *clothing*, through the immediate feedback of sales figures and through order-tracking systems that reach across companies, and in the cases of *customer service* through customer and service databases and workflow management systems. Codification and standardisation of knowledge have been found to both enable outsourcing and relocation of work and to be enhanced by the needs to co-ordinate and control work across sites and organisations.

However, Von Hippel's (1994) argument that value chains fragment where knowledge is more easily codified or in turn, tend to remain integrated where it is tacit, contextual or 'sticky', needs some modification. Instead of a simple analogy of knowledge codification and value chain governance we find that the governance structures of value chains shape

the *dialectic* of knowledge codification and contextualisation – with frequently unintended consequences. This becomes especially clear in the cases of the innovative business functions of *software R&D and development* and *fashion design*. Codification of knowledge does not substitute contextual or tacit knowledge but apparently increases the demands and pressures on employees' capacity for sensemaking and recontextualisation, for integrating diverse perspectives and bodies of knowledge within organisations and across their boundaries. This may be one of the reasons why ICT use, complex tasks and new forms of work organisation are associated generally, whereas employees also notice an increased formalisation and bureaucratisation in the case studies and find themselves increasingly driven by market demands.

Fashion designers note a change of the knowledge base and base for creativity they employ in their work. They still take up aesthetic input from travel and observation of street life and fashion: 'We sometimes just take an hour to sit in a café and look at the people and make notes', a designer says (Woll, Vasconcelos da Silva & Moniz, 2007a: 14). This, however, increasingly collides with the general speed-up of work and multiplication of tasks that is likely to leave little time for pursuing inspiration. Design is increasingly driven by commercial data. Sales figures are analysed closely and they inform the next season's designs. Thus artistic flair needs to be combined with a capacity to process an expanding range of codified information under tightened time pressures (Flecker & Holtgrewe, 2008).

In *software development*, we see that on the organisational level, neither the codification of knowledge nor the implementation or simulation of internal market forms of coordination inherently further organisational flexibility. Indeed, they may get in the way of both a work organisation's responsiveness to market or customer demands and its internal circulation of knowledge and learning which will contribute to longer-term innovation. This happens when projects are assigned by an internal tendering procedure and locations and project teams are set to compete with each other (Holtgrewe & Meil, 2008b). In this context, knowledge becomes a competitive resource within the firm. In the case of Hungarian *Domainsoft*, internal competition between locations hampers collaboration and knowledge-sharing across sites: 'Usually, the competition between the different companies is replaced by co-operation once the decision is made on the allocation of a task into one of the subsidiaries. However, rivalry occurs regularly between the companies [...] As the quality of performance during the development a subcomponent of a project influences the further activity allocations and employment perspectives, there is a conflict of interest between the companies in sharing their knowledge with each other.' (Makó *et al.*, 2007: 11). As one project manager in this case study aptly puts the dilemma which is reiterated down the value chain: 'That was an interesting situation when we succeeded to get a job which had never been delocalised to Hungary before. This product was developed in another location for years but we gained a foothold in it for 4 months. We already had experiences of the same product within another system and the task was to implement this product into this new system. Our foreign colleagues thought that this is a violence against their authority and caused some tensions. As a consequence, if we ask something from them they will help but in doing so they try to keep as much information as possible, especially new or strategic ones. It is no more an aim to teach us for 100 per cent because thus we could jeopardise their jobs. At the same time they can not afford not to pretend being helpful. The same is true for us. Our telephone centre has a support divi-

sion in Romania, it is to them to solve eventual problems or errors, therefore they have often questions to us. Naturally, we always respond but we pay attention not to say too much from which they could take competitive advantage. Because we will be competitors on the next tender.' (*ibid.*).

Other limitations of knowledge circulation occur through remote collaboration and project management. It frequently requires both workers and managers to create procedures to improve communications., In the case of Austrian/Croatian 'Messenger' (Flecker & Schönauer, 2007), where customer contact was formally centralised and project management off-site, Croatian developers found requests unclear and communication lacking. They created a new mode of communication, building 'user cases' to communicate back and discuss in order to render expected functions more explicit. This somewhat emergent initiative to improve the basis for communication is found as a regular practice in other case of software development offshoring (Armour, 2007). Bulgaria's *SoftServ* apparently seek to overcome the limitations of a project- or technology-based structure by focusing their entire organisational structure on the customer and indeed, allowing customers' participation in decisions over the location of production or general division of labour.

6.3 Summary

It appears in these cases that tacit and codified knowledge are interrelated and remain so across fragmented value chains, but not necessarily in a harmonious way. Both (internal) market structures of governance and hierarchical divisions of labour may hinder the circulation of knowledge. Increased demands on documentation and standardised procedure render knowledge explicit but get in the way of actual, situated problem-solving and longer-term creative vision as they cut into the time and discretion workers have available for both aspects of innovation. While formalised knowledge is potentially available, it may not be actually useful. Solutions to these dilemmas apparently emerge from workers' professional outlook and their situated attempts to create procedures and examples for discussion. Again, their skills, their functional flexibility and their capacity for articulating different knowledge bases compensate for emerging rigidities of work organisation as value chains are restructured on hierarchical or market-based terms and generate dilemmas between the codification and circulation of knowledge.

The focus of this chapter on work organisation and flexibility has thus added a point to the general findings of the WORKS project that outsourcing and standardisation are recursively related: standardisation enables outsourcing enables standardisation and so on (Huws & Dahlmann, 2007). Looking at the cases, standardisation of work and codification of knowledge 'work' to a limited extent only. The need for (re-)interpretation, negotiation and sensemaking of codified bodies of knowledge is not codified away and cannot be. This echoes the Wittgensteinian idea that rule following can never be just that (Giddens, 1984), and indeed, the point has been made throughout debates on 'new' technology and work (Suchman, 1987; Bainbridge, 1987; Strauss, 1988; Böhle, 1994). It is also found in debates on knowledge management (Nonaka & Takeuchi, 1995) and the 'community of practice' idea (Lave & Wenger, 1991; Wenger, 1998). However, authors writing from a managerial perspective tend to assume loops or spirals between tacit and explicit knowledge that need to be managed properly, whereas from the evidence in the

WORKS project we argue that here, deeper-seated dilemmata and contradictions of the labour process are playing out: standardisation and new demands on tacit knowledge are interrelated, and put on workers (and their *ad hoc* functional flexibility and tacit skills) as an additional demand in both innovative business functions and the less-than-knowledge-intensive areas. Especially there, in the face of Taylorist standardisation, the remaining and increased demands on knowledge tend to be invisible and underrated, specifically when newly imposed routines get in the way of competent work performance – a classic issue in IT supported interactive service work for example, when customer interactions and knowledge bases need to be handled simultaneously (cf. Frenkel, Korczynski, Shire & Tam, 1999; Holtgrewe & Kerst, 2002).

The emergence of new demands on tacit skills and knowledge in the face of a standardisation that renders them invisible is also an issue at outsourcing destinations. The example of Croatian software engineers developing business cases to compensate for the deficits of task specifications is a case in point (Flecker & Schönauer, 2007). Indeed, remote suppliers' reserves of skill are likely to be essential for functioning co-operation along the value chain – and it is worth keeping in mind that at the lower wages of outsourcing destinations a company can hope to get more skilled labour for less money. Such extra capabilities also provide resources for companies' moving up the value chain as the case of SoftServ, Bulgaria shows – unless they are eroded by the frustrations of working 'just' on compensating deficits in work organisation along the value chain.

7 Working hours and flexibility

Increasing temporal flexibility is another aim of restructuring of value chains that is often mentioned. From the enterprises' perspective working time flexibilisation is a means to adapt working hours to fluctuation in workloads. In this case, both the duration and the timing of work (individual time arrangements) can be adapted to the peaks and troughs of workloads (Huws, 2008). Time flexibility can be described as internal-numerical flexibility, which is the capacity to adjust the number of labour inputs according to variations in demand within the bounds of the company's work force.

In this chapter the different forms of working time flexibility, which were examined in the case studies and how they developed in the course of value chain restructuring will be described. Data from all European countries will give an overview on broader developments. With regard to change, the importance of customer and market orientation will be stressed. Finally we shall discuss to what extent it is possible to speak about a balance of interests in working time flexibility between employers and employees.

7.1 Forms of working time flexibility

Generally speaking, while companies pursue temporal flexibility to a large extent, there is considerable variation in the types of working time flexibility with regard to countries, sectors and cases. Even what is regarded as 'normal' working time arrangements can vary widely from sector to sector. The expansion of working hours for example, which is very common in the IT sector, is very rare in the public sector.

However, the analysis of the European Survey on Working Time and Work-Life Balance (ESWT) (European Foundation, 2007) shows that the country in which a firm is located is the most important determinant of an organisation's time flexibility profile, reflecting differences in legal, cultural and institutional surroundings. 'The use of flexible working time arrangements is not so much the result of the necessities inherent to the production process, but rather depends on country-specific cultures in work organisation and the will of the responsible decision makers, as well as the expressed demand from part of the employees to organise work in that way' (Ramioul & Huys, 2007: 30). Combining the wide variety of flexibility indicators in the ESWT by means of latent class analysis, the European Foundation distinguishes between six types of flexibility responses among organisations in Europe that are embedded in particular countries and regions (Table 7.1). This typology refers to the amount of flexibility as well as the kind of practices that are supported (Ramioul & Huys, 2007: 40). Nordic countries can be characterised by a high level of flexibility oriented towards workers' needs, Southern countries have a comparably low degree of working time flexibility. In these countries working time flexibility

is very much firm-oriented. Central European countries lie in between. Their intermediate flexibility models are either more firm- or more worker-oriented.

Table 7.1 Summary of country profiles of time flexibility

Group	Characteristics	Countries included
Nordic	High flexibility + worker-oriented	Finland, Sweden
Central 1	High/intermediate flexibility + worker-oriented	Denmark, The Netherlands, UK, Czech Republic, Latvia, Poland
Central 2	Low/intermediate flexibility + firm-oriented	Germany, Austria, Ireland, France, Belgium, Luxembourg, Slovenia
South	Low flexibility + firm-oriented	Italy, Spain, Portugal, Greece, Cyprus, Hungary

The second most important determinant found in the ESWT is the size of the organisation, measured by the number of employees. The sector ranks third as determinant of the [time] flexibility profile of a company. Table 7.2 summarises how the time flexibility profiles are related to some firm characteristics (Ramioul & Huys, 2007).

Table 7.2 Types of time flexibility and firm characteristics

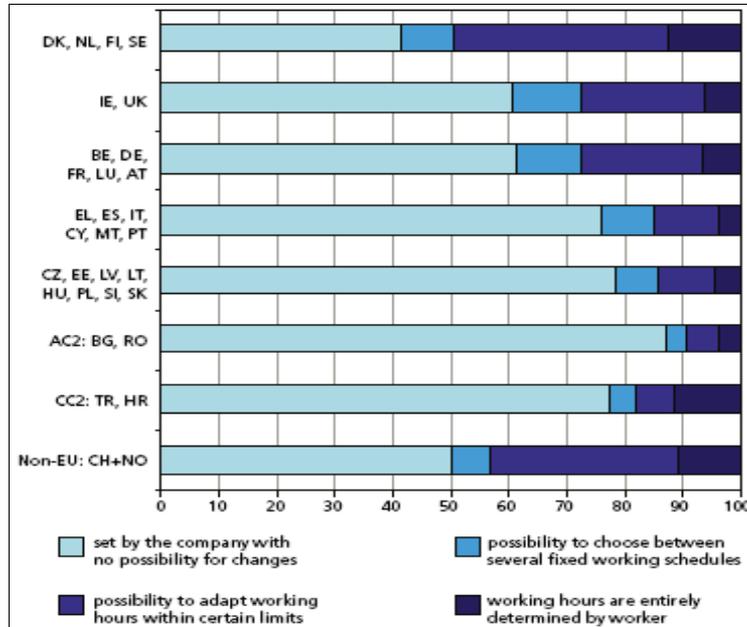
Cluster	Sector	Size	Other
<i>High flexibility</i>	Worker-oriented	Commercial services, Government	Foreseeable variation of workload, more high-skilled More low-skilled, more young employees
	Firm-oriented	Health services, Transportation	
<i>Intermediate flexibility</i>	Life course-oriented	Education	Unforeseeable variation of workload, more males
	Day-to-day	Hotels and restaurants	
	Overtime	Industry, Transportation	
<i>Low flexibility</i>	Construction, Industry	10-19 employees	Little variation of workload, less young employees

Flexibility in working time arrangements thus does not automatically mean a tendency towards atypical or precarious forms of employment. It may even limit its use as numerical flexibility may be achieved with the existing work force. Nor does work at unsocial hours, for example shift work, automatically increase a company's numerical flexibility (for more information on shift work see Krings *et al.*, 2009). However, temporal flexibility does not emerge as a pattern of simple distribution as requirements for flexibility tend to have effects beyond single segments of the work force or parts of the value chain.

Discretion and the possibility to influence working time according to individual preferences are also shaped on the country level. The WORKS analysis of the Fourth European Working Conditions Survey reports that workers in Northern countries can choose to

adapt working time to their needs to a large extent, whereas in Southern and Eastern countries more than 75 per cent of employees have no means of deciding for themselves the organisation of their working time (Figure 7.1) (Birindelli & Rustichelli, 2007: 35). These results are in line with the hypothesis that (worker-friendly) working time flexibility and functional flexibility are interrelated elements of a distinct form of work organisation.

Figure 7.1 Autonomy over working time, by group of countries (%)



Source: Birindelli *et al.*, 2007: 36 (European Foundation, 2007)

The most frequent type of working time flexibilisation in the case studies, regardless of the sector and the form of value chain restructuring, is overtime in combination with compensatory time off on the basis of a regular full-time employment. This form of working time flexibilisation is firmly tied to the internal labour market. Nevertheless it can have negative effects on work-life balance and health, due to occasionally long and unpredictable working hours. Paid overtime is rarely found in the case studies. Using flexible working hours, employers save on the cost of overtime supplements (Flecker, 2005b). Krings *et al.* (2009: 27) note that 'case studies revealed significant differences depending on the position within the value chain, becoming more flexible the further one moves away from the central node of the network company (normally the brand name owner, the source of the outsourcing process, the company that is in the position to wield a heavier clout in terms of control/domination) towards the periphery, represented by subcontractors, second-tier subcontractors, single freelance workers, outworkers'. However, central co-ordinating functions in value chains that are customer-driven may be

unable to simply pass on the needs for temporal flexibility and extend their working times to respond quickly to crises and bottlenecks along the chain.

Especially in the public sector, the extension of working time is clearly linked to the restructuring of value chains, and employers occasionally do without overtime by simply extending regular working hours. After restructuring, the management of *German Railways* for example extended working hours for one hour per week without increased pay (Dunkel, 2007). In *UK Customer*, the newly established public-private service provider, management implemented working at weekends (Dahlmann, 2007a) and at *Greek Post* overtime work became a rule after restructuring (Gavroglou, 2007c).

7.2 Part-time work

A very common form of working time flexibilisation is part-time work (see also Krings *et al.*, 2008). Indeed, across the EU-15 part-time work accounts for a disproportionate share of employment growth since 1995, which increased its proportion from 16% to 20.4% of all jobs in 2006 (Fernández-Macías & Hurley, 2008: 33). Part-time workers on average work half as many hours as full-time workers in Europe (19.7 hours/week *versus* 40.3 hours/week) (Birindelli *et al.*, 2007). By definition, part-time work implies that workers do not work the full amount of working hours; hence the distribution of working hours is relatively open. There is wide variation in the way organisations use this openness, and in general the use is not very systematic except for certain service sectors. Though part-time work is a common phenomenon in the EU-15, again, the structure of part-time work varies considerably from country to country. The proportion of part-time work is highest in the Netherlands (46.2 *per cent*), followed by the UK, Sweden, Austria, Belgium, Germany, Denmark (21-24.1 *per cent*). In Greece it is by far the lowest at 4.8 *per cent* (Birindelli & Rustichelli, 2007; Birindelli *et al.*, 2007). It is important to know that in the Netherlands, the 'social partners reached an agreement in 1999 establishing a framework for further individualisation of the terms of employment. The agreement allows unions and employers to designate a series of benefits that can be exchanged for each other.' (Berg, Appelbaum, Bailey, Kalleberg & Arne, 2004: 45). This was a step away from collectively set standards towards a more individualistic form of bargaining that nevertheless retained collective representation. In the New Member States part-time work is much less frequent than the EU-15 average, and the trend since 1997 is even declining: from 10.8 *per cent* to 8.1 *per cent* (Birindelli *et al.*, 2007: 31). In many of the New Member States this dates from the socialist past and the accompanied tradition of female full-time employment but is also due to the overall low wages in these countries. In addition, there are contractual differences. In Greece and other Southern European countries, part-time work is closely linked to fixed-term contracts. This is another reason why the social demand for part-time work is low, compared to Scandinavian countries. There, part-time work offers relatively secure employment conditions and therefore is an attractive alternative to full-time employment.

Looking at the sectoral distribution of part-time work, in public administration (NACE 75) an increasing percentage of employees are part-time workers in EU-15. Part-time incidence grew from 11.8 *per cent* in 1996 to 14.2 *per cent* in 2004. It is noteworthy that in the customer service functions part-time employment has grown even more. In 2004, more than one out of five workers in this occupation had a part-time contract, whereas in 1996

the number of part-time workers amounted to 17.6 *per cent* of total employment in this business function. This high percentage of part-time work is not uncommon in the service sector (Wagner, 2005), but contrary to EU-15, in the New Member States public administration does not make massive use of part-time employment, neither at sectoral level (3.3 *per cent* in 2004) nor in the customer service function. In the railways and postal services sector (NACE 60.1+64.1), the resort to part-time workers is fairly high as well (16.4 *per cent* in 2004). Between 2000 and 2004 this share has grown by 1.7 percentage points. With respect to activities connected to direct contact with customers, part-time work has reached 21.0 *per cent* of total employment in 2004, having increased by 4.6 points from 2000. In the New Member States, by contrast, the incidence of part-time is very low (4.8 *per cent* in 2004) with again, a slightly higher share in the customer service function at 6.2 *per cent* (Birindelli & Rustichelli, 2007: 38).

Compared to public administration, railways and postal services, sectors such as textile and clothing, the food industry and the IT sector have low levels of part-time employment. In textile and clothing (NACE 17+18) for example, part-time employment in 2004 amounted to 12.4 *per cent* in the EU-15 and 6.5 *per cent* in the New Member States. It is noteworthy that both in the EU-15 and the New Member States the part-time share in employment in the textile and clothing sector is higher than the manufacturing average and that between 2000 and 2004 it has increased by 2.1 points in Old Member States and by 1.5 points in the New Member States. Part-time work is also relatively more common among production workers than in R&D (design) or logistics functions. In the food industry (NACE 15), part-time employment increased from 11.2 *per cent* to 13 *per cent* of the total work force between 1996 and 2004. Both in production and logistics occupations, the incidence of part-time workers is lower than sectoral average (*ibid.*: 37). The IT sectors (NACE 72) resort to part-time employment is definitely limited. It has the smallest percentage of part-time employment of all the sectors investigated by WORKS. Part-time employment is not particularly widespread in the Old Member States (its incidence on total employment amounted to 9.6 *per cent* in 2004), although a slight increase by 1.5 points was registered in the last decade. Among computing professionals, architects, engineers and related professional and computer associate professionals (ISCO codes 213, 214 & 312), part-time jobs are even less frequent than the sectoral average (6.5 *per cent* in 2004) (*ibid.*: 38).

The possibility to adapt working hours and to work part-time is an important measure not only for flexibility but also for work-life balance. As we have seen, access to this employment form is not always that easy. There are organisations which do not have any tradition of part-time employment or countries where part-time employment is closely linked to fixed-term or low wage employment. The Dutch case of IT services is another example. Here, tasks of employees broadened due to the outsourcing, and training was needed to qualify staff for their changing roles. However, the higher training needs have the downside that management are less and less willing to give people part-time contracts and now only hire workers who are willing to work longer hours. This may lead to problems in reconciling employment and care work and may be detrimental to women specifically (Vandenbussche, Devos & Valenduc, 2007). Part-time work, unlike temporary work, is mostly 'voluntary' – most part-time workers would not prefer a full-time job. Involuntary part-time work as a percentage of total part-time employment ranges from 4.3 *per cent* in the Netherlands to 48.9 *per cent* in Greece (Table 7.3) – which means that the rarer part-

time work is in a country, the less do workers choose it voluntarily. Compared to 1995, in 2005 the proportion of involuntary part-time work in total part-time work increased in nearly half the countries concerned and decreased in the other half; the rate of increase is larger than the rate of decrease. Table 7.4 shows that involuntary part-time work is by far rarer among women than among men.

Table 7.3 Involuntary part-time work as percentage of total part-time employment

	1995	2005
EU-27	-	-
EU-15	18.9	-
New Member States	-	26.6
BE	28.9	16.1
BU	-	67.7
CZ	-	16.1
DK	17.1	16.4
DE	9.8	20.5
EE	-	19.2
IE	33.1	-
EL	37.5	48.9
ES	21.5	31.7
FR	39.4	29.6
IT	36.5	38.9
CY	-	28.0
LV	-	35.6
LI	-	48.2
LU	8.8	11.2
HU	-	21.6
MT	-	21.4
NL	7.2	4.3
AT	7.3	11.5
PL	-	28.4
PT	23.1	23.1
RO	-	47.5
SI	-	6.2
SL	-	19.4
FI	44.1	27.1
SE	27.9	24.8
UK	13.6	8.4
HR	-	16.8

Source: Eurostat On-line

Table 7.4 Involuntary part-time employment as percentage of total employment, by gender 2005

	Men	Women
EU-27	-	-
EU-15	-	-
NMS	26.5	26.7
BE	19.2	15.4
BU	67.5	67.9
CZ	7.7	18.8
DK	14.2	17.4
DE	32.9	18.0
EE	-	-
IE	-	-
EL	52.9	47.3
ES	31.0	31.9
FR	32.2	29.0
IT	51.6	35.3
CY	23.3	30.1
LT	43.0	30.9
LI	48.4	48.1
LU	-	10.9
HU	22.0	21.3
MT	-	19.0
NL	6.1	3.6
AT	16.0	10.6
PL	28.1	28.6
PT	15.2	27.2
RO	59.6	34.0
SI	4.3	7.7
SL	17.8	20.0
FI	24.0	28.7
SE	25.7	24.5
UK	15.2	6.5
HR	24.6	11.6

Source: Eurostat On-line

7.3 Customer/market orientation and flexible time management

While across Europe surveys do not reveal increased pressure of the market on workers (see Section 5.1.2), in the case studies this is a consistent finding. The causes and the shape of this pressure is sector-specific. Fashion markets for example change faster and faster, and retailers' and distributors' demands for rapid responses increase. Just-in-time production increases the speed of producing new collections, with the aim for companies to improve their market position. This speeding up of the whole working process results in longer working hours and high demands on temporal flexibility (Flecker et al., 2008a). Working time becomes an adjustable variable (Krings *et al.*, 2009). For instance in the case of *NewWear*, a subcontractor company in the clothing sector in Italy, employees not only have to react very flexibly but also have to catch up delays that occurred elsewhere in the value chain (Pedaci, 2007a). *WW-DK* is a Portuguese clothing intermediary that specialises in organising and controlling the value chain on behalf of brand owners and retailers. It

shows how achieving a central position in the value chain does not appear to translate into improvement of working conditions. Designers report very short development times and a constant need for speed. 'The pressure is of course much more than it was before. (...) We have to work with quick dates, and it is always a lot of pressure in our back. You can't relax in that department. Everything is very fast and if we have a problem we have to solve it very quickly. I never relax.' (a designer cited in Woll *et al.*, 2007a). *Wonderwear*, a Belgian company which produces underwear is an exception within the sector. It has managed to stay with the two-season model, but also faces increased demands by retailers for earlier delivery (De Bruyn & Ramioul, 2007a). In the food industry, time pressure results from the character of goods which are mostly perishable and seasonal either with regard to production or consumption. Hence, there is some seasonal labour, but permanent employees also have peak periods with higher and times with lower workloads, *i.e.* overtime and compensatory time off. In addition, retail exerts some pressure on speedy delivery increasing demands for more flexible working time arrangements. This also concerns the function of logistics and transport, which becomes increasingly critical for timely delivery (Meil & Schönauer, 2008).

The food and the fashion industry thus are most influenced by market- or sector specific dynamics, which prevail on organisations to increase speed of production, delivery and response to changes in the market. In service functions and immaterial production such as customer service in the public sector, IT services and software development, customers themselves are the most important reference group. In the cases of restructuring in the public sector, while service quality is rarely a key aim, an expansion of service availability (in some cases 24-hours service) is perceived as an improvement in customer orientation at low cost. However, this leads to longer and more flexible working hours. In the case of post restructuring in Sweden the use of service points with more extensive opening hours was one of the major motives for the outsourcing of customer service to service partners (Tengblad & Sternälv, 2007c). In this way, demands on flexibility are passed on to subsidiaries or subcontractors in the course of restructuring, and subcontractors in the next step pass them on to their employees.

In software development both the relevance of market and customer demands increases. Time-to-market is supposed to be speeded up, and deadlines are tightened. International collaborations with subsidiaries or subcontractors in different time zones often expand employees' working time. At *INIT*, a Swedish/American software firm, flexible working arrangements are becoming more common in terms of both time and space. Teleworking is expanding and used especially to communicate with offshored sites at unsocial hours (Tengblad & Sternälv, 2007a).

Overall, changes in working time are not automatically caused by value chain restructuring. 'Old' and sector specific patterns combine with new requirements. However, the multiplication of interfaces and needs for communication and co-ordination tends to expand working times especially in cases of distributed work. In the public sector, one trend of working time flexibilisation is quite obviously related to value chain restructuring: the bypassing of sector-specific regulation on working hours and overtime is a central motive of outsourcing. This means that organisations circumvent employment regulation, which is perceived as rigidity by outsourcing or relocation.

7.4 Balance of interests

Working time flexibility inevitably affects the work-life balance of employees. Thus it is important to distinguish between flexibility which means availability in relation to the employer and flexibility meaning individual freedom, which allows time arrangements according to employees' own needs and preferences.

Case studies show that companies' interest in working time flexibility are not always compatible with personal needs of employees. In most cases it is not flexible working hours per se, which are problematic, but the lack of influence on the timing and the length of working hours. An agent at *Customer*, a British public-private customer service provider, puts it like this, pointing out the layer of rhetoric involved specifically in restructuring in the public sector: 'Flexi working is quite a modern thing, whereas you feel as if you're going backwards, don't you?' (Dahlmann, 2007a: 6). The public sector is a sector where unions have relatively high bargaining power. In most cases they tend to use this leverage to secure stable working hours arrangements for their established constituency, the core work forces. This can lead to a segmentation of flexibility requirements such as employment of fixed-term employees or outsourcing to subcontracting companies. At *Swedish Post* for example, the restrictions on working hours for the core work force that unions enforced made employers use a more flexible work force from employment agencies (Tengblad & Sternälv, 2007c). Obviously, public-sector employment regulations have been strong enough to withstand changes, for example longer opening hours, in many countries. However, they have not just limited the availability of services for citizens but also the options for employee-oriented flexibility. In some cases, options for part-time work or flexible working hours are still rare.

Case study evidence also suggests that outsourcing no longer shields workers in core jobs from pressures on flexibility and work intensity but puts employees in the remaining public sector jobs under increasing pressure. In the Austrian *Citylife* case, the telephone service of a municipal housing administration was outsourced to a consortium of private call centres. As a result of outsourcing, time-related service standards, as they are known in call centres, have found their way into service centres of the remaining public administration unit. Employees now are required and monitored to answer 80 per cent of emails and faxes within 24 hours and to call tenants back within 24 hours. The problem is that service workers are held responsible to keep to time limits, but at the same time depend on many external time factors and service providers. In fact they have hardly any possibilities for personal time management as part-time jobs, for example, hardly exist (Schönauer, 2007).

In companies in software research and development employees generally have more chance to participate in decisions on their working time arrangements. At *SoftServ*, a Bulgarian subcontractor for software development, employees set their own working time: as long as it fits the project requirements employees are allowed to adapt working hours according to their needs (for example continuation of education, child care, etc.) (Galev, 2007). Generally employees in IT research have considerable autonomy concerning their working time compared to other sectors. But here as well, as Kratzer (2003) observed, relative autonomy can increase pressure when project resources are cut down, workers are exposed to increasingly tight financial controls, and company standards for documentation and knowledge management increase. In this configuration, stress levels tend to increase precisely because project teams enjoy a high degree of autonomy and of self-

regulation. Forms of self-organisation such as trust-based working hours then can easily lead to what Voss-Dahm (2005: 136) calls 'self-organised extension of working time'. The absence of obligatory starting and ending times and formal records is widespread in this sector, but case studies show that the degree to which discretion is translated into actual autonomy varies. Employees in IT development in Germany and Hungary report that they have hardly any leeway to use the discretion they formally have (Flecker et al., 2008a).

In general, survey data on both employees and managers show a broad consensus between the social partners that the introduction of flexible working times has had mainly positive effects. Both managers and employee representatives name a higher job satisfaction most frequently as an outcome of the introduction of flexible working time, followed by a better adaptation of working hours to workloads. Among both groups of respondents only a quite small minority perceives any negative effects (Ramioul & Huys, 2007: 30). Increasing time flexibility is not necessarily a conflictual issue: the high-flexibility firms, either labelled 'worker-oriented' or 'firm-oriented', share a range of flexible practices that serve both the employees' and the firm's needs (*ibid.*: 41). The European Foundation for the Improvement of Living and Working Conditions concludes, based on its ESWT data, that while neither the system of employee representation nor the actual quality of co-operation between management and employee representatives ultimately determine the incidence of working time arrangements that are favourable for the work-life balance of employees, both are important and significant factors (European Foundation, 2007).

7.5 Summary

With regard to working time, flexibility demands are shifted on to subcontractors or units further down the value chain who in turn pass them on to their employees. As a result, the most frequent type of working time flexibilisation in the case studies is overtime in combination with compensatory time off on the basis of a regular full-time employment. Paid overtime is rarely found, and occasionally, especially in the public sector, regular working hours are simply extended to cut cost. This form of working time flexibilisation is firmly tied to the internal labour market. Nevertheless it can have negative effects on work-life balance and health, due to occasionally long and unpredictable working hours. Krings *et al.* (2008: 27) note that 'case studies revealed significant differences depending on the position within the value chain, becoming more flexible the further one moves away from the central node of the network company (normally the brand name owner, the source of the outsourcing process, the company that is in the position to wield a heavier clout in terms of control/domination) towards the periphery, represented by subcontractors, second-tier subcontractors, single freelance workers, outworkers'. However, central co-ordinating functions in value chains that are customer-driven may be unable to simply pass on the needs for temporal flexibility and extend their working times to respond quickly to crises and bottlenecks along the chain. Especially offshoring and relocation of work expand working hours in management or co-ordinating functions as they increase communication needs across time zones.

Part-time work, either voluntarily or involuntarily, is not systematically affected by value chain restructuring and rarely is introduced as a deliberate measure of flexibilisa-

tion. Occasionally, it helps to extend service times in customer service. However, its occurrence is chiefly contingent on the national institutional context. There, in countries with little part-time work more of it is involuntary. Occasionally, part-time work is associated with precarious employment or entry positions in companies.

8 Strategies to reach flexibility in a gender perspective

In Europe, labour markets are also segmented by gender in all dimensions (horizontal, vertical, contractual, temporal and spatial), and all of these segmentations are observed in the case studies. They have the effect that men and women are affected by flexibility and the need to be flexible – internally as well as externally – in different ways. The gender-specific division of labour, also often called the ‘gender contract’ (Pfau-Effinger, 1998), within the observed organisations and within the labour market more generally implies inequality in contracts and also differences in working time arrangements. The idea of the concept is to highlight different structural and normative frames that restrict women’s (and men’s) space of action.

The WORKS analysis of the European Working Conditions Survey concludes that, all things being equal, women still perform more routine jobs (Greenan *et al.*, 2007: 49) (see also Section 4.1) and their work is mostly intensified by market constraints, while men are facing a higher incidence of ‘technology-driven work intensity’ (*ibid.*: 59). These results could be explained by the occupational segregation of women in the service sector, where work intensification is generally more market-driven (*ibid.*: 55). Krings *et al.* (2009) emphasise the necessity to integrate the division of household work between men and women in the academic as well as in the political debates on working time. One might think that traditional forms of organisation, based on Taylorist bureaucracy, where learning opportunities are weak, would have strictly defined gender roles, while new forms of organisation would favour more porous gender roles. However, the empirical research, again, contradicts this assumption (Liff & Ward, 2001; Greenan & Walkowiak, 2005).

Hebson and Grugulis (2004) assume that in contemporary ‘flexible’ organisations less strictly defined work roles favour more porous gender roles. Therefore individuals are less tied to their expected positions, and women can redefine themselves as equal to men in the world of work (Huws, 2006: 61). Yet the organisational case studies from WORKS as well as many other empirical studies show that these potential opportunities have not come into fruition. Value chain restructuring in particular does not cause much change gender composition, but trends to reproduce existing segmentations. Female dominated sectors and functions such as customer service or the clothing industry are still lower paid and have more flexible working hours which are not driven by workers’ interest. Additionally women are still less represented in management positions and if they get into a management role, this transition often coincides with a downgrading of these areas (Bradley, 1999). Sectors which are dominated by men or have a more equal gender composition (for example IT services, software development, food sector) show clear traditional vertical gender segregation. In many sectors women in non-standard flexible employment forms take on the function of a flexible employment buffer.

Case studies show that gender composition differs very much from sector to sector, but nevertheless gender segregation is a reality in all of them. The *food sector* is one of the sectors, which still has a very established form of work force segmentation according to gender and ethnicity (Flecker, Meil & Pollert, 1998). The case studies show that there is pronounced segregation according to gender in most companies. Women dominate the more monotonous jobs, for example on production lines, while all technical and more advanced tasks and higher management positions are occupied by men. For example, beer production in Bulgaria shows that women are mainly employed in units of bottling, packaging and customer service, while men dominate the production of beer. There are the same tendencies in Danish slaughterhouses and Greek vegetable factories: women are mostly found in monotonous jobs like packaging or work on the production line. In the Greek case gender segregation influences wages directly, because bonuses are considerably higher in male dominated departments (Flecker et al., 2008a).

Customer service is one of the business functions, which is disproportionately dominated by women in operative positions. For example in the public sector organisations which outsourced telephone service, 60 per cent to 70 per cent of call centre agents are women. This gender composition has not changed as a result of restructuring. Comparably low wages, flexible working hours and communication work in customer services are characteristics of traditionally female-dominated sectors, which is also true of most customer-service occupations. Case studies show that women are more likely to cope with tough conditions of customer service work than men. Especially in customer services we find a lot of overqualified women in simple jobs, who serve as a resource of unrecognised functional flexibility (Holtgrewe, 2006b; Dunkel & Schönauer, 2008).

The clothing sector is another women-dominated sector, which in Europe is mostly characterised by relatively stable standard employment relationships. Part-time work tends to be an exception but occasionally is made to fit in with shift work ('housewife shifts' in German *Trousers*) (Flecker & Holtgrewe, 2008b). Designers at companies in Germany and Portugal report that their job is increasingly becoming a full-time-plus occupation and that they see difficulties in the combination of career and family planning. In the French case *Adele*, which produces and distributes medium to high-fashion women's clothes, women report an enlargement and enrichment of tasks due to the restructuring of the value chain. The company outsourced bad jobs in production to Central and Eastern Europe and Asia, and subsequently female workers in France were able to get into positions where women were not present before. Subcontractors usually organise production in assembly lines with highly repetitive work.

The hypothesis that women are often found on the bottom of hierarchies in the most unattractive jobs has to be rejected as a general statement. It can be partly confirmed for sectors of manufacturing. In the clothing industry as well as in outsourced public sector jobs women do not only work in low-skilled, flexible jobs that are subject to rapid variations over the business cycle, but that they also have made their way into core jobs of the organisations which nevertheless are often located in low paid and unprotected parts of the jobs hierarchy (Rubery, 2006). However, it is the women-dominated sectors in which the immediate effects of restructuring on the quality of work are most striking: Manufacturing work in clothing is mostly relocated outside Europe where problematic working conditions and precarious employment continue to affect women, whereas in Europe, even an upgrading of skill is possible. In customer service, a formerly protected and com-

paratively well-paid segment of women's employment is being moved outside the public sector and faces a considerable precarisation of work, especially in countries with traditional dual labour markets and male-breadwinner gender regimes.

The knowledge-intensive sectors show a more differentiated gender division. Cases studies in IT research and software development revealed that in those organisations where transdisciplinary beyond computer science increases, and/or new marketing and project management positions are created, more women fill these positions than those in traditional computer science-oriented fields that are shaped by male-dominated professional and hacker cultures. On the other hand, at *SoftServ*, a Bulgarian software company, we find a strict gender difference in the careers of software developers and quality assurance engineers. For men, QA is one of the entry positions in the company from which they move into developer positions. For the majority of the thirty women working in the company as QA engineers, either opportunities or the desire to move on to software development apparently are more limited, which managers describe as a 'natural' talent of women for quality assurance (Holtgrewe & Meil, 2008b: 58).

As we have seen before, outsourcing has not as negative effects on employment conditions in the IT sector as it has in other sectors such as the public sector. While in the female-dominated public sector it leads to increasing precarisation, it does not change much in the male-dominated IT sector. However, gender issues in IT services showed marked international differences between the Scandinavian and the continental European countries. This relates to the proportion of women among the IT workers and gender-discrimination practices. In the Belgian case, for example, management does not want to employ women, because these are seen as not being able to provide for 'total involvement' and to work extensive overtime. Generally, outsourcing seems to be detrimental to women even in the Scandinavian and UK cases, where more gender equality can be expected. One reason for this is that public-sector organisations are more likely to have equal-opportunity policies. Others are increased pressures for flexibility and bigger problems in reconciling employment with care duties.

All in all, changes caused by outsourcing generally seem to be detrimental to women as women concentrate in the sector with the most adversarial effects such as more pressures for flexibility (Tengblad & Sternälv, 2007b), weaker equal opportunities and diversity policies (Dahlmann, 2007a), and increasing problems in reconciling employment with care duties (Bannink, Hoogenboom & Trommel, 2007), and some wage discrimination because of differences between men and women in formal education (Dahl-Jørgensen & Torvatn, 2007).

9 Flexibility and the quality of work

Overall, the flexibility that is either explicitly or implicitly required by value chain restructuring affects the quality of work in multiple ways. Increased numerical and functional, external and internal flexibility are no longer alternative strategies (if they ever have been) but interrelated processes.

9.1 Case study evidence

Obviously, as both the case study analyses and the quantitative data show, work has neither been comprehensively degraded in the last ten years in the sense of sweeping deskilling and precarisation, nor do we find widespread progress in the sense of increasingly complex work combined with worker discretion, enhanced skills and opportunities for learning. Indeed, the quantitative data show that such progress with regard to work complexity has concentrated in the Scandinavian countries continuing from an already high level. The case studies also show that both in the public sector and in IT Scandinavian workers have realised the most beneficial effects from outsourcing and have been able to retain favourable working conditions so that we may conclude that the Scandinavian production 'model' retains an influence on 'high road' strategies.

Overall, the most comprehensive effects of value chain restructuring observed in the case studies are increased temporal pressures from customers and/or tightened control mechanisms, expanded responsibilities and a multiplication of perspectives and demands for workers to keep in mind. However, they are not mirrored in the EWCS data where technology-driven work intensity is on the increase rather than market-driven intensity.

The most notable decrease in working conditions with regard to pay, precarious employment and standardised work is found in the customer service function of the public sector and the services of public interest which formerly offered comparatively secure, skilled employment especially to women. Here, precarious employment is widely used, the service function is deskilled and driven by both technical control and customer demands. In the more blue-collar and lower-skilled sectors of food and clothing developments are more varied. In the food sector, numerical, ethnically structured flexibility is traditional and we see some outsourcing to lower-wage countries or segments along these lines. In clothing production and logistics, European companies are moving up the value chain, downsizing has taken place already and the remaining blue-collar jobs may be enriched and enlarged. However, an improved position in the value chain does not allow companies simply to externalise temporal pressures as functional flexibility increases so that work becomes more complex and interesting but more pressurised as well.

In the knowledge-intensive sectors of software R&D and development and IT services, the pressures increase and combine overall, but normal employment relationships are

retained. The 'responsible autonomy' and discretion workers have may, however, still lead to expanded working times in projects with slack periods in between diminishing. In integrated multinationals, standardisation in the sense of formal requirements of documentation and procedure increases as well as specialisation. In IT services as well, technical controls through workflow systems increase the pressure without improving the problem-solving core of the job. Still, these highly-skilled (mostly male) knowledge workers enjoy comparatively favourable working conditions. Occasionally, they are able to negotiate requirements of mobility by customers or the employer and get the organisation to flexibilise itself in their own interest.

9.2 Satisfaction from work

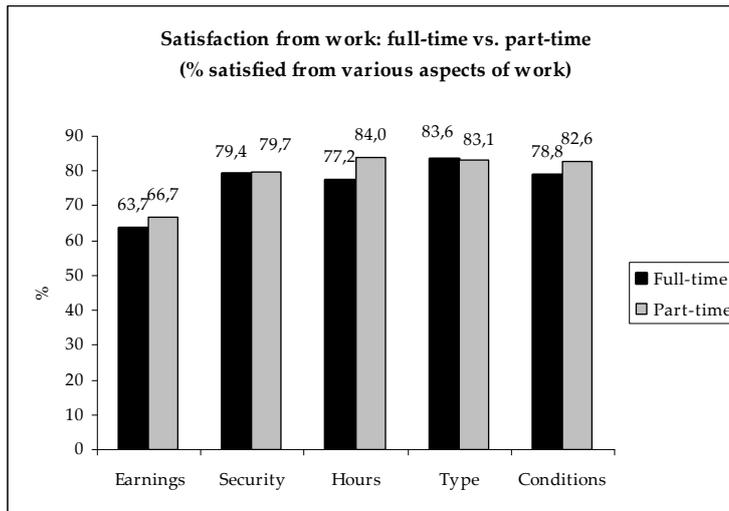
It is these complex and contradictory developments that are aggregated in the survey data on satisfaction at work – and responses here average out workers' evaluations of their situations which in both the organisational (Flecker et al., 2008a) and occupational (Valenduc, Vendramin, Krings & Nierling, 2008) case studies are considerably more differentiated and complex.

There is a limited amount of data in the WORKS quantitative analyses linking flexibility and satisfaction from work. What is found is that external-numerical flexibility entails a worsening of working conditions: workers in fixed term, casual, and other atypical jobs are more likely to be dissatisfied with their work than workers in permanent jobs (Birindelli et al., 2007: 79).

The working conditions of 'flexible' workers can be further illuminated by comparing the levels of satisfaction from different aspects of work of two sets of workers: full-time *versus* part-time workers, and indefinite-term *versus* fixed-term workers. Analysis of ECHP data for 2001 shows that for EU-15 as a whole part-time and fixed-term work are forms of flexibility with vastly different implications for workers, at least in terms of work satisfaction (Gavroglou, 2006). Part-time workers differ little from full-time workers in all dimensions of work satisfaction (if anything, they are more satisfied overall) (Figure 9.1), while fixed-term workers and indefinite-term workers are worlds apart (Figure 9.2).⁸

⁸ The questions on satisfaction from various aspects of work in ECHP are coded as PE031 (earnings), PE032 (job security), PE034 (number of hours), PE033 (type of work) and PE036 (working conditions/environment). Part-time work and fixed-term contracts are PE005C and PE024, respectively. The results are presented as percentages of the total valid responses of salaried workers (employed with an employer and working at least fifteen hours/week). The questions take the form 'How satisfied are you from your current work with respect to your earnings?'. The answers are given on a scale 1-6, with 1 meaning 'not at all satisfied' and 6 meaning 'fully satisfied'. In the two figures on satisfaction from work that follow, all those who have answered with a 4, 5 or 6 are grouped as 'satisfied' workers.

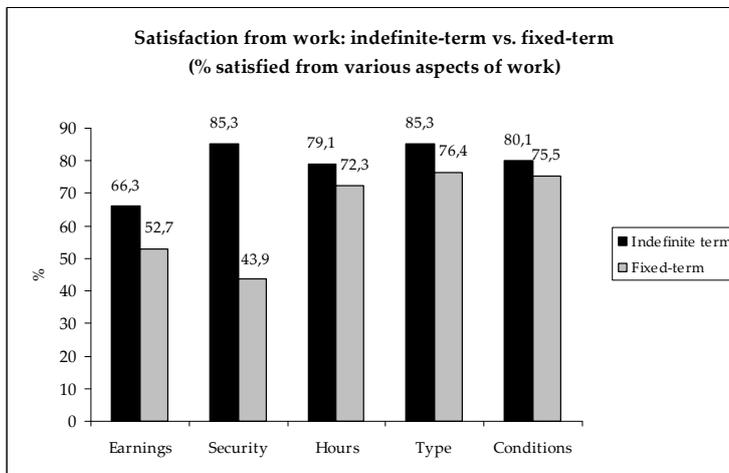
Figure 9.1 Satisfaction from work: full-time *versus* part-time workers



Source: Based on Gavroglou, 2006: 148

Full-time and part-time workers alike are least satisfied with their earnings. They have identical levels of satisfaction with job security and with the type/content of their work. Full-time workers are somewhat less satisfied than part-time workers with the number of hours they work (apparently they would prefer shorter working hours) and with their working conditions/environment.

Figure 9.2 Satisfaction from work: indefinite-term *versus* fixed-term workers



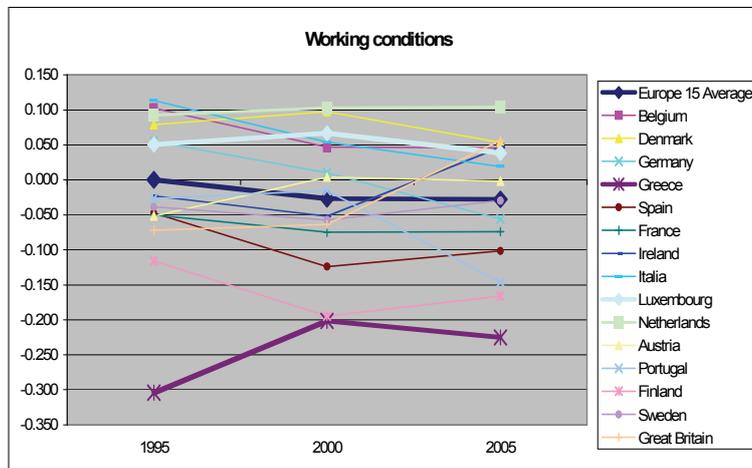
Source: Based on Gavroglou, 2006: 149

Fixed-term workers are significantly less satisfied with their earnings than indefinite-term workers (52.7 per cent versus 66.3 per cent). They are even less satisfied, self-evidently, with their job security (43.9 per cent versus 85.3 per cent). Judging from the levels of satisfaction, fixed-term workers face worse working hours, type of work and working conditions/environment than indefinite-term workers.

9.3 Quality of working conditions

The measure of working conditions developed by WORKS is based on an 'industrial' definition of working conditions. In the construction of this indicator physical nuisances are especially important: being exposed to vibrations from hand tools, machinery, *etc.*, to noise so loud that you would have to raise your voice to talk to people, breathing in vapours, *etc.*, handling and touching dangerous products or substances, radiation as well as wearing personal protective equipment. The indicator could perhaps be better called 'working environment' in order to be distinct from the more general term 'working conditions'.

Figure 9.3 Quality of working conditions, EU-15



Source: Greenan *et al.*, 2007: 38

Between 1995 and 2005 WORKS documents a deteriorating tendency for working conditions in EU-15 (Figure 9.3). Interestingly, multifactor analysis of EU-15 countries reveals no significant correlation between working under an unlimited or indefinite contract (as opposed to a temporary contract) and the quality of working conditions; 'we don't find evidence that working conditions are better than for limited contract employees' (Greenan *et al.*, 2007: 56). This result is in agreement with the subjective evaluations of working conditions/environment by different types of workers shown in Figure 9.2; the major dif-

ferences between indefinite-term and fixed-term workers seem not to lie (so much) in their working conditions but in their earnings and job security.

The quality of working conditions is significantly lower in the twelve New Member States and the EU-15. Between 2001 and 2005 there is a significant deterioration of working conditions, while there was no change for the EU-15 during the same period (Greenan *et al.*, 2007: 41). However there is no analysis of the relationship between working conditions and forms of employment for this group of countries.

9.4 Control, empowerment and self-direction?

On the level of individual workers, demands on their functional and *ad hoc* flexibility increase overall in a specific sense: they need to fulfil an extended range of sometimes contradictory demands in generally narrowed timeframes. Hence, they no longer just 'do their jobs' in a narrow sense but adapt their performance and output to an increased (and everchanging) range of specifications, targets and documentation procedures within the organisation. They also take over a considerable part of the co-ordination with other units that is a central part of all restructuring moves of value chains. With this intensification and compression of demands, subjective capabilities remain a crucial resource of organisational flexibility which is both required and limited by value chain restructuring. Thus, the findings of the WORKS case studies of organisations and occupational groups shed new light on the question of control and empowerment.

We can say that through the restructuring of value chains, the old polarities of control and responsible autonomy (Friedman, 1977) and the distinctions of external and internalised modes of control (Thompson & McHugh, 2002: 114) obviously merge and are enacted simultaneously. With regard to customer service work, this has been observed previously in terms of for example 'info-normative control' which combines surveillance and the governance of norms, values and commitment (cf. Frenkel *et al.*, 1999; Kinnie *et al.*, 2000). In WORKS case studies of customer services and IT services we also find that the training of outsourced, former public sector employees focuses on company-cultural and habitual issues, 'how to be an XY data employee' (Tengblad & Sternälv, 2007b: 23). This concerns workers in knowledge-intensive occupations as well as in services and logistics, and to a lesser extent, also in manufacturing. Companies are apparently well aware of this as even food production workers 'are informed in company training courses about the pressure of global markets and the placement of the company in international competition. The workers internalise the pressure of global competition and how it demands "efficiency reliability and cooperativeness of workers".' (Nierling & Krings, 2007: 110 citing Gorm Hansen, 2007a). Subjective and individualised skills and capabilities embedded with a generalised outlook on globalisation and the market are required both to fill enlarged jobs and to compensate for the unintended effects of restructuring on companies' capacities for problem-solving and responsiveness (Böhle, 1994; Böhle & Bolte, 2002; Holtgrewe, 2006a). Still, this hybridisation of control remains contradictory and cannot simply be expected to 'work' in the sense that workers internalise the demands on the 'new model worker' (Flecker & Hofbauer, 1998; Holtgrewe, 2006a). While the WORKS project has not explored issues of control, domination and subjectivity in-depth, some findings point to the subjective actualisation of hybridised control modes and their effect on occupational identities (Valenduc *et al.*, 2008).

Most workers in *production* experience a fragmentation of tasks, while higher workloads leave little time for the informal contacts that traditionally compensate for the strains. Hence, collective identities and senses of belonging erode together with the experience-based knowledge of the respective production processes in a similar way as Sennett describes it (cf. Sennett, 2008): ‘what once [was] a trade has now been transformed into a number of loosely coupled tasks to be performed by trained hands and bodies undermining the historical occupational identity’, as Gorm Hansen reports for Danish slaughterhouse workers (Gorm Hansen, 2007b: 9).

A similar hollowing-out of occupational identities occurs in *customer service*. As the service function is separated from general public sector administration, outsourced and performed by new groups of workers, this group is unable to draw on the professionalism of the public sector. However, their central motivation is not purely instrumental, but customer service workers are seriously committed to ‘helping people’ (Muchnik & Valenduc, 2007: 150) and draw considerable satisfaction from conducting customer interactions successfully: ‘I am satisfied when I have succeeded in turning an angry customer to a satisfied one’, is a typical statement of a service worker (Tengblad & Sternälv, 2007b). However, under what conditions this normative orientation can provide a basis for sustainable job satisfaction, skill development or collective action in the face of standardised and pressurised work, or whether the actual working conditions erode that motivation, is one of the open questions in interactive service work (Holtgrewe, 2001; cf. Voswinkel & Korzekwa, 2005).

In logistics, where some functional flexibility has evolved due to the increased strategic importance of the function although this is limited by multiple rounds of restructuring, feelings of valuation and empowerment are mostly limited to management (Krings & Nierling, 2008b). On the shop-floor, insecurity and short-term perspectives abound.

In the innovative functions of *fashion design* and *software R&D*, work and occupations move closer to the respective markets, and in design especially, sales figures exert immediate pressure. ‘Although market factors are not new in the designers’ work – their products must anyway be sold – their work becomes increasingly sensitive to cost-oriented constraints and to continuous feedback from consumers preferences. The success or performance of designers is measured by sales figures of their products. ‘We look at figures every day; a designer who doesn’t make her/his number won’t stay’, said a French designer (Valenduc & Muchnik, 2008: 37). Designers perceive this less as a break with their creative and artistic identity than as an encroachment of other demands which cuts down the time and space for ‘proper’ work: ‘We have the sensation to do meetings all the time, and it’s quite tiring because we don’t have the feeling to dedicate our time to the first basis of design work that is creating models, drawing, doing researches’ (*ibid.*). IT researchers in France, who are now being co-managed by marketing, feel a loss of creative autonomy as well: ‘I fear that R&D becomes like a software and computer services company, what would be a very strong amputation of R&D’ (Krings & Nierling, 2008a: 58). This sentiment may be due to their position in a deregulated telecommunications company, where restructuring effects enforce hierarchy and centralisation while breaking up regional clusters of expertise.

Elsewhere, in the younger research organisations which have been closer to industry and application-orientation from the start, changes are felt as challenges rather than losses. Researchers, like some software professionals in *development* and *IT services*, man-

age to attach the new requirements to professional identities and see the transition as a learning process: 'In the beginning, when I started in the Lab, I would have liked to sit here in my cubicle and do research and hand the results outside, hand them to the colleague, like I'm not the sales person, he does that and everybody has it nice and cosy, only, it doesn't work this way' (researcher, cited in Holtgrewe, 2007: 11).

However, where IT research is done by mostly young graduates at the beginning of their careers as in the Austrian case of IT Research Labs, their outlook is characterised by a certain short-termism which has also been observed in other analyses of younger cohorts of knowledge workers (Bühler, 2005; Holtgrewe, 2006a). This may suggest that the intermediate position between academic research and industry does not provide beginners with a clear perspective of professionalisation which experienced researchers are able to retain. Indeed, younger researchers appear to answer management's proclamations of flexibility and immediate responsiveness to successes and failures of commercial innovations by a preventive transitory orientation: 'On principle, I get this impression from the professor [the head of Austrian IT Research Labs] that he consciously wants to give all employees the feeling they are dispensable. That he intentionally produces that, with the fear of having to leave anytime because he decides, so I think he consciously projects this, this fear of being dispensable.' (developer, cited in Holtgrewe, 2007: 10).

The standardisation and codification observed in both private sector software development and services is mostly experienced as a loss of expertise and craftsmanship which increases interchangeability and competition among developers and locations. Rarely are workflow management and co-ordination tools considered as tools of empowerment as Paul Adler suggests (Holtgrewe, 2003; Adler, 2005). Still, in software development professional identities and attitudes are under pressure of multiple demands and orientations but not fragmented. They appear to focus increasingly on 'complex problem solving' rather than purely technological pioneering (Valenduc, 2008: 85) and again, in IT services especially, workers feel that bureaucratic and accounting demands encroach on the core of their jobs. It is Norwegian software engineers who benefit most from restructuring and cheerfully embrace increased specialisation as an opportunity to add interest to their jobs. Indeed, the Norwegian IT cases are generally distinguished by an assured and empowered professionalism of workers who do not find themselves overburdened by market pressures (cf. Plantenga & Remery, 2005). This may illustrate the embeddedness of occupational identities in the social and cultural environment of Scandinavian knowledge societies that combine social security, complex work and innovative capabilities (cf. Castells & Himanen, 2004).

All in all, modes of control and the ways in which workers' individual and subjective capacities and commitments are mobilised vary with industries and business functions. Since the restructuring of value chains is characterised by standardisation, indirect or contextual modes of control and a multiplication of tasks and orientations across all cases, their effects and influences are contingent upon the type of work. On the operative levels of *production*, *logistics* and *customer service*, insecurity, short-term perspectives, and occasionally the feeling of having 'survived' at least the last round of downsizing (Gavroglou, 2007a) erode former 'craft' orientations and collective identities. New subjective dispositions such as generic service orientations are limited and provide less of an identity than (supposedly) traditional occupations. While they may fit in well with the definition of service as a generic function, they are likely to be fragile and prone to burnout when they

are not supported by the job's resources and procedures (Zapf, Isic, Bechtold & Blau, 2003).

Knowledge workers such as *software engineers* or *fashion designers*, and also *logistics managers* are confronted with new demands on their functional flexibility: the ability to shift between tasks, take the perspectives of marketing or accounting on board, effectively communicate and empathise across cultures and juggle these tasks and perspectives under tightened time horizons. Still, they retain a sense of the 'professional core' of their job, of the 'proper' work they are supposed to be doing. The relations of this 'core' to the new demands are articulated on a subjective and individualised level as there are few collective efforts at professionalisation observable in the cases. The 'core' is occasionally defended nostalgically, in terms of an endangered craftsmanship or holism of jobs, as in the German Business-Software case. However, changes may also be qualified in terms of a learning perspective, and/or by some ironic detachment which in turn enables further speed-ups: 'Either you are the type of person or you are not. Speed has to do very much with flexibility, and taken yourself not too seriously', as the general manager of the Portuguese clothing company *WW-DK* puts it (Woll *et al.*, 2007b: 15).

9.5 Summary

The WORKS findings on the quality of work show that across Europe there is neither uniform upgrading nor comprehensive downgrading of work. Working environments are not improving, and fixed-term contracts continue to lessen job satisfaction. In cases of restructuring, we see increased pressure and a multiplication of demands and perspectives that workers need to take into account. Even logistics and production operatives are made aware of the (global) market, and knowledge and service workers need to take the interest of actual and potential, internal and external clients on board. In addition, they are faced with the impact of those clients' interest in controlling their service provider, which for workers means intensified monitoring and documentation needs. While 'the market' through these mechanisms does not corrode occupational identities, it increases the pressure and encroaches upon the job content that many workers perceive as the source of those identities: helping people, pursuing technical or artistic ideas, solving others' problems. The largest negative impacts on job quality are found where work is relocated to precarious segments of the labour market as in the Italian clothing industry or in service outsourcing from the public sector in continental Europe. Thus institutional contexts that promote dual labour markets appear to exacerbate negative effects: both by providing incentives for outsourcing and by leaving new employee groups outside of social protection. Conversely, more inclusive welfare states which provide complex jobs and worker-oriented options for flexibility (Lorenz & Valeyre, 2005) also provide a basis for workers' ongoing professionalisation and interest representation. These favourable conditions appear to accumulate where highly-skilled experts are involved and capable of crafting organisational flexibility according to their own interest.

10 Conclusions

This report has analysed the implications of value chain restructuring for company strategies aiming at flexibility. We have addressed the overall flexibility strategies connected with outsourcing (Section 10.1), the impact of value chain restructuring on numerical flexibility with regard to employment (Section 10.2) and on functional flexibility with regard to work organisation (Section 10.3). The governance of value chains within and across organisations has been found to have considerable impact on the circulation of knowledge in value chains (Section 10.4). The standardisation of work and codification of knowledge has emerged as both central prerequisites and results of outsourcing, and internal (simulated) competition may limit the circulation and accumulation of innovative and strategic knowledge. Flexible working hours providing internal-numerical flexibility are also found to increase through value chain restructuring (Section 10.5). Finally, the overall quality of work changes (Section 10.6): business processes and work are becoming more market-driven and accelerated and work is intensified. Other negative impacts tend to concentrate on weaker groups of workers: the lower-skilled, workers at the low end of the value chain, women in outsourced service functions.

10.1 Externalising flexibility

Although flexibility is rarely the primary motive of externalisation, strategies to reach flexibility do play a role in value chain restructuring. These strategies have different goals and flexibility takes on different meanings. *First*, outsourcing may help companies to cope with variations in capacity utilisation in a cost-effective way. The use of suppliers or service providers to cover excess demand or to deal with fluctuating volumes of output makes it possible to keep fixed costs low and to save on overtime of the internal work force. This motive for, or effect of, outsourcing has turned out to be important in food production, in the clothing industry and in the business function of customer service. *Second*, flexibility also has the meaning of responsiveness, adaptability, swift workflows and increased variation and changeability of procedures, products and services (Carlsson, 1989). This is traditionally associated with internal functional flexibility although we have observed some externalisation. Taking recourse to external knowledge and capacities, for example in R&D, in software development or in clothing design, makes it possible to enhance functional flexibility and gain access to innovative capacities even at lower cost. In some cases, however, companies reached higher levels of responsiveness and adaptability by insourcing activities that were outsourced before. *Third*, value chain restructuring may also improve the availability of services, to extend opening hours and to enhance temporal flexibility at comparably low costs. A typical example of this is the outsourcing of customer service activities to call centre companies with lower employment standards

and therefore lower costs of flexibility. Overall, strategies to reach flexibility through externalisation often mean that risks and pressures for flexibility are passed down the value chain with adverse consequences for the quality of work at supplier and service provider companies. While, in this respect, some of the case studies actually read like textbook examples in which the devil takes the hindmost, this picture needs to be qualified in several respects. First, not all suppliers and service providers are in a dependent position and provide low-cost input. In IT services, for example, big international service provider companies may be well-positioned to set the terms of the co-operation. Second, power distribution also depends on the professional groups that are affected. Highly-skilled workers in the IT industry, for example, can be in a rather strong bargaining position and thus are able to influence the terms of flexibility even if they are positioned further down the value chain.

Although externalisation is often used to increase both numerical and also functional flexibility, the research findings also revealed limitations in this respect. In several cases it became clear that outsourcing reduces responsiveness, slows down overall workflows, and intensifies 'bureaucracy' where needs for control and monitoring increased. These effects can be expected in particular where power relations are balanced, where markets and hierarchies are intertwined, contractual arrangements are complex and where it is difficult to exert control across organisational boundaries.

10.2 Flexible employment

In general, we are observing an expansion of atypical employment and specifically temporary work in Europe which may imply that companies are increasing their external-numerical flexibility and making use of the options national labour market regulations provide. Indeed, the way in which employment becomes more flexible depends to a great extent on the institutional context of a country and on sector-specific traditions. There are clear country differences in the scale of differentials between labour market segments. In Italy, for example, employment in small businesses is considerably less regulated and workers are less protected than in large companies, giving an institutional incentive for outsourcing work and for using suppliers as a flexibility reserve. In contrast, Scandinavian countries have encompassing employment regulation and industrial relation systems with obvious limitations on the possibilities to externalise the costs of flexibility. We thus see different degrees to which providers of outsourced services may pass on the flexibility requirements of their clients on to their employees in the form of non-standard contracts (Arzbächer *et al.*, 2002) or, conversely, degrees to which external flexibility of organisations relies on the internal flexibility of suppliers and service providers (Lehndorff & Voss-Dahm, 2005: 293). In the business function of customer service, in the Italian and Portuguese clothing industry and partly in IT services the WORKS case studies showed that the externalisation of pressures for flexibility actually translate into flexible forms of employment or casual labour on the part of suppliers or service providers. In contrast, other business functions and sectors rather indicate that outsourcing relationships involve, at the suppliers and service providers, an extension of working time and flexible working hours, *i.e.* forms of internal flexibility.

In fact, a lot of outsourcing and restructuring takes place with the use of normal employment relationships. However, in transnational industries such as clothing and IT,

WORKS has not been able to investigate the employment contracts of say, workers at Asian clothing manufacturers, and it is worth keeping in mind that in low-wage offshoring destinations a 'normal' employment relationship may still mean very little protection and poor working conditions. In the food industry, flexible employment is traditional and does not appear to change much – but nearshoring may imply a use of more flexible labour as in a case of a Danish company in which Polish freelancers were employed in a slaughterhouse set up in Germany. Configurations in which value chain restructuring means a flexibilisation and precarisation of employment contracts are mostly found in the public sector. Here, we also find the most evidence of a fragmentation of employment which, in contrast to 'new' flexible employee groups cushioning 'core' employees from market fluctuations and extended working hours, put pressure on the working conditions of core employees as well. This fragmentation also erodes workers' capacity for voice and interest representation as work is moved out of the more organised segments of the labour market, new employees may regard their jobs as transitional and competition across segments increases.

10.3 Work organisation in restructured value chains

All in all, we find that the restructuring of value chains does not necessarily foster flexible work organisation. Restructuring is diversified, and the contradictory processes of standardisation that enables outsourcing, offshoring of simpler tasks and upgrading the remaining ones, and businesses' moves up the value chain have varied impacts on the flexibility of work and organisation. This may be part of the reasons why we are not observing consistent trends of task complexity, workplace discretion or even work intensification in Europe in the quantitative analyses, where contradictory and ambiguous, context-specific developments are averaged out.

Indeed, increasing functional flexibility is rarely an explicit agenda of work reorganisation in processes of restructuring. This is occasionally part of IT outsourcing in the public sector when the aim is to gain access to technical knowledge and the implementation of new technology. It may also be part of the rationale for contracting out software R&D or, internally, for a company to buy up or merge with an R&D business. However, overall, aims of cutting cost, moving up value chains and improving competitiveness shape work organisation more than explicit functional flexibility strategies. Yet through outsourcing, new demands for functional flexibility may be added chiefly, but not exclusively, on the higher value-added side. Especially, the co-ordination of suppliers and outsourcing activities requires flexibility in terms of time (for instance communication across time zones), technical and social skills (of intercultural competency, negotiation, documentation, project management and general learning capacities). Such capabilities may be provided through additional recruitment and/or more or less formalised skill enhancement, but chiefly, are achieved through the individual skills, competencies and performance of workers in these positions.

For operative and low-skilled work in production and services, value chain restructuring on its own does not contribute much to increases in functional flexibility. The exception is clothing production where the jobs remaining in Europe in some cases have been comprehensively upgraded as mass production has moved abroad. In other sectors, while some uses of information technology allow for job redesign, most teamwork and job

enrichment arrangements in these functions have other causes, not least a commitment by management to more enriched job designs and/or workers' own initiative.

10.4 Knowledge standardisation and circulation

Value chain restructuring also affects the circulation of knowledge. Tacit and codified knowledge (Polanyi, 1967) are interrelated and remain so across fragmented value chains, but not necessarily in a harmonious way. Both (internal) market structures of governance and hierarchical divisions of labour have been found to hinder the circulation of knowledge. Increased demands on documentation and standardised procedure render knowledge explicit but get in the way of actual, situated problem-solving and longer-term creative vision as they cut into the time and discretion workers have available for both aspects of innovation. While formalised knowledge is potentially available, it may not be actually useful. Solutions to these dilemmas apparently emerge from workers' professional outlook and their situated attempts to create procedures and examples for discussion. Again, their skills, their functional flexibility and their capacity for articulating different knowledge bases compensate for emerging rigidities of work organisation as value chains are restructured on hierarchical or market-based terms and generate dilemmas between the codification and circulation of knowledge.

The knowledge perspective (cf. also Ramioul & de Vroom, 2009) thus adds a point to the general findings of the WORKS project that outsourcing and standardisation are recursively related: standardisation enables outsourcing enables standardisation and so on (Huws & Dahlmann, 2007). Looking at the cases, standardisation of work and codification of knowledge 'work' to a limited extent only. The need for (re-)interpretation, negotiation and sensemaking of codified bodies of knowledge is not codified away and cannot be. Standardisation and new demands on tacit knowledge are interrelated, and put on workers (and their *ad hoc* functional flexibility and tacit skills) as an additional demand in both innovative business functions and the less-than-knowledge-intensive areas. Especially there, in the face of Taylorist standardisation, the remaining and increased demands on knowledge tend to be invisible and underrated, specifically when newly imposed routines get in the way of competent work performance – a classic issue in IT supported interactive service work for example, when customer interactions and knowledge bases need to be handled simultaneously (cf. Frenkel *et al.*, 1999; Holtgrewe & Kerst, 2002).

The emergence of new demands on tacit skills and knowledge in the face of a standardisation that renders them invisible was also found to be an issue at outsourcing destinations. The example of Croatian software engineers developing business cases to compensate for the deficits of task specifications is a case in point (Flecker & Schönauer, 2007). Indeed, remote suppliers' reserves of skill are likely to be essential for functioning cooperation along the value chain – and it is worth keeping in mind that at the lower wages of outsourcing destinations a company can hope to get more skilled labour for less money. Such extra capabilities also provide resources for companies' moving up the value chain as the case of *SoftServ*, Bulgaria shows – unless they are eroded by the frustrations of working 'just' on compensating deficits in work organisation along the value chain.

10.5 Working time

With regard to working time, flexibility demands are shifted on to subcontractors or units further down the value chain who in turn pass them on to their employees. Hence, both external numerical flexibility (flexible employment) and internal numerical flexibility lend themselves to this pattern of externalising flexibility. As a result, the most frequent type of working time flexibilisation in the case studies is overtime in combination with compensatory time off on the basis of a regular full-time employment. Paid overtime is rarely found, and occasionally, especially in the public sector, regular working hours are simply extended to cut cost. This form of working time flexibilisation is firmly tied to the internal labour market. Nevertheless it can have negative effects on work-life balance and health, due to occasionally long and unpredictable working hours. Krings *et al.* (2009: 27) note that ‘case studies revealed significant differences depending on the position within the value chain, becoming more flexible the further one moves away from the central node of the network company (normally the brand name owner, the source of the outsourcing process, the company that is in the position to wield a heavier clout in terms of control/domination) towards the periphery, represented by subcontractors, second-tier subcontractors, single freelance workers, outworkers’. However, central co-ordinating functions in value chains that are customer-driven may be unable to simply pass on the needs for temporal flexibility and extend their working times to respond quickly to crises and bottlenecks along the chain. Especially offshoring and relocation of work expand working hours in management or co-ordinating functions as they increase communication needs across time zones.

Part-time work, either voluntarily or involuntarily, is not systematically affected by value chain restructuring and rarely is introduced as a deliberate measure of flexibilisation. Occasionally, it helps to extend service times in customer service. However, its occurrence is chiefly contingent on the national institutional context. There, in countries with little part-time work more of it is involuntary. Occasionally, part-time work is associated with precarious employment or entry positions in companies.

10.6 Quality of work

The WORKS findings on the quality of work show that across Europe there is neither uniform upgrading nor comprehensive downgrading of work. Working environments are not improving, and fixed-term contracts continue to lessen job satisfaction. In cases of restructuring, we see increased pressure and a multiplication of demands and perspectives that workers need to take into account. Even logistics and production operatives are made aware of the (global) market, and knowledge and service workers need to take the interest of actual and potential, internal and external clients on board. In addition, they are faced with the impact of those clients’ interest in controlling their service provider, which for workers means intensified monitoring and documentation needs. While ‘the market’ through these mechanisms does not corrode occupational identities, it increases the pressure and encroaches upon the job content that many workers perceive as the source of those identities: helping people, pursuing technical or artistic ideas, solving others’ problems.

The largest negative impacts on job quality are found where work is relocated to precarious segments of the labour market as in the Italian clothing industry or in service outsourcing from the public sector in Continental Europe. Thus institutional contexts that promote dual labour markets appear to exacerbate negative effects: both by providing incentives for outsourcing and by leaving new employee groups outside of social protection. Specifically, changes caused by outsourcing generally appear to be disproportionately detrimental to women. The reason for that is not that women by definition are found in secondary segments of the labour market. Rather, they concentrate in the sector with the most adversarial effects of restructuring such as higher pressure for flexibility (Tengblad & Sternälv, 2007b), a weakening of equal opportunities and diversity policies (Dahlmann, 2007a), and increasing problems in reconciling employment with care duties (Bannink *et al.*, 2007), and some wage discrimination because of differences between men and women in formal education (Dahl-Jørgensen & Torvatn, 2007).

Conversely, more inclusive welfare states which provide complex jobs and worker-oriented options for flexibility (Lorenz & Valeyre, 2005) also provide a basis for workers' ongoing professionalisation and interest representation. These favourable conditions appear to accumulate where highly-skilled experts are involved and capable of crafting organisational flexibility according to their own interest.

10.7 General conclusions

Overall, value chain restructuring tends to shift demands for flexibility down the value chain, to lower-cost regions, labour market segments or employee groups. Some of these segmentations are traditional as in the cases of seasonal labour in the food industry. Elsewhere, companies proactively seek access to new, cheaper and more flexible groups of employees as in the cases of relocation to lower-wage regions or the outsourcing of customer service from the public sector. However, in all these configurations segmentation not necessarily 'protects' core employees from increased demands on their flexibility. Through the implementation of internal competition or through technical integration of workflows beyond single organisations, segments compete with another and work is intensified across segments (cf. Rubery, 2006).

However, the externalisation of flexibility is rarely simple. The effort of co-ordinating expanded value chains and multiplied interfaces between organisations or units generates additional demands on functional flexibility especially. In spite of increased specialisation for example in software development, workers in knowledge-intensive jobs especially need to take a wider range of perspectives on board, keeping the demands of customers and markets, the problems up and down the value chain in mind – under conditions of a general speed-up of work.

Inter-firm relations turned out to be a contested terrain, and the pressures for flexibility and their consequences are often negotiated implicitly or explicitly. This means that, when it comes to the impact of value chain restructuring on the quality of work, power relations between organisations as well as bargaining positions of particular groups of workers play a role. As institutional contexts and the segmentation lines in particular countries and sectors shape such contestations, they clearly impact on the outcomes of strategies to reach flexibility for the quality of work.

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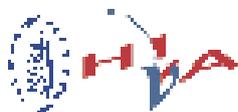
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- This report analyses organisational and employment flexibility from a value chain perspective. Findings show that patterns of flexibility are in fact highly sector-specific and depend on the competition on the product or service markets, on customers' or client companies' demands, on demands by shareholders to increase return on investment or on public policies.

Through value chain restructuring, demands for flexibility are distributed along the chain. Companies and organisations attempt to pass on risks and costs to others – not least to workers.

However, the study does not find many uniform trends. Apart from the national institutional setting, the outcomes for employment and quality of work depend strongly on sector characteristics. Changes of work organisation can offer challenging and more interesting work but this does not necessarily mean more favourable working conditions.

Outsourcing leads to precarious employment chiefly in the public sector and in services of general interest where employers seek to escape from strong labour protection. In manufacturing ongoing Taylorist patterns of work organisation persist, although when standardised work is outsourced and offshored, internal and functional flexibility increases. In the knowledge-intensive functions, standardisation of work and codification of knowledge is directly related to value chain restructuring and may even hamper organisational flexibility.



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