



# New work organisation, working conditions and quality of work: towards the flexible firm?



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European Foundation for the Improvement of Living and Working Conditions

# New work organisation, working conditions and quality of work: towards the flexible firm?

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# Foreword

In order to remain competitive, the European Union Member States have to adopt new work organisations which are innovative and create a high quality of work. The Commission's Green Paper, *Partnership for a new organisation of work*, stresses that the challenge is how to develop or adapt policies which support, rather than hinder, fundamental organisational renewal and how to strike a productive balance between the interests of business and the interests of workers, thereby facilitating the modernisation of working life.

Besides the questions related to adaptability and flexibility of enterprises, fundamental questions remain unanswered concerning the new physical, psychological and sociological factors of work organisation that interfere with working conditions. This clearly indicates a knowledge gap and the need for more specific research to improve the understanding of the link between work organisation and working conditions in a new working life.

This literature review investigates how work organisation interferes with working conditions and how this relates to the quality of work. The literature used for the report is drawn from a variety of sources, including Foundation studies.

Raymond-Pierre Bodin,  
Director

Eric Verborgh,  
Deputy Director



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## Research background

The European Commission Green Paper, *Partnership for a new organisation of work* (1997), stresses the challenge of developing or adapting policies which support, rather than hinder, fundamental organisational renewal and striking a productive balance between the interests of business and the interests of workers thereby facilitating the modernisation of working life. The Commission has also commented that Member States are currently defining preventive measures at the individual level in an unsatisfactory way. They need to further promote and support a preventive approach aiming simultaneously at effective integration in the labour market and the modernisation of working life.

In order to correspond to the policy relevance of this field of work organisation and quality of work, the European Foundation for the Improvement of Living and Working Conditions has been developing expertise in this area mainly through debate and information in a management perspective, focusing mainly on human resources development.<sup>1</sup> However, besides the questions related to the adaptability and the flexibility of the enterprises, questions remain concerning the new physical, psychological and sociological factors of work organisation that interfere with working conditions. This clearly indicates a knowledge gap and the need for an increased effort on specific research to improve the understanding of the link between work organisation and working conditions in a new working life in Europe.

In order to begin to bridge this knowledge gap, the European Foundation commissioned the Dutch research institute TNO Work & Employment to undertake an investigation within the framework of the Foundation's programme for 2001-2004. The programme states that working conditions can be defined by reference to an interrelated series of factors that shape the day-to-day working environment and which need to be taken into account in bringing about improvements. The organisation of work, as one of those factors, and its link with working conditions requires more qualitative analysis. More information is needed on how working time duration and patterns, pace of work, job content or job autonomy are defining working life in Europe.

## Project objectives

For this reason, the Foundation commissioned a review of existing literature with the following objectives:

- to gather the most relevant findings from research on the link between forms of work organisation, working conditions and the quality of work;
- to provide further information in this field in order to advance the debate on the results of the Foundation's Third Survey on Working Conditions.
- to identify the relevant paths to be followed by the Foundation in future research in the area of working conditions.

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<sup>1</sup> The Foundation has a longstanding interest in organisational renewal. Take as an example the Foundation publication: M.R. van Gils, R.A.J. van der Moolen (1981), *New models of work organization: a description and evaluation of developments in the Netherlands in the field of democratisation and humanization of work situations.*

The review should result in a report which focuses on the link between working conditions and new forms of work, particularly on their impact on physical and mental health, safety, time, lifelong learning, job security, job satisfaction, job autonomy and all the main elements of quality of work. The newly gathered information will be taken into account in the debate that is being carried out on the results of the Foundation's Third European Survey on Working Conditions.

The study must also contribute to the elaboration of an analytical framework and will include the design and a proposal of a typology (a model) that should portrait and characterise the link between working conditions and the new forms of work. The results will highlight all the main findings in this field and will, given its aim to be policy relevant, also contribute to the preparation of further Foundation activities in the area of working conditions.

## **Methodology**

TNO has followed a three-step approach in this project: 1) Data gathering; 2) development of an analytical model; 3) assessment of options for future research.

### *1. Data gathering*

TNO has gathered the most relevant findings from research on the link between forms of work organisation, working conditions and the quality of work by studying relevant (international) literature, Internet sources, and case studies. In settling on a manageable objective we focused on sources published by the European Foundation, reports prepared for the European Commission (European Union), TNO-reports and several influential publications.

The review of literature obtained through these sources has resulted in a research model which describes the link between new forms of work organisation, working conditions and the quality of work. The review provides insights into different theories and the results of current research.

### *2. Development of analytical framework*

The main method of arranging empirical information in this field is by the elaboration of an analytical framework centred on the relation between new forms of work organisation and working conditions, particularly on their impact on quality of work. For this purpose the 'decentralisation-human factor orientation model' has been developed.

### *3. Assessment of options for future research*

To identify relevant paths to follow by the Foundation in future research in the area of working conditions, options for future research have been assessed from a policy relevance perspective. Starting from the conclusions of step 1 and 2, it is possible to define these options. These options make clear what kind of research questions could be put forward, which helps to define the future research agenda of the Foundation. This assessment will be executed in close collaboration with the European Foundation on the basis of this document. To prepare this assessment, this study contains an outline of possible future research.

## **Scope of report**

The presentation of our findings does not follow the sequence of the three steps mentioned above. Having processed our gathered material and thoughts we first outlined the developed theoretical

framework. Next, we sought to fit in the empirical findings into this framework. Not surprisingly this was very difficult, since the reviewed publications show a variety of theoretical starting points and have been set up for specific purposes, not necessarily corresponding with our objectives.

This report covers the analytical and research models (Chapter 2), empirical findings on work organisation, working conditions and quality of work (Chapter 3), relationships between these three themes (Chapter 4), conclusions and options for future research (Chapter 5). The list of references includes the reviewed literature.



# Analytical model and research model

# 2

In this chapter we first describe our analytical ‘decentralisation-human factor orientation’ model, which offers a theoretical approach to understanding the emergence of new work organisations from two perspectives: their relation to theoretical organisational concepts and the evaluation of empirical organisational structures. Second, our research model combines the research questions with operational definitions. We explain how relations between work organisation, working conditions and quality of work are explored. We introduce drivers for managerial choice as motive powers for change. Finally, we will clarify how we have interpreted the reviewed literature, by explaining the relation between the analytical and research model, and then end the report with some concluding remarks.

## **Analytical model: decentralisation–human factor orientation**

One of the main objectives of this study is to develop a theoretical framework, besides a research model, to describe the relationship between new forms of work, working conditions and their impact on quality of work. We look at these variables as if they form a causal chain, in which quality of work can be deduced from working conditions, and working conditions follow on from work organisation. This simplified view on complex matters indicate the relations we are interested in within this study’s framework, namely how work organisation affects working conditions, and how working conditions affect quality of work. Work organisation, therefore, is a central independent variable.

Work organisation can be linked to two perspectives. The ‘pure’ organisational concept and the actual empirical organisational structure. Concepts refer to models of management theory, like Taylorism, lean production and business process re-engineering. Structures refer to the shapes organisations have taken. The fact that organisations that are using the same organisational concept, can differ in their structure underlines the relevance of the distinction. An organisation having a Tayloristic concept, for example, may vary in its degree of the division of labour in the different departments of its production process; to go one step further, it is even conceivable that an organisation is using different concepts in separate departments, due to differences in product-market combinations.

Although much has been written on new forms of work or organisations, resulting in a variety of descriptions covering different examples of organisational changes, clarity on the subject is still lacking. Therefore, the organisational concepts that are being used in literature, classified along two dimensions, best describe the most important characteristics of the (most commonly used) concepts. This classification not only provides a framework to describe the literature reviewed, it also provide the means to analyse the relationship between new forms of work organisations, working conditions and quality of work. It will become clear that the characteristics that differentiate between organisational concepts and organisational structures are also the ones that affect the composition of working conditions and quality of work.

### *Organisational thinking*

A model was developed to categorise organisational concepts and organisational structures along the centralisation and human factor orientation dimensions. The model is rooted in the historical context of organisational and management thinking. The starting-point is today’s state-of-the-art organisational concepts. The European Commission Green Paper *Partnership for a new*

*organisation of work* was used as a starting point, since this document gives a proper statement about the shape of new organisations, labelled as 'flexible firms'. We take a closer look at the history of organisational thought to illustrate how we arrived at this point.

*Scientific management* was the dominant paradigm of work organisation throughout the greater part of the twentieth century (Hague, 2001). Industrialisation and the development of mass markets advocated rationalisation of organisation and work, which created fertile soil for Taylorism and Fordism at the end of the nineteenth and the beginning of the twentieth centuries. During the first half of the Twentieth Century it was broadly recognised that, besides rationalisation, productivity also depended on the motivation of workers. Organisational behaviour was not solely driven by financial incentives, but also by the meaning of work and by shopfloor social relations. Aiming to find optimum working conditions, which would be reflected by increased productivity, the *human relations approach*, therefore, questioned the principles of scientific management (Hague, 2001). Organisational thinking was dominated by scientific management and the human relations approach until the Second World War, but has become more diverse since then. Considering the organisation as social systems, the human relations approach led to viewing organisations as open systems, which stimulated some theorists to look for a balance between technical and social systems in sociotechnical systems thinking, and many other researchers to strive for one best way of organising within contingency theory.<sup>2</sup> During the 1960s, it was suggested that many factors have an impact upon work organisations, especially the environment, organisational size and technology (Hague, 2001).

A general conclusion with respect to the environment is that organisations which face changing environmental demands must become more flexible and less hierarchical (Burns and Stalker, 1961; Lawrence and Lorsch, 1967; Mintzberg, 1979). Researchers looking for the effect of organisational size on organisational structure found that smaller companies had more flexible forms whereas larger companies required more traditional, bureaucratic forms (Hague, 2001). Studies on technology and the shaping of organisations clearly indicate that technological determinism must be rejected (Majchrzak and Borys, 1998). Labour process theorists (Braverman, 1974; Noble, 1986) stress the role of managers and designers in decisions on technology, whilst others lay the emphasis on non-deterministic approaches, advocating, for example, the concept of strategic or organisational choice (Child, 1972).

Diversity of organisational thinking comes as no surprise given the popularity of contingency theory. It can be observed, nevertheless, that two main streams remained present ever since. One stresses *cost-effective production* and another *quality of working life*. The oil crises in the 1970s heralded the collapse of mass industry and the change to flexible specialisation in western economies (Piore and Sable, 1984). Gradually it became clear that organisations were facing new functional demands: besides efficiency, markets demanded quality, flexibility, and innovativeness (Bolwijn and Kumpe, 1990).

Drawing up the balance in the beginning of the twenty-first century, in which our western economies face the increasing influence of globalisation, ICT, individualisation, high labour costs and continuous change, the mainstream which aims at cost-effectiveness has developed

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<sup>2</sup> In fact contingency theory denies there is only one 'best way' of organising. Instead it states the best way to organise depends on contingent factors.

management and organisational concepts like quality control, shop-floor management, continuous improvement (kaizen), just-in-time-production and *lean production* (Imai, 1986; Lindberg and Berger, 1997; Suzaki 1987, 1993; Wilkinson et al, 1997; Womack et al, 1990). Lean production (Womack et al, 1990) can be regarded as an organisational concept that best combines flexibility with efficiency. It is flexible because it closely operates to the market with teams and it is efficient in continuously improving the production process.

The mainstream of quality of working life developed, at least partly, in another direction. Following in the footsteps of the human relations approach, adherents of sociotechnical systems theory, the democratic dialogue and humanising of work, especially in the Nordic and Rhineland countries, have emphasised the importance of craftsmanship, participation, team work and the meaning of work (Peters and Waterman, 1982; Kern and Schumann, 1984; Piore and Sabel, 1984; Senge, 1990; Pfeffer, 1994; Hamel and Prahalad, 1994; Hague, 2001). An example of organisational concepts that takes account of both quality of work and demands for flexibility and quality of production is *modern sociotechnology* (Van Eijnatten, 1993; Sitter, 1995; Sitter et al, 1997). It is aimed at flow production and team based work, in which workers have obtained a high level of responsible autonomy.

This overview leads us to conclude that the two main trends represent two paths for organisations to take: a more human oriented one versus a path to more efficiency. In the last two decades scientists have produced an abundance of literature that tries to integrate both streams, of which *business process re-engineering* (Hammer and Champy, 1993) is the most famous example. Although it is said that BPR will lead to richer jobs, the question remains whether this theory is really brought into practice in its pure form.

#### *Decentralisation – human factor orientation model*

Let's return to our decentralisation – human factor orientation model.<sup>3</sup> The first dimension describes the *degree of centralisation or decentralisation*. Centralisation refers to the division of the management structure of organisations. In a highly decentralised organisation there is a high degree of delegation of responsibility to a substantial group of workers on many issues that are important in their work. Decentralised organisations are flexible. A high degree of centralisation often goes together with a strict division of labour, many hierarchical layers, a distinction between several activities concerning to personnel, financial and communication matters and a formal rather than an informal atmosphere. Centralisation and rigidity often, although not always, go hand in hand. Centralised organisations are characterised by centralisation of power at the top, whereas decentralised organisations show substantial control (decision latitude) at lower levels.

The second dimension describes the degree in which the orientation is on workers and their knowledge as a key resource, which is labelled as the *human factor orientation*, or on other issues, such as financial means and technology. Stressing the human factor indicates the relevance of human competences in production; opposed to this view, stressing labour as an expensive factor of production (e.g. because it is not cost-effective), means a one-sided orientation toward cost reduction, quality improvement, efficiency. In concepts that are human factor oriented, human

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<sup>3</sup> Strictly speaking, the term 'typology' is more adequate than the term 'model'. We prefer to use 'model', however, as a first step towards new theory formation.



capital is seen as an indispensable factor of production instead of a debit item. Human factor orientation often coincides with the ability to innovate and be creative, attention to quality of work and life, functional flexibility, and stressing the company's knowledge as a key competitive factor (Hamel and Prahalad, 1994; Nonaka and Takeuchi, 1995).

The main characteristics of the model are shown in Table 1.

**Table 1 Main characteristics of the decentralisation-human factor model**

<i>decentralised</i>	<i>centralised</i>
- organic	- mechanic
- flexible	- rigid
- external orientation	- internal orientation
- delegated autonomy	- hierarchical control
<i>high human factor orientation</i>	<i>low human factor orientation</i>
- innovating	- improving
- creating knowledge	- applying knowledge
- social	- efficient
- double loop learning	- single loop learning

#### *Four types of organisations*

Decentralised organisations operate in unstable environments, whereas environments of centralised organisations have better predictable functional demands. Decentralisation depicts a shift away from scientific management towards quick to market-responsive management philosophies.

Whilst high human factor oriented organisations acknowledge their dependency on social factors resulting in substantial professional or individual autonomy, low human factor oriented organisations show high trust in man-made artefacts, such as technology.<sup>4</sup> High human factor orientation indicates taking the human relations approach a step further in the direction of the quality of working life movement, by accommodating organisations to changing individual preferences.

Figure 1 depicts the decentralisation–human factor model. The two dimensions result in four organisational types, which are described below.

Organisations characterised by *rigid efficiency* are centralised and do not score highly on human factor orientation. Such organisations have stable market environments and established business processes. These features are significant for mass production. The term 'rigid' may express a negative connotation, which is not intended. Such organisations do not need to be flexible in an unchanging market.

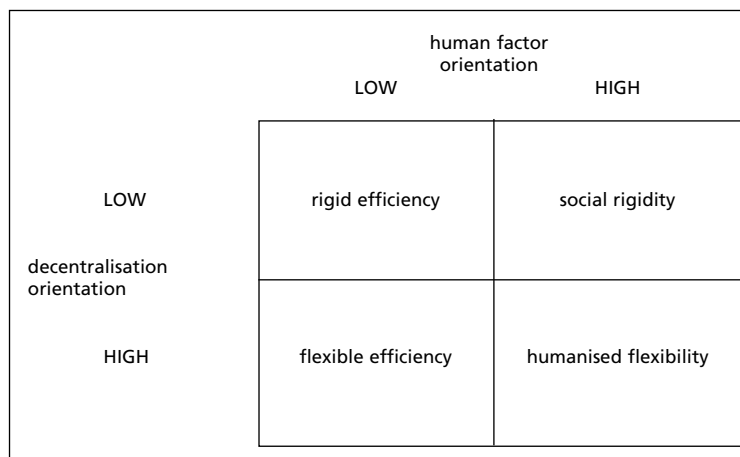
Organisations conducive to *social rigidity* are functioning in stable environments in which human qualifications are essential in the organisation's processes, although the processes themselves do

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<sup>4</sup> Not sharing the technology determinists' point of view, we do not regard technology as a prime mover itself.

not undergo significant change. Examples of such organisations could recently be found in education, health care, welfare and governmental organisations. Since labour market shortages and the shortening of the working week are having a serious impact on control of working processes and the level of stress, such organisations are facing change in two directions: employees force employers towards a stronger human orientation and clients force employees to become competent in the realm of social-psychological qualifications (flexible, stress-incessant, accurate, serviceable, etc.).<sup>5</sup>

**Figure 1 'Decentralisation - human factor orientation' model**



Organisations confronted with demands for *flexible efficiency* are in an continuously changing environment. They must be able to produce quickly and aim for flexibility and low costs through the application of mature technologies and broad but clear-cut employee qualifications. Assembly production and chain production, possibly within network organisation configurations, are examples enabling to serve both tailor-made clients and mass markets.

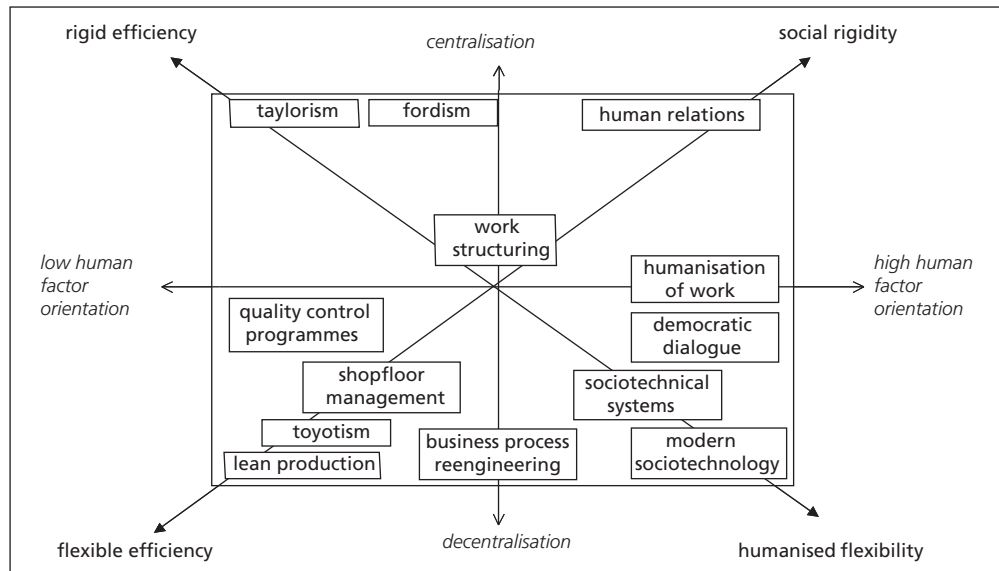
Organisations evaluated as examples of *humanised flexibility* are operating in highly unstable and continuously changing environments and must meet complex demands. These firms combine the application of technology to facilitate employees with the innovating force of the multi-skilled competences of their employees. Employees' wishes for learning through work and self-realisation outside the working world lead to the integration of business and personnel management. Products and services made by such organisations contain a highly added value of human talents, be they social-psychological or intellectual. These firms produce in relatively small batches.

It should be noted that these ideal-types are of course simplifications of the complex real world and, more important, that one organisation can use more ideal-types at the same time. For example, for different business processes or for different kinds of employees.

Using the model of these four ideal-types we can try to make a reasoned evaluation of existing management concepts and practices. Figure 2 depicts the centralisation – human factor model in which the most important organisational concepts and business practices are situated.

<sup>5</sup> We acknowledge that manpower shortages would also force 'rigid efficient' organisations to become more 'human oriented'.

**Figure 2 Theoretical organisational concepts and business practices positioned in the decentralisation – human factor orientation model**



Taylorism, human relations, lean production and modern sociotechnology are considered to be the most ‘extreme’ organisational concepts within each of the four ideal-types.

Summarising, we have introduced a model to evaluate new work organisations with respect to organisational concepts. By doing so, we are able to judge work organisations in terms of decentralisation and human factor orientation. Besides, it is also possible to relate new work organisations to existing organisational concepts and to indicate whether they are Tayloristic, human relations-like, lean production-like, modern sociotechnical or something in between these.

Having explained our analytical model, we now turn to the research model that we used.

### Research model: questions and definitions

The research model is our looking-glass for the review of the literature. In unfolding our research model we look at the research questions addressed and the applied theoretical definitions. Subsequently we must transfer the theoretical definitions into operational definitions. Empirical findings in the reviewed literature have been ‘measured’ and evaluated with these operational definitions, enabling us to complete our work with conclusions that could be related to the decentralisation – human factor orientation model.

#### *Research questions*

How are new work organisations and working conditions linked, particularly on their impact on quality of work? Addressing this research question starts with focusing on a useful analytical model of concepts used, as shown in Figure 3.

**Figure 3 Quality of work as a result from work organisation, working conditions and managerial choice**

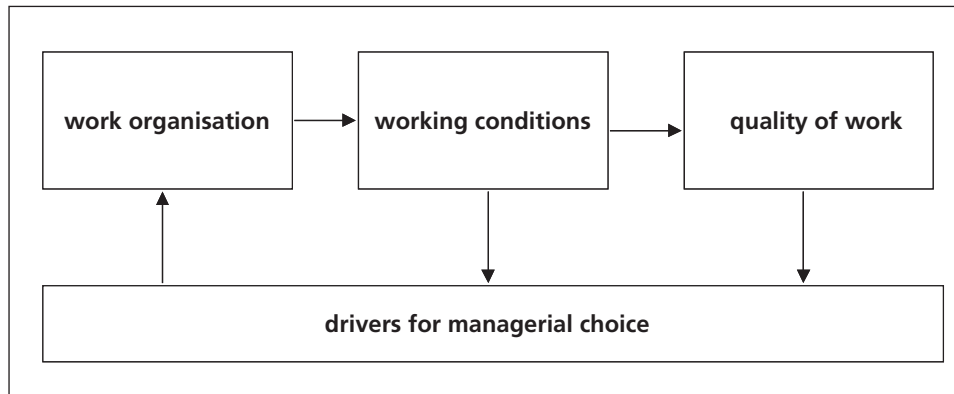


Figure 3 displays quality of work as an outcome of three factors, namely the design of work organisation, its consequences for working conditions and the underlying managerial choices. The arrows shown do not indicate exclusive one-way causal correlations, but are meant to indicate the relations studied in the project.

Figure 3 depicts the next flow of thoughts. Suppose your organisation is situated in a constantly changing environment, that is imposing certain demands to be fulfilled in order to remain a sustainable organisation. These functional demands are very complex because of their intertwining: production demands, consumer demands, financial demands, employee demands, legislators' demands and so on. Given the fact that your organisation is operating in a highly competitive field, forcing you to go along with the main trends on change or otherwise lose your position, what would you do?

- Having defined your strategy, how would you structure your organisational processes? What kind of organisational production concept is implicitly being used? What is your view of the division of labour?
- Which are your managerial drivers and what impact do they have on your freedom for managerial choice? Are these environmental factors (extra-organisational), endogenous factors (intra-organisational), or both?
- How would your choices result in specific working conditions for employees, characterised by the presence or absence of risks and opportunities for safety, health and well-being? What kind of organisational policies related to the human factor are designed to facilitate the organisation's primary process?
- How would employees in your organisation evaluate their quality of work, taking account of health and well-being, job security, competence development and combining working and non-working life?

The answers to these questions should shed more light on the relation between work organisation, working conditions and quality of work. The drivers for managerial choice refer to a number of questions that (top) managers must ask themselves continuously:

– about work organisation;

What strategy should be followed to ensure survival (vision, mission/central goals, market approach)? What structure should be designed to optimise the production of goods and services (production structure, decentralisation, departmentalisation, team/job structure, task structure)? Which management structure fits best (control structure)?

– about working conditions;

Which are suitable policies to facilitate attaining the organisation's central goals, focusing on people (HRM, knowledge/competence management, communication policy, formalisation, policy on culture and leadership, health and safety policy)?

– about quality of work;

How can workers be satisfied? How can the interests of workers be met? How can sick leave be restricted? Which terms of employment have an attracting and a binding effect on (potential) workers? How can an improvement of job contents be arrived at? How can employees combine working life with non-working life?

A next step is to define the concepts as used here.

#### *Work organisation*

'Work organisation itself is a broad subject, including, as it does, most aspects of the way work is organised in and between firms, the relation between the social partners, the organisation of the labour market, the relationship between work and the organisation of society', as is stated by the authors of *Partnership for new organisation of work* (European Commission Green Paper, 1997).

According to the European Work Organisation Network (EWON), a *new work organisation* 'is the application of principles and practices within enterprises which aim to capitalise on, and develop the creativity and commitment of employees at all levels in achieving competitive advantage and in meeting the business and service challenges posed by the social, economic and technological environment'.<sup>6</sup> The direction of change was stipulated by the US Department of Labor, in its statement that the new work organisation practices built around and complementary to ICT have been described as 'high performance work practices that lead to high performance workplaces' (US Department of Labor, 1993).

In the words of the European Commission 'a more fundamental change in the organisation of work is emerging, a shift (...) to a flexible, open-ended process of organisational development, a process that offers opportunities for learning, innovation, improvement, and thereby increased productivity. (...) This new concept of a process of continuous change is sometimes described as "the flexible firm" and the workplaces as high trust and high skill workplaces' (European Commission, 1997). Referring to the OECD, several reports prepared for the European Commission inform us that new forms of work organisation are based on a 'high trust' and 'high skill' organisational model that encompasses extensive employee involvement in operational decision-making. It is stated, nonetheless, that no single definition of 'new work organisations' exists and that each company must adapt organisational structures, systems, skills and style to its own specific circumstances (OECD, 1998; Business Decisions Limited, June 1998, May 1999, January 2000).

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<sup>6</sup> 'Definitions of the European Work Organisation Network (EWON) – draft', EWN/15c/99-00. See also the EWON website via [www.europa.eu.int](http://www.europa.eu.int).

Contrary to the variety of definitions, it is our aim to describe what is characteristic about 'new work organisations' instead of judging empirical developments within a normative framework about what a 'flexible, high trust - high skill firm' should look like. A criticism of these definitions is that wishful thinking seems to dominate the actual situations, since few organisations have shifted to 'the flexible firm' (Savage, 2001).<sup>7</sup>

That is why we shall propose the distinction between organisational structures (new work organisations) and management behaviour (drivers for managerial choice) which will enable us to analyse relevant factors in the development of new work organisations. In this study we aim to be more specific about what a work organisation is with the following definition.

An organisation is a systematic entity of elements, whereas a *work organisation* is an entity consisting of human and non-human elements (e.g. machines, computers, animal power) involved in the purposive production of goods and services. Work is the effort to produce goods or services. Central features of work organisations are the structure of production or service, the structure of management or control, and, related to these features, the division of labour. The division of labour follows on logically from the way organisations have been structured, namely in the design of jobs. The design of jobs has two elements. Firstly, the contents of work (functional) and, secondly, the employment relationship (contractual). Work organisations are man-made social-technical arrangements in which people are brought together in a relationship to achieve its goals.

#### *Drivers for managerial choice*

Work organisation as a purposive production entity is a static concept. What makes it dynamic is its link with management behaviour. In our analytical framework in Figure 3 'drivers for managerial choice' were mentioned. Drivers are beneficial or hampering conditions that, at the same time, strongly stimulate managerial action and yet differ in the managerial freedom of choice.

In this respect extra-organisational and intra-organisational drivers to be distinguished are shown in Figure 4.

**Figure 4 Drivers for managerial choice**

<p><i>Extra-organisational (environmental);</i></p> <ul style="list-style-type: none"> <li>- market circumstances</li> <li>- use of and access to technology</li> <li>- financial situation (investment, financiers)</li> <li>- legislation</li> <li>- political stability (includes national culture)</li> <li>- labour market situation</li> <li>- industrial relations</li> <li>- governmental policy making</li> </ul> <p><i>Intra-organisational (endogenous);</i></p> <ul style="list-style-type: none"> <li>- employees interests (job satisfaction)</li> <li>- organisational culture, relations and communication</li> <li>- organisational policy (financial, technological, HRM)</li> <li>- management's view and competence on business, technology and social aspects</li> </ul>
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<sup>7</sup> In other words, these definitions are describing the effects of new work organisations and do not describe their characteristics (teleological fallacy).

Extra-organisational drivers are determined by environmental uncertainty. Intra-organisational drivers are a heterogeneous variety of factors which are relevant within the perspective of how management adapts the organisation to its environment. One major way to reduce environmental uncertainty is through adjustments in the organisation's structure; another one is to set up flanking policies related to working conditions; yet another is to find a proper response to how employees evaluate the effects of their work (job satisfaction related to quality of work). Environmental uncertainty is caused by capacity, volatility and complexity (Robbins, 2001: 432-3). Capacity refers to the degree to which the environment can support growth. Growth generates (financial) resources and leaves room for making mistakes and taking risks (not too much competition). Volatility captures the degree of instability. Where there is a high degree of unpredictable change (e.g. market demand), the environment is dynamic, whereas high predictability leads to a static, stable environment. Finally, complexity informs one about the degree of heterogeneity and concentration among environmental elements. A market segment with a small number of large suppliers is very transparent, whereas the heterogeneous and dispersed market of small firms in the Internet-connection business is complex. In conclusion, the number of 'control buttons' that management can effectively handle depends on whether the environment is abundant or scarce, stable or dynamic, and simple or complex.

Intra-organisational drivers relate to internal uncertainty. Managerial 'control capacity' is the autonomy designed for management functions. In other words, the latitude to cope with internal and external uncertainty. Internal uncertainty can stem from dissatisfied employees, conflicts, resistance to change, poor communication and feedback, lack of personnel policy, etc. The control capacity of managers should ensure they can deal with these (management job) demands.

To summarise, management has autonomy in making choices about these drivers, which will have consequences for the structure of work organisation, working conditions and, indirectly, have an impact on quality of work. The amount of autonomy managers have, is a relevant issue.<sup>8</sup>

In having made the distinction between work organisation and drivers for managerial choice, we now do not have to link up with the aforementioned normative definitions that are being used at European level.

#### *Working conditions*

Working conditions in Figure 3 refer to individual-independent situations in which individuals are working. Working conditions are a consequence of managerial choices about the structure of the work organisation. There are three types of working conditions:

- job demands – job control balance
- exposure to physical aspects
- employment relationship

#### Conditional approach or risk approach

In our view working conditions are a feature of how work and the work process have been organised, instead of a feature of individual judgement (Christis, 1998: 31-3, 72-5). For this reason

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<sup>8</sup> Some factors are regarded as of indirect relevance. Economic performance, for example, is seen as an outcome of choices made by management. Company size, as another example, is subsidiary to the design of the management structure and decentralisation of control.

working conditions are typified as individual-independent, as descriptions of situations. They either bear risks or opportunities for individuals. A few examples should clarify the argument.

1. Job demands – job control balance: Each job demands an amount of effort from employees in order to attain the result desired by employers. A good example of demands are the output standards of production to be met. Jobs with high demands contain risks for high workloads. In situations like these the work of employees should be provided with sufficient control capacity (decision latitude, autonomy) to meet the demands and to be able to (re)establish a demand - control balance. Control capacity is the freedom to decide how to solve problems once they occur. Employees who are not authorised to do so, may lose control. Empowerment through job redesign is the key answer to working conditions with demand-control imbalances. Within the conditional approach such imbalances are regarded as job characteristics, instead of a personal feature. Therefore, it is a risky situation. This does not mean that individuals cannot differ in evaluating their working conditions. In fact, they do. For this reason working conditions should not contain any risks. That would benefit all individuals, regardless of their capacity to cope with risky conditions.

2. Exposure to physical aspects: Presenting examples of risky working conditions with reference to the exposure to physical, chemical and biological conditions and with respect to ergonomical and musculoskeletal demands is less complicated, since these are clearly related to safety risks and accidents. Anyone can imagine that wet floors, poorly maintained machines, inappropriate storing of inflammable fuels and so on, contribute to risky working conditions. It is also obvious that repetitive work and badly designed instruments and furniture negatively affect ergonomical and musculoskeletal demands. Again we stress that these working conditions are to be seen as a consequence of how work is organised in order to change the work organisation should such risky situations be detected. It does not mean that individual behaviour is no longer important. Even in situations with risk-free working conditions individuals should comply with the safety instructions.

3. Employment relationship: The employment relationship refers to the (contractual and operational) relation between employees and employers. It involves subjects such as job content, payment, fringe benefits, working time, labour contract, (indirect) participation, and training and career opportunities. In what sense can the employment relationship be regarded as a feature of working conditions? First, a number of aspects are the consequence of collective agreements and collective bargaining and are strongly determined by labour market circumstances. It sets the stage for bargaining about the range of salaries and type of contract. For both employer and employee it determines the balance of power in a way, given the shortage or abundance on the labour market. It is true that the argument of individual-independency does not hold, but much changes once the contract is signed. Because, secondly, a number of aspects strongly depends on employers' behaviour, like HRM policies. Workers may have a say in the adoption of such policies through participation, but it is essentially a managerial choice to let personnel management become a feature of the work organisation, resulting in career opportunities, investment in training, or not. In this respect we would like to consider the terms of employment and HRM policies as features of the work organisation.

#### *Quality of work*

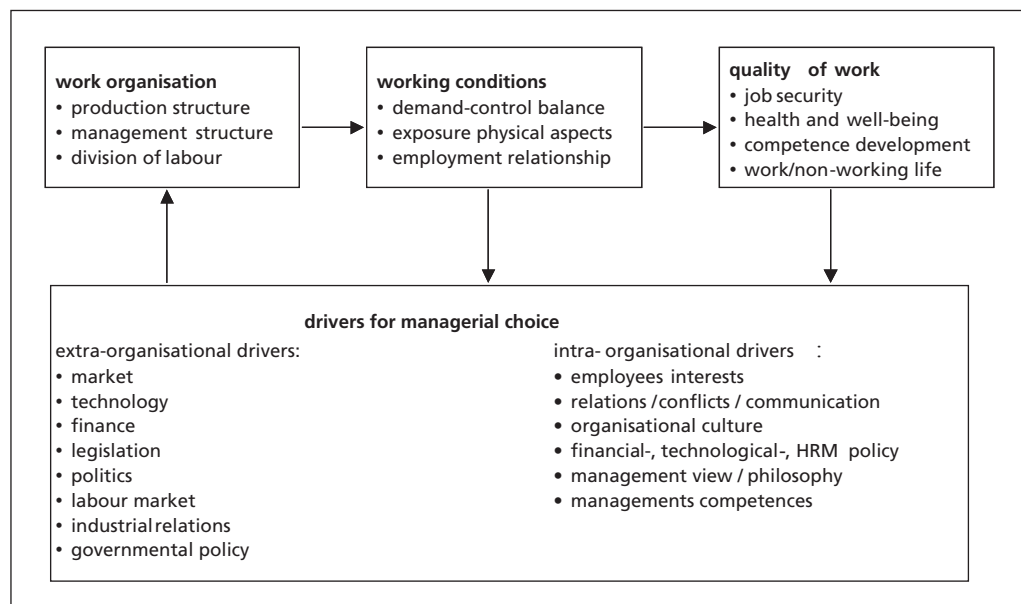
Within the framework of Figure 4 quality of work is regarded as a characteristic of individuals, more specific, as an evaluation from employees of their working conditions in the pursuit of the following



four objectives<sup>9</sup>: job security (effects of status, income, social protection, workers' rights); health and well-being (effects of occupational accidents and diseases, exposure to risks); competence development (effects of opportunities for training skills, career development); combining working and non-working life (effects on time, equal opportunities, discrimination, social infrastructures). In fact, the quality of work refers to the effects of these four aspects on job satisfaction.<sup>10</sup> It is a subjective evaluation of the effects of the work organisation, the working conditions and managerial behaviour at job level by the workers themselves.

Combining all the abovementioned elements results in the full research model<sup>11</sup> as shown in Figure 5.

**Figure 5 Quality of work as a result of work organisation, working conditions and managerial choice: full model**



To summarise, we are stating that the structure of work organisation is a consequence of how management deals with the drivers for managerial choice related to their control capacity. Next, we want to know how work organisations affect working conditions, and how employees evaluate their quality of work. It is assumed that working conditions and quality of work affect management behaviour in (re)constructing the work organisation.

### **Connecting the analytical and the research model**

#### *Theory*

Figure 5 exhibits the variables that may be relevant in the empirical world. The studies in the literature review, however, will not cover all these variables. Therefore, we should transform the theoretical framework of the 'decentralisation – human factor orientation model' into a set of

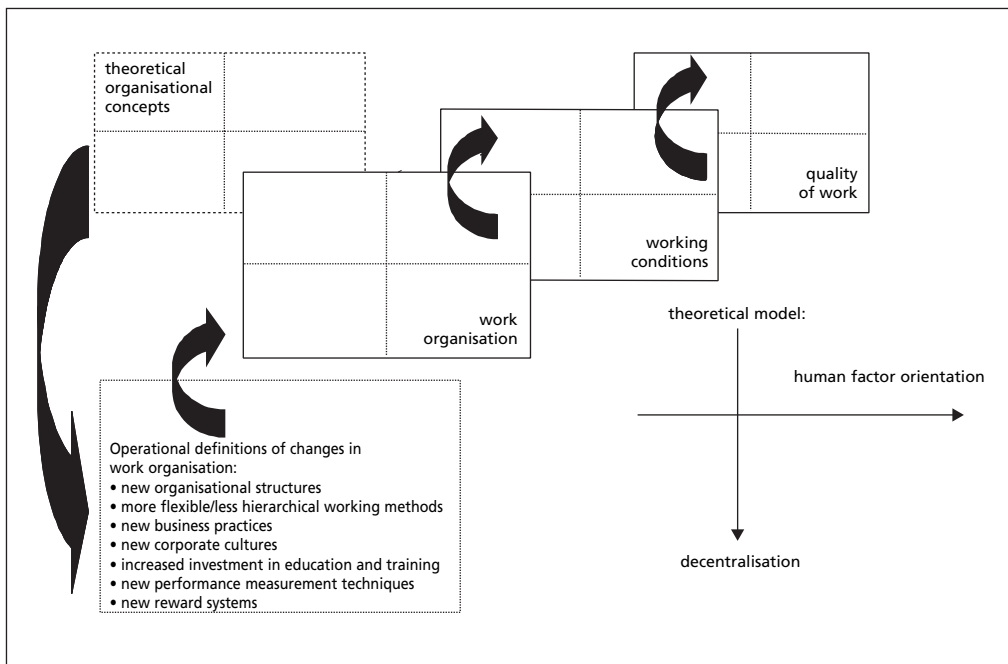
<sup>9</sup> Based on European Foundation for the Improvement of Living and Working Conditions, *Quality of work and employment indicators*, 2001.

<sup>10</sup> This is an example of a 'subjective' definition of quality of work, within the range of many other definitions, under which 'objective' definitions and definitions that focus on causes instead on effects (see also Oeij et al, 1998: 107-8).

<sup>11</sup> Structural aspects (sector, country, etc.) and individual aspects (age, sex, education, etc.) are regarded as background variables.

operational definitions or measurable constructs. Once we have done so, we can review the literature on the coming about of new work organisations. Finally, we can translate the findings on work organisation into the consequences for working conditions and quality of work. Figure 6 summarises this line of reasoning.

**Figure 6 From theoretical concepts to operational definitions and empirical descriptions**



Following the arrows, one can see how we start from the theory with the construction of operational definitions, and how we, subsequently, have carried out the empirical research, i.e. the literature review on work organisation, working conditions and quality of work.

Figure 6 starts with the rectangular depiction of ‘theoretical organisational concepts’. This is in fact our framework to categorise empirical ‘organisational concepts’ along the dimensions decentralisation and human factor orientation (as shown). In other words, the ‘decentralisation–human factor orientation model’ is used to describe the empirical findings in the box ‘work organisation’. We suspect, however, that most researchers –whose work we shall review– have not been using our theoretical concepts. In order to relate the theoretical concepts to work organisation, we have to make an extra step by which available study results can be translated into this model. Therefore, we need to know what kind of organisational change is actually taking place in reality. Research findings indicate a very wide range of organisational changes, reflecting the wide range of circumstances in which they are used. In other words, there is no single definition or format of ‘new work organisations’. Nevertheless, several studies prepared for the European Commission have identified seven main areas in which changes are being introduced. These are presented in Figure 6 in the box with dotted lines, situated lower- left. We use these seven main areas as operational definitions of our theoretical constructs of organisational concepts. This enables us to interpret empirical research findings in terms of our theoretical model. For example, suppose that organisational change in one study proves to be related with high centralisation and a low score on human factor orientation, because striving for cost efficiency is a central aim. We then would evaluate such organisational change as a support for the ‘rigid efficiency’ management concept, belonging to ‘theoretical organisational concepts’, as well as to the same position in the

box ‘work organisation’, presenting these empirical findings. If, in the ideal case, the same study has gathered information about working conditions and quality of work, we evaluate this information related to ‘working conditions’ and ‘quality of work’ as well. This method allows us to theoretically rank and interpret empirical results.<sup>12</sup>

*Theoretical concepts and operational definitions*

Table 2 presents the seven main areas of organisational change in empirical studies, as concluded by several studies prepared for the European Commission. Within each of these seven areas of change a series of common characteristics have been identified, also presented in Table 2. The authors of the study (Business Decisions Limited, 1999: 15-20), from which we adopted the change areas, argue that individual companies adopt a mix of these new ways of organising work. It seems to depend on their strategy, competitive position, and business system. The precise nature of changes is influenced by industrial sector, operating process, company size, managerial expertise, existing work organisation, and existing company culture (elements related to what we earlier termed drivers for managerial choice).

In Chapter 3 the scores of organisational change will be evaluated with respect to the dimension of decentralisation and the dimension of human factor orientation.

**Table 2 Main areas of empirical organisational change**

<p><b>1. New organisational structures</b>  market focused – process oriented  semi-autonomous work teams  reduction in the number of functions  reduction in layers of management</p>
<p><b>2. More flexible and less hierarchical working methods</b>  more flexible working hours  multi-skilling and job rotation</p>
<p><b>3. New business practices</b>  quality management programmes  continuous improvement programmes</p>
<p><b>4. New corporate cultures</b>  strong people orientation  greater focus on customers, service, and quality</p>
<p><b>5. Increased investment in education and training</b>  wider participation in training and education programmes  change in the focus of education and training investment  more systematic approach to training and development</p>
<p><b>6. New performance measurement techniques</b>  use of financial and non-financial performance measures  objectives for teams and individuals  more open information systems  use of new sources of information  changes in individual appraisals</p>
<p><b>7. New reward systems</b>  greater emphasis on performance  greater use of profit sharing, bonuses, and share schemes</p>

Source: Business Decisions Limited, 1998, 1999.

<sup>12</sup> Another example is that organisational change may be reported as sociotechnical. It may very well be possible that we actually evaluate this change as lean production after having related the reported change to the two dimensions of our model. Because, e.g., the installed team structure supplies the employees with little autonomy. We would position this case in the left – lower box and describe the working conditions from the same position.

Organisations either use these new ways of organising or they do not. The degree to which these new ways are being used in certain combinations, determines whether an organisation is decentralised and human factor oriented or not. The combinations of areas of organisational change used by organisations will characterise them as being either Tayloristic, human relations-like, lean production-like or sociotechnical.

#### *Closing the circle: induction of practice into theory*

Having arrived at this point, we are able to connect empirical findings of the reviewed literature that we gathered and studied with the research model into our analytical model. This closes the circle from the analytical model, to the research model, and back to our theoretical framework. By doing so we can draw conclusions about organisational change of 'new organisations' and their structures, their working conditions and quality of work with reference to theoretical concepts and business practices. This should give an impression how new organisations can be evaluated. For this purpose, turn once more to Figure 2, which depicts the relation between the decentralisation–human factor orientation model and the theoretical concepts and business practices.<sup>13</sup>

## **Conclusion**

We presented a model to study empirical change of work organisations in such a way that theoretical organisational concepts and empirical organisational structures can be separated. A major concern to is that companies make choices out of a variety of variables finally resulting in their 'work organisation'. These choices are based on one of the dominating theoretical organisational concepts. It follows that, for example, companies based on lean production organisational structures may differ substantially with regard to market, technology, division of labour and so on. As a consequence, we first need to know the basic theoretical concept used. It is therefore not a proper strategy to study team work or just-in-time production as an organisational *concept*, since they are not concepts themselves but elaborations of concepts chosen, or, in other words, structural consequences. After all, the division of labour within teams (structure) may vary substantially if one compares lean production with sociotechnology (concepts); and JIT (structure) can be also an element of Taylorism or of sociotechnology (concepts).<sup>14</sup>

The decentralisation–human factor orientation model is inspired by the analysis in the EC Green Paper *Partnership for a new organisation of work* (1997) which outlines the challenge of shifting from traditional work organisations to 'the flexible firm'. An intriguing question is why only such a small number of companies arrive at the state of becoming a flexible firm. Is it because organisations show dominance in investments in technology but lack fundamental work organisation reforms (Savage, 2001)? Or do cost reducing measures suffice to remain a market player?

The European Commission wants organisations to embrace the trajectory towards becoming 'flexible firms'. It probably has been Atkinson (1984a, 1984b) who first coined the term 'flexible

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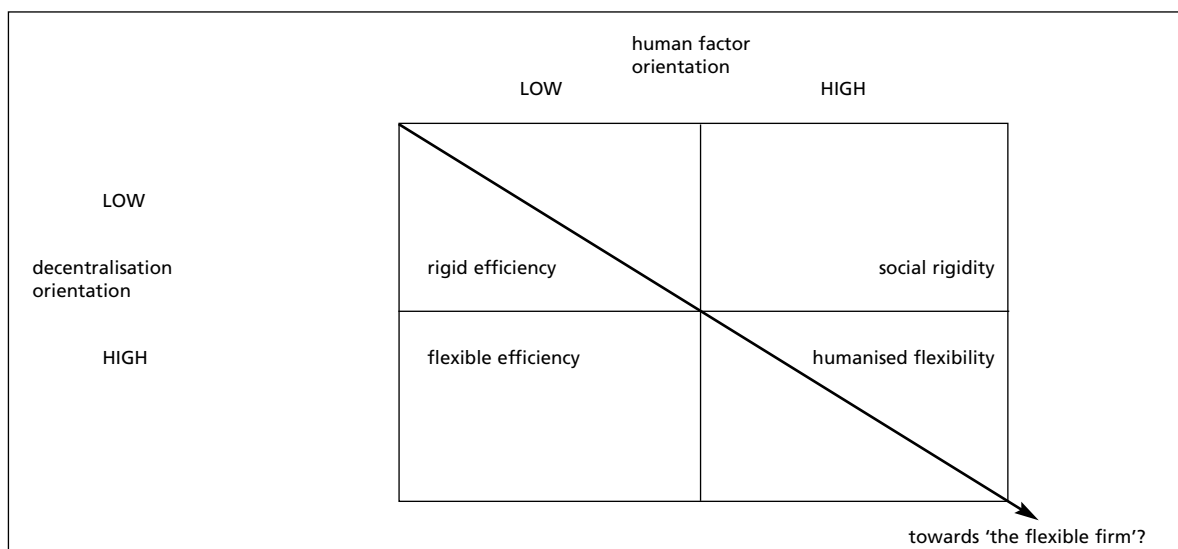
<sup>13</sup> A warning about high expectations is necessary. The literature study will likely not answer all these questions in detail. Testing the theoretical framework requires another research method. But it is important to mention the complexity and variety of work organisations in practice. The framework, however, helps us to classify the literature and to evaluate the results of studies done by others.

<sup>14</sup> In the literature a distinction is sometimes made between management models (concepts) and business practices (structures).

firm’, in which organisations combine a mix of numerical flexibility, functional flexibility, contracting out and flexible remuneration as an answer to changing market circumstances, resulting in a core staff of employees who are functionally flexible, and several periphery groups of non-permanent employees, self-employed persons and subcontractors. The definition used by the European Commission is a different one (see above). The ‘flexible firm’ refers to a process of continuous change which requires high trust and high skill workplaces. Three factors represent this change (EC Green Paper, 1997). First, the rate of innovation and change in products and technologies is so rapid that the competitive advantage of companies and countries lies in the capacity of the workforce to create knowledge. Therefore, (highly-educated and well-trained) people represent a key resource. Second, consumers are more demanding than ever before, enhancing competition in the market-place which in turn forces firms to organise production in such a way as to remain innovative and flexible. The third factor is ICT. One of the main effects of the new ICTs has been a dramatic reduction in the cost and time for storing, processing and transmitting information with fundamental consequences for organising the production and distribution of goods and services and for work itself.

According to the European Commission, Europe’s way towards the flexible firm should be by the ‘high road’ of organisational renewal instead of by the ‘low road’. The ‘high road’ to organisational renewal leads to workplace innovation and competitiveness by continual reinvention of products and services using the European potential of knowledge, skills and experience in a ‘more imaginative and effective way’, whereas traditional ways of organising workplaces and traditional styles of management cannot achieve this. These latter include the ‘low road’ of cost-driven change. The ‘high road’ to the innovative flexible firm should include workplace partnership (democratic dialogue), team-based organisations, make use of all employees’ knowledge, create knowledge-intensive jobs, achieve a careful fit between organisation and ICT and create relations and bonds between (workers of different) companies (Dhondt, Miedema and Vaas, 2001).<sup>15</sup> Special policies are being set up to not just create more jobs, but also better jobs, in particular jobs with a high quality of work (European Commission, 2001).

**Figure 7 ‘Decentralisation - human factor orientation’ model: position of ‘the flexible firm’**



<sup>15</sup> See also European Work Organisation Network (1999), ‘Building organisational competence’, pp. 1-2.

To understand the disappointingly slow adaption of new work organisations (Savage, 2001) the drivers behind management decisions need to be better known.

We now seek to make clear how 'the flexible firm' is positioned in the decentralisation – human factor orientation model. Figure 7 visualises the wish of the European Commission, which, given the limited support that many organisations become such 'high trust, high skill, high performance, high participation' work organisations (Savage, 2001), should be regarded as no more than a hypothesis to be tested.

If organisations are developing into flexible firms, they should – following our theoretical model – feature *work organisations* with decentralised steering and accentuating human resources, *working conditions* resulting in jobs with sufficient control for workers, an absence of physical risks, and employment relationships including career and training opportunities, and *quality of work* which relates to job security, healthy work, learning opportunities and a fit with non-working life.



This chapter describes the empirical findings of the literature review. The following questions will be addressed:

- What kind of organisational renewal can be connected with new work organisations?
- What are the characteristics of present working conditions?
- What are the characteristics of the present quality of work?
- What are the blind spots on these topics in the available sources?

We first review the literature on organisational change. We use a classification of organisational change produced by Business Decisions Limited (1998; 1999) as was mentioned in Chapter 2. Our findings will be grouped into this classification. Finally, we will intend to interpret the findings with the decentralisation – human factor orientation model.

We next outline the main descriptive findings on the present working conditions. Attention will be paid to the demand – control balance, physical workload and the employment relationship.

We then discuss the quality of work. The topics dealt with are job security, health and well-being, competence development and the work – non-working life balance.

All sections offer remarks about gaps in our knowledge. The presence of relationships between work organisation, working conditions and quality of work is the subject of Chapter 4.

## **Work organisation: organisational changes**

Europe's slow acceptance of new work organisations was described in Chapter 2 (Savage, 2001). Labour productivity is an indicator of efficient organising and as such, of economic progress. One of the reasons why European labour productivity lags behind the US is that Europe has been slower to implement new forms of work organisation (EC Green Paper, 1997; Business Decisions Limited, 1999; see also Coriat, 1995). Nonetheless, more and more companies are organising work on a model of 'high trust', 'high skill' and extensive employee involvement in decision-making. The leading companies are introducing 'high performance work practices', such as new organisational structures, new corporate cultures, new working methods, new training programmes, and new motivation and reward systems (OECD, 1996, 1998).

In spite of the wide range of circumstances in which the term 'high performance work organisation' is used, there is no one formula for renewing organisations. Business Decisions Limited has succeeded in identifying seven main areas in which changes are being introduced. And based on the analysis of case studies and surveys they have identified a series of common characteristics within these seven main areas of change.<sup>16</sup> The seven areas are (Business Decisions Limited, 1998; 1999):

- new organisational structures;
- new more flexible and less hierarchical working methods;

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<sup>16</sup> Most of these changes are also described in OECD reports (1996; 1998).



- new business practices;
- new corporate cultures;
- increased investments in education and training;
- new performance measurement techniques;
- new reward systems.

Organisational changes that are presented in the reviewed literature will be grouped into these seven areas. Within each of these areas, Business Decisions Limited distinguished several common characteristics of that change. We expand on these characteristics with some of our own findings.

The organisational changes that we shall describe, will also be evaluated in terms of the decentralisation – human factor orientation model by giving ‘scores’. Each score is characteristic of the type of work organisation (Table 3).

**Table 3 Scores to evaluate organisational change and the type of work organisation**

Score	Decentralisation	Human factor orientation
Positive (+)	characteristic for enhancing decision latitude on lower organisational levels	characteristic for intensifying human competences as a critical resource
Negative (-)	characteristic for <i>not</i> enhancing decision latitude on lower organisational levels	characteristic for stressing efficiency through cost-reduction

Indicators for the type of new work organisations can be derived from evaluating how actual organisational changes can be positioned on the two dimensions: the scores indicate whether organisations tend towards decentralisation or centralisation and towards a human-centred orientation or an efficiency orientation.

From the literature we can conclude that organisational change excludes developments in the direction of rigid efficiency and social rigidity, which means that organisational renewal does not correspond with the Tayloristic and human relations organisational concepts (see also Figure 1). Changes observed tend towards either flexible efficiency or humanised flexibility as is exhibited in Figure 8. In other words, changes corresponding with lean production-like and sociotechnical concepts are dominant. It should be remarked that this may be a bias effect of our sample, aiming at organisational renewal.

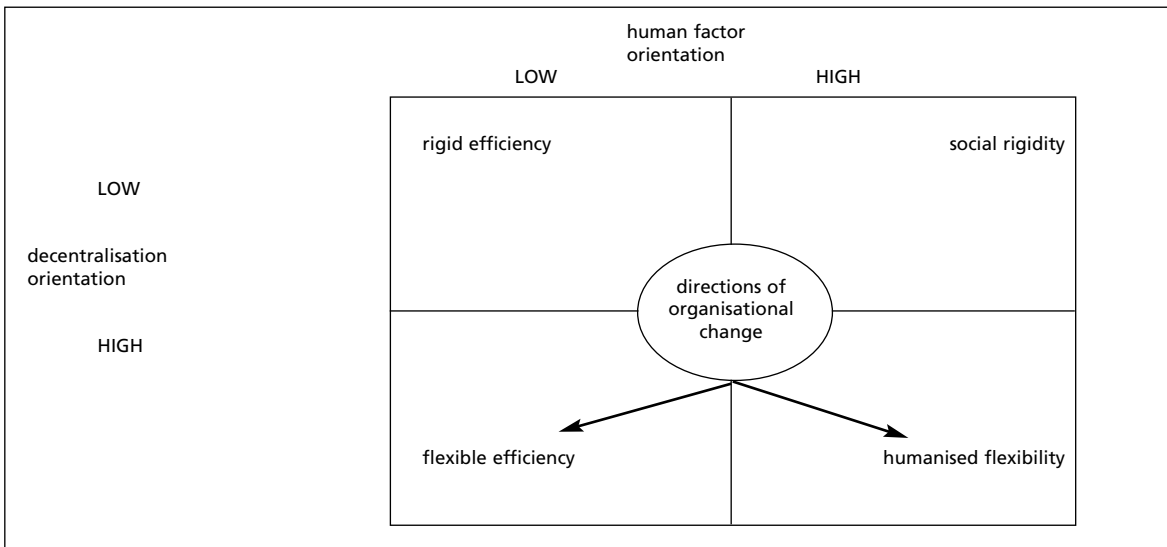
We have not established the prevalence of organisational change. Business Decisions Limited (1999) asserts that ‘high performance work systems’ are in operation in less than 10% of all European workplaces. Nevertheless, we will try to evaluate the significance of the directions of organisational change after our presentation of findings: is flexible efficiency dominant or is humanised flexibility? We will now discuss and evaluate the organisational changes within the mentioned seven main areas. A plus (+) is positive, a minus (-) is negative, a question mark (?) is neither, a plus/minus (+/-) means it can either be positive or negative (Table 3).

#### *New organisational structures*

Business Decision Limited (1998; 1999) states that companies employ a wide range of new organisational structures. They identify the following common characteristics: market focus or

process orientation, semi-autonomous work teams, reduction in the number of functions, and reduction in the layers of management. From the literature we added flow production or service processes, modular manufacturing, and job redesign (Womack et al, 1990; Hammer and Champy, 1993; OECD, 1996; Castells, 1996; Brödner, 1997; Sitter et al, 1997; Benders et al, 1999).

**Figure 8 Tendency of organisational change within the 'Decentralisation-human factor orientation' model**



1. Market-focused or process-oriented business units or divisions

'Some companies have moved away from functional or product based structures to business units that focus on distinct parts of market or critical processes. This enables the organisation to improve its customer focus, and provides clear accountability for managers and employees' (Business Decision Limited, 1999). This internal restructuring is accompanied by a focus on core activities and more horizontal inter-firm links for subcontracting and outsourcing (OECD, 1996: 130) and 'flatter' organisations (Wright, 1996).

This characteristic strongly enhances the decentralisation of decision latitude (+). It is undecided whether this accentuates the use of human competences as a critical production factor (?). Only if accountability for managers and employers is accompanied by sufficient autonomy and control options will it positively affect the human factor.

2. Flow production or service processes

The process is organised in such a way that there are no barriers between stages of the production or service process. Work flows from one stage to another provided by in-progress buffering. The removal of in-progress inventory means that individual employees are much less protected from production uncertainties, and this increases sequential interdependence. Additionally, employees must cooperate to keep the production going (Jackson & Mullarky, 2000).

Organising the work process as a flow takes away coupling points (buffering) and decreases the necessity for attunement, which can be positively associated with decentralisation (+). Concerning

the human factor orientation, it may or may not reduce the interdependencies of workers in this flow process (?). Only where employees have the possibility to freely consult each other for troubleshooting does it positively affect the human factor, because that would stimulate the use of knowledge and the process of shop floor learning.

### 3. (Semi-autonomous) work teams

‘A number of companies have introduced team working, most of which incorporate high levels of accountability for meeting targets, responsibility for operational decision-making, and multi-skilling’ (Business Decision Limited, 1999). The level of management control and employee autonomy, however, differs in teams (OECD, 1996: 135-138). In the literature two types of workgroups or teams are identified: the Scandinavian model<sup>17</sup> (Volvoism) and the Toyota/ Lean Production model (Fröhlich and Pekruhl, 1996: 86; Sisson et al, 1997: 58; Benders et al, 1999: 4; see also Dhondt et al, 2000: 5). Table 4 shows these differences:

**Table 4 Teams according to the Scandinavian and Toyota/Lean Production model**

<b>Dimensions</b>	<b>Scandinavian model</b>	<b>Toyota/Lean Production model</b>
Membership	Voluntary	Mandatory
Selection of the group members	By the group	By management
Selection of the group leader	By the group	By management
Qualifications	Mixed (enables people to learn from and help one another)	Generalists
Rewards	Skill dependent	Uniform (seniority)
Tasks	Complex	Simple
Technology	Independent of pace	Dependent of pace
Autonomy	Large	Narrow
Internal division of labour	Voluntary	Largely prescribed

Source: Sisson et al, 1997: 58, based on Fröhlich and Pekruhl, 1996: 86.

The results of the EPOC<sup>18</sup> studies show that most of the group or team work examined in organisations in Europe could be classified as between these two models, although most of them, however, are tending towards the Toyota model (Sisson et al, 1997; Benders et al., 1999; Savage, 2001: 3).

From this we conclude that there are two kinds of team work that must be evaluated:

#### *Work teams according to the Toyota model*

By definition team work refers to decentralisation (+). However, teams differ in the extent of autonomy delegated to team members. Toyota model work teams are responsible for meeting production, cost and quality targets. Their responsibility for ordering supplies, scheduling production, organising time, recruiting (temporary) staff, redesigning the production process, and so on, is restricted. Besides, improvement of processes through quality control may afterwards result in standardising processes, and therefore, under-using human talents in favour of efficiency. The human factor orientation is, therefore, relatively low (-).

<sup>17</sup> The Scandinavian model resembles sociotechnical teamwork to a large extent.

<sup>18</sup> European Foundation for the Improvement of Living and Working Conditions, *Useful but unused: group work in Europe; Findings from the EPOC survey*, 1999.

#### *Work teams according to the Scandinavian model*

As Table 4 shows that the Scandinavian model scores positive on both decentralisation (+) and the human factor orientation (+). Team membership features several elements of workers' democracy since they participate directly in decision-making.

#### *4 Modular Manufacturing*

Teams of multiskilled operators assemble an entire product, with reduced supervision, and are involved in quality control, machine maintenance and sometimes in setting and meeting group goals (Bailey [1993], Berg et al [1996] in Landsbergis et al, 1999; Jackson and Mullarkey, 2000).

Modular manufacturing shows a positive connection with decentralisation (+). It is unclear if it also positively scores on the human factor orientation (?), because modules do not necessarily appear to alter the division between managers and production workers.

#### *5 Job redesign*

Jobs, tasks and functions are changed from narrowly defined specialisations to broader tasks. In some organisations the number of repetitive tasks reduced and the number of tasks that need high-skilled workers increased (OECD, 1996; Dhondt en Kraan, 2001). Job redesign, altering the job's content as a consequence of organisational change, is not necessarily connected with decentralisation (?).

Job redesign can take two directions: vertical redesign and horizontal redesign.

##### *Vertical job redesign*

Enriching the content of tasks by adding tasks of a higher level which increases decision latitude and learning opportunities. This direction enhances the use of human competencies as a critical resource, therefore, the score on the human factor is positive (+).

##### *Horizontal job redesign*

Broadening the range of tasks without increasing decision latitude and learning opportunities is the horizontal form of job redesign. This does not enhance the use of human competencies as a key resource for production. The score on the human factor is negative (-).

#### *6. Reduction in the number of functions*

'Many companies have (...) reduced the number of functions and integrated specialist expertise into team structures. This has the effect of strengthening focus on external business objectives rather than internal 'political' concerns' (Business Decisions Limited, 1999; see also Hammer and Champy, 1993). Reduction of functions is often linked to the use of teams and multi-skilling. In such cases the reduction in the number of functions goes together with decentralisation (Benders et al, 1999). It can also result in the increase of accountability of team members.

Reduction in the number of functions does not necessarily relate to decentralisation (?). The integration of specialist expertise into team structures has a positive effect on the human factor orientation (+). It can have a very negative effect, namely, when the instalment of multi-skilled teams is preceded by downsizing the organisation – during which people lose their jobs – and is followed by a job redesign characterised by very high workloads – since the same amount of work

has to be done with less staff (see also Rifkin, 1995). Again, control options make the balance.

#### 7. Reduction of layers of management

In many companies, hierarchical structures have been removed and replaced by flatter organisations. This leads to a new role for managers based on 'facilitating and coaching, rather than regulating and controlling' (Business Decisions Limited, 1999). Decision taking is no longer strictly separated from executing the decisions. But this also increased the competencies required of current and new staff (OECD, 1996: 147). Reduction in managers seems to coincide with the introduction of group work (Benders et al, 1999).

Reduction of management layers inevitably relates to decentralisation of decision latitude (+). Managers as well as workers face major changes. The new role for managers may, besides the challenging learning opportunities, imply the loss of control options. Workers' new roles stretch to more responsibility and autonomy. If employees fail to dispose of the proper competencies there can be a loss of control as well, due to the loss of structure and clear accountability which were ensured by their bosses' leadership. The human factor orientation is evaluated as plus-minus (+/-).

#### *More flexible and less hierarchical working methods*

Business Decisions Limited (1998; 1999) found that, alongside the changes in organisational structures, organisations have adopted more flexible and less hierarchical working methods. They distinguish more flexible working hours and multi-skilling and job rotation (Atkinson, 1984a, 1984b; Osterman, 1994; OECD, 1996; 1998; Tregaskis et al, 1998; Oechsler, 2000).

##### 1. More flexible working hours

'Companies have introduced new annual hours work contracts and new shift patterns which enable them to adapt to seasonal sales and irregular surges in demand, whilst maintaining the competitiveness of the company' (Business Decisions Limited, 1999). Many new systems of working hours and working time schedules have appeared over the last two decades (see also OECD, 1996: 154-155; Dhondt et al, 2000: 10-11). Several companies have successfully applied such new systems to cope with dramatic or unpredictable swings in demand. Atkinson (1984a, 1984b) classified this type of change as numerical flexibility. Numerical flexibility enhances a company's capacity to adapt the number of workers to the fluctuations in the production of goods and services. Besides adapting the number of workers, a specialisation of this kind of flexibility is changing the working hours in accordance with those fluctuations.

There is no necessary relation with decentralisation (?) nor with the human factor (?). This is because the management perspective is dominant in this respect. It would be different if companies would allow workers to use flexible working hours to bring a balance in their working and non-working life. Labour shortages, however, force many companies to choose such options, hoping it will bind employees to the firm.

##### 2. Multi- skilling and job rotation

'(T)raditional boundaries between job categories have been removed and employees are encouraged to widen their skills and work in a more flexible way' (Business Decisions Limited, 1999).

Multi-skilling – like the above mentioned job redesign - can be horizontal (more tasks but on the same level; job rotation or job enlargement) or vertical (tasks at different levels; job enrichment). Multi-skilling is what Atkinson (1984a, 1984b) labelled as functional flexibility, the possibility for companies to enhance the competencies of their employees and to adapt these competencies to the changing market demands. Horizontal multi-skilling does not necessarily mean an enlargement of rights and responsibility. Vertical multi-skilling, however, does imply the delegation of rights and responsibility, making jobs diverse and complex (OECD, 1996: 146). Business Decisions Limited (1999) states that job rotation often takes place within (semi-autonomous) teams. Researchers have concluded that this kind of horizontal multi-skilling is a characteristic of the Toyota team model, whereas vertical multi-skilling, such as job enrichment, is a characteristic of the Scandinavian team model (Applebaum and Batt, 1994). Multi-skilling has a link with internal flexibility (flexibility achieved with permanent employees) which also augments the responsibility an employee has about planning and control over his work (Lund and Gjerding, 1996).

For job rotation there is no necessary relation with decentralisation (?). Since job rotation is a rather restricted way of maximising the use of human resources we give a plus-minus score (+/-) on the human factor orientation. Multi-skilling, if related to team work and with the reduction of the number of functions may have a positive effect on decentralisation, but this does not automatically follow and therefore remains undecided (?) (see also Goudswaard en De Nanteuil, 2000). Multi-skilling implies more learning opportunities, more responsibility and, if it coincides with appropriate decision latitude, it positively affects the human factor orientation (+).

#### *New business practices*

In many companies, new business practices have been introduced along with new forms of work organisation. A business practice can be distinguished from organisational concepts, in the sense that the latter is a 'fundamental' management philosophy, whereas the former is a form of management praxis, like the application of new 'management tools'. In other words, a concept is an integral, all-embracing view on modes of production, whereas a business practice is an aspect of that view, focusing, e.g., on production management, operational management, logistics, and (human) resource management.

Business Decisions Limited discerns quality management programmes and continuous improvement programmes (1998, 1999). We supplemented their list with Shop Floor Management and Just-In-Time systems (see also Imai, 1986; Suzaki, 1993; Lindberg and Berger, 1997; Wilkinson et al, 1997).

#### 1. Quality Management Programmes

'Many companies have introduced Total Quality Management programmes, zero defects philosophies, formal quality and procedures, and quality functions. Many have also sought formal quality accreditation such as ISO 9000' (Business Decisions Limited, 1999). Quality management programmes like Total Quality Management (TQM) are characterised by three principles, namely client orientation, continuous improvement and team work. TQM is directed at the organisation as a whole (see also Dhondt et al, 2000: 5).

Quality management programmes are not related to decentralisation. Although it must be said that most quality management concepts imply team work. It is for this reason that we evaluate the decentralisation orientation as positive (+).

Their relation with the human factor can be both positive and negative. The positive evaluation would follow from the fact that employees and their expertise are being involved in quality improvement processes. The negative side is that workers' knowledge could be used to further rationalise and standardise the process without granting workers more autonomy or reward. While team concepts within TQM differ, their main feature is a temporary form of team work between shop floor workers and specialists to solve quality problems, aiming at subsequent standardisation of the process. These team structures are not permanent but temporary (parallel structure). The human factor orientation is therefore not focused on maximising the deployment of human capital. The score is negative (-).

#### 2. Continuous improvement programmes

'These involve everyone in the company in the constant search for small improvements in their everyday work. They empower staff to make a contribution outside of their routine job, to be creative and to become problem-solvers' (Business Decisions Limited, 1999). Programmes that resemble this 'kaizen' praxis are Quality Circles and Employee Involvement, in which small teams of hourly workers meet to solve quality problems (Quality Circles) and productivity problems (Employee Involvement: EI). It will be clear that these programmes have a connection with quality management programmes. Sometimes CI is seen as a part of TQM, sometimes it is the other way around. A distinction can be made in a Japanese approach ('kaizen') and a European approach (Lindberg and Berger, 1997). In the European approach improvement is a part of the regular job. In the Japanese approach this is not the case: workers make contributions for improvement outside their routine job. In this way CI is a 'parallel' structure, while in the European approach we are witnessing the integration of improvement activities within the job routine of workers.

Since continuous improvement programmes presume team work the decentralisation orientation is positive (+). The evaluation of the human factor orientation depends on whether there is talk of a European or a Japanese approach. The European approach features substantial autonomy for workers as CI is part of the job (+), while the Japanese approach with its parallel structures does not enhance workers' empowerment (-). The score is plus-minus (+/-).

#### 3. Shop floor management

Shop floor management combines client orientation outside and inside the organisation, continuous improvement and employee involvement (Suzaki, 1993). Suzaki developed the concept of the 'mini-company' to achieve these (Quality Management) goals on shop floor level. Mini-companies are permanent teams accountable for production and improvement of the process. Through improvement the organisation arrives at standardisation. Contrary to the Japanese situation – where the Toyota production system sets an example - mini-companies in Europe offer many opportunities for the innovation of products and processes, due to the fact that employees in these mini-companies have been given substantial autonomy and are playing a crucial role in determining the standards as a continuous process (De Leede, 1997).

The decentralisation orientation is positive because of its team work (+). The human factor orientation is plus-minus (+/-) depending on the kind of team concept: European (+) or Japanese (-).

#### 4. Just-In-Time systems (JIT)

JIT involves practices that contain just-in-time inventory systems (keeping stocks low) and the elimination of wasted time and motion (called 'muda') (Applebaum & Batt, 1994). With JIT

suppliers deliver products and spare parts only when they are ordered by customers (the so-called kanban or pull system). The prevention of stockpiling reduces stock costs. JIT systems can be an internal company system as well as a supply relation system between companies. JIT systems tend to become more and more supported by electronic means (like Electronic Data Interchange) which may or may not influence the role of customer demand, since technology allows this task to be automatised (Dhondt et al, 2000: 5-6).

The decentralisation dimension is positive (+) due to the supply by a 'pull system'. Just-in-time does not have a clear effect on the human factor (?). The drive for 'muda' can be highly efficiency-oriented, which would be negative. Another point is whether the 'pull-task' has become automated or leaves space for the employee to decide.

### *New corporate cultures*

According to Business Decisions Limited (1998, 1999) there are new corporate cultures evolving in companies. Although companies differ, they have common characteristics. The orientation of management changes in the direction of a strong people orientation and a greater focus on market demands. We added employability and employee responsibility (Arthur, 1994; Walton and Hackman, 1986; Hamel and Prahalad, 1994; Pfeffer, 1994; Geary and Sisson, 1994; Huselid, 1995; MacDuffie, 1995; Sitter, 1995; OECD, 1996, 1998; Pekruhl, 1997; Hertog and Mari, 2001).

#### 1. Strong people orientation

'Most emphasise greater trust, increased participation by the staff at all levels in the organisation and greater personnel autonomy and accountability' (Business Decisions Limited, 1999). Through better communication and consultation the creativity of all employees in the organisation will be harnessed. There is a greater focus on development of individuals. All this indicates a more structured attention to quality of working life, since, generally speaking, staff are involved in the development of the mission and objectives of the company, given greater control over their work, empowered to make decisions, rewarded for creativity, and helped to develop and realise their potential. Keywords in this respect are people management, employee empowerment and participative agreements (see also Pfeffer, 1994; Savage, 2001: 9). These developments coincide with forms of direct participation – individual and group consultation and delegation – that occur in eight out of ten companies within several EU Member States (Sisson et al, 1997; see also Brödner, 1997), and more in public than in private sectors (Hegewisch et al, 1998). Participation is expected to enhance business performance according to a significant number of managers (Sisson, 2000: 29).

A strong people orientation does not necessarily mean the decentralisation of decision latitude in the form of structural organisational change (?). However, viewing a strong people orientation as a changing corporate culture, one cannot but regard this as an example positively affecting employee decision latitude on decentral level. It is quite evident that this also positively affects the human factor orientation (+).

#### 2. Greater focus on customers, service and quality

There is a much greater focus on customers, service and quality. This has moved beyond a set of formal policies and procedures to become embedded within the values of the company (Business Decisions Limited, 1998, 1999). An example is companies who do not solely focus on one aspect



of output, but who have moved to a culture which encompasses a complex set of cultural values, including quality, customer satisfaction, price consciousness, people involvement and so on. Such a culture promotes the atmosphere of common goals and shared values among management and employees. The focus is much more on the outside world than on the internal organisation.

This outward orientation is not the same as decentralisation, although both go hand in hand most times, because decentralisation is partly aimed at a closer connection between the market and the organisation, as is exemplified by business units. Therefore, we tend to associate a greater focus on customers, service and quality with decentralisation (+). The outward orientation is not synonymous with a high human factor orientation (?).

### 3. Focus on employability

Organisations are encouraging employees to play more roles than usual, which means moving toward multi-oriented attitudes. There is a greater focus on the employability of people. Work should enhance the future opportunities for employment through the present career opportunities in the design of work and career ladders (Moss Kanter, 1993). This is a responsibility for employers. Workers, in turn, should strive to become employable, that is remain capable of being employed during their working life. Workers become employable and multi-effective by enhancing their knowledge and experience due to the variety in their (changing) work. Employability can be considered as a set of worker's motivational attitudes, including the motivation to learn, the motivation to be functionally flexible (multi-effective), the motivation to operate under flexible working times (numerically flexible), the motivation to be mobile (geographically mobile and mobile on the labour market) and to be well-disposed towards (organisational) change. Employability seeks to couple the interests of employers (always competent employees) and employees (permanently qualified). Such new labour relations are based on a culture of reciprocity resulting in lifetime employability (Gasperz and Ott, 1996). The management of employability is not just simply a new form of personnel management. It is also a kind of employee entrepreneurship, an enterprising engagement with one's own career.

Employability is strongly related to the very concept of decentralisation, since responsibility is located on the lowest, individual, level (+). Of course, companies must facilitate the process of employability. It has a positive effect on the human factor orientation (+), notwithstanding employers' interests are being served as well.

### 4. Greater employee responsibility

Control and coordination is no longer a management task only, but also an employee responsibility. It is not rules but shared goals and a shared philosophy that motivate workers and set new values for organisational behaviour. Workers are expected to give of their best for the organisation and to take the initiative, rather than to follow the rules (Walton and Hackman, 1986; Arthur, 1994; Huselid, 1995; Dhondt et al, 2000). These new forms of 'organisational control' are the reverse side of enhanced 'professional autonomy' of employees. Detailed control during the work process is replaced by output control. Acquiring more employee responsibility stresses a shift from a control strategy to a commitment strategy. Control systems do not acquire involvement of employees to operate well, whereas commitment systems stimulate worker involvement, which leads to the intended efficiency and effectiveness, as is exhibited in Table 5 (Walton and Hackman, 1986; see also Arthur, 1994; Huselid, 1995).

**Table 5 Control strategy versus commitment strategy**

Control strategy	Commitment strategy
Influence bottom up is minimal; decision structure is top- down	Workers are responsible for planning and control activities; management pays attention to workers ideas
Rules ensure workers know what to do	Not rules but goals and shared values tell workers what to do
Coordination and control by management	Coordination and control by workers
Organisation's tasks are divided into small and well defined parts	Focus is on self steering teams; teams are responsible for their results
Tight control, direct supervision, hierarchical organisation structure	Workers are expected to manage themselves; competence and experience are basis for authority / control; flat organisation structure
Limited autonomy for individuals	Substantial autonomy for individuals
Workers are expected to follow orders, not to take initiative; Minimum standards for output; Rewards are based on job level, sometimes together with rewards based on output	Workers are expected to give their best for the organisation, to take initiative; Rewards are based on skills, sometimes with profit sharing, or on group rewards

Source: Walton and Hackman, 1986.

The delegation of control means decentralisation with a positive effect on decision latitude (+). Because human competences on lower levels are becoming crucial in coordinating and managing processes in the organisation, the human factor orientation is positive as well (+).

*Increased investment in education and training*

Some companies have introduced new approaches to training and education, which is characterised by a significant increase in the level of investment. These approaches include a wider participation, a shift in focus of skills, and a systematic approach (Business Decisions Limited, 1998, 1999). The demand for training is connected with organisational changes and new technology (OECD, 1996, 1998). It is also related to the shift towards an increasing knowledge intensity of the production process (Dhondt et al, 2000: 6-7; Hamel and Prahalad, 1994; Nonaka and Takeuchi, 1995) and human resources management to manage and mobilise human talents (Hertog and Mari, 2001; Sitter, 1995).

1. Wider participation in training and education programmes

Training is no longer restricted to skilled workers and managers, but all employees are encouraged to participate in training programmes. Not only new employees participate in training programmes, but also experienced employees (Business Decisions Limited, 1999).

This aspect of personnel management, namely companies training policies, is not necessarily connected with decentralisation (?). It affects the human factor orientation in a positive way because all employees are stimulated to further develop their competences (+).

2. Change in the focus of education and training investments (widening skills)

The focus of training is no longer only on the vocational skills needed for their existing job, but on widening workers' vocational skills (technical and business skills) to carry out larger jobs and on social and psychological skills (personal skills) such as problem solving, team working and interactive skills (Business Decisions Limited, 1999). In training (as well as in recruitment) there is a stronger focus on learning potential than on present skills alone.

The relevance of this kind of multi-dimensional skilling is also illustrated by the growing importance of emotional intelligence and coaching skills for leaders and for 'integral managers', who simultaneously ought to master at least financial, operational and personnel management techniques (see also OECD, 1996: 146).

This widening of skills is not characteristic for decentralisation (?). Again, this will positively affect the human factor orientation because of the broad development of employees' competences (+). A negative, 'perverse' effect, however, could be hidden in the enhanced mental workload of the growing job demands.

### 3. A more systematic approach to training and development

Several companies have introduced a systematic approach to the development of employees. The focus of training is no longer 'ad hoc' or 'on the job'. Besides, employees themselves are involved in determining their own specific needs (Business Decisions Limited, 1999). This partly resembles the concept of employability with reference to continuous learning – see above – and stretches further than the present job. Such systematic training can be part of so-called personal developmental plans or part of human resource management aiming at the continuous improvement of employee skills in order to achieve the companies goals, like the Investors In People (IIP) programme.<sup>19</sup> In some companies, cross occupational teams or learning groups are created also to increase knowledge development and learning possibilities.

Systematic approaches to training and development do not need to be related to decentralisation (?). It will have a positive effect on the human factor orientation, since it provides employees with participation in their own development and is directed at an optimised use of human resources (+).

### *New performance measurement techniques*

In many companies, organisational changes have been accompanied by new measurement techniques of performance of both the individual and the organisation as a whole, which has an impact on people's behaviour in the organisation (Business Decisions Limited, 1998; 1999). Distinctive features of these techniques are the use of (non) financial performance measures, setting decentralised objectives, open information systems, new information sources, and decentralised forms of appraisal (see also Dhondt et al, 2000; Dhondt, Miedema, Vaas, 2001).

#### 1. The use of financial and non-financial performance measures

Organisations are focusing on non-financial performance measures (such as customer satisfaction, process efficiency and organisational learning) to understand drivers for future financial performance, as well as historic financial performance (Business Decisions Limited, 1999). These kind of quality control techniques can, for example, be found in the auto industry, where there is a link with the shortening of cycle times, zero default systems, and waste and repair (rework) prevention.

These performance measures have no relation with decentralisation (?), unless the accountability for performance is delegated to lower organisational levels. Nor has it a clear effect on the human factor orientation (?).

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<sup>19</sup> This originally UK-developed programme has a Dutch website link at: [www.iipnl.nl](http://www.iipnl.nl).

## 2. Objectives for teams and individuals

More companies are shifting from exclusively setting objectives for managers, functions and the organisation as a whole, towards (also) setting objectives for teams and individuals, which links back to the overall corporate objectives (Business Decisions Limited, 1999).

This is clearly an aspect of decentralisation (+). Decentralised objectives will, however, only have a positive effect on the human factor if workers have gained sufficient control to meet the objectives. Since this does not need to be the case, the core is undecided (+/-).

## 3. More open information systems

More open, transparent and regular information flows, which enables staff at all levels to understand performance, have been introduced in many companies. This facilitates teams and individuals, and not just senior officials, to take appropriate decisions, based on this critical information about the performance of the company (Business Decisions Limited, 1999). Such systems are used in professional organisations employing consultants, architects, researchers, solicitors, IT-specialists and so on.

Decentralising the flow of information does not necessarily enhance decision latitude on lower levels, but in this case it is meant to do so. Therefore, the evaluation on the decentralisation orientation dimension is positive (+). From this follows that the human factor orientation is positively affected as well (+). Obviously, this kind of open information systems are meant to facilitate appropriate reactions by people who use their competences.

## 4. The use of new (external) sources of information

Traditional (internal) sources of information to measure performance are complemented with information from external sources such as market research, benchmarking and direct customer response (Business Decisions Limited, 1999). Some quality management systems are using (external) client evaluation surveys.

External information systems are no feature of decentralisation itself (?), although it may help to promote an outward orientation. The same evaluation can be given for the human factor orientation. These systems have no clear relation with the application of the employee's resources (?).

## 5. Changes in individual appraisals

Companies increasingly appraise staff against specific performance targets, using horizontal assessments by other employees and placing greater emphasis on forward looking development (Business Decisions Limited, 1999). An example of a horizontal appraisal method is '360 degree feedback', by which employees evaluate their leaders.

These forms of individual appraisal in the organisation do not necessarily correspond with decentralisation of decision latitude (?). It does, however, ply for the use of human resources on lower levels. The human factor orientation is a positive one (+).

### *New reward systems*

Companies that have introduced new forms of work organisations tend to introduce new reward systems to complement changes, such as a greater emphasis on performance and more profit

sharing (Business Decisions Limited, 1998, 1999). These changes strengthen incentives for improved performance and reduce risks for enterprises by lowering the difference between revenues and labour costs (OECD, 1996: 151; OECD, 1998; Vickery and Wurzburg, 1996).

1. A greater emphasis on performance

Instead of being driven by seniority or pay scales, the new reward systems place greater emphasis on performance of individuals and teams (Business Decisions Limited, 1999). Pay is based on team performance, on output and quality, on efforts for training, job mobility and job rotation. These forms of merit rating as a flexible wage or as a flexible plus payment on a basic wage have become usual in large parts the higher segments in the profit sectors.

Merit rating is not synonymous with decentralisation but with individualisation. The score on the decentralisation dimension is undecided (?). The score on the human factor dimension is plus-minus (+/-), and is depending on the influence employees have in setting the standards for performance, and thus for pay levels.

2. Greater use of profit sharing, bonuses, and share schemes

Irrespective of the performance of the company most rewards of employees have been 'fixed' in the past. Part of the reward of (some) employees is increasingly being related to the performance of a relevant section of the company (Business Decisions Limited, 1998, 1999). This has led to various forms of profit sharing, bonuses and share schemes for employees (see also OECD, 1996: 151-154).

Performance-related reward systems that address all workers in a more or less uniform way can be seen as a form of decentralisation, in the sense that employees become accountable for what they can earn (+). In so far that this has a positive effect on the human factor, one has to make a distinction between workers who bear large risks with such systems, because they have moderate wages, and those who will not bear large risks in terms of subsistence security. The score therefore is plus-minus (+/-).

*Evaluation of organisational change and the decentralisation – human factor orientation model*

Table 6 summarises the empirical organisational changes in work organisations found in the literature that we have just described. For every organisational change the score given above on the two dimensions is presented. Here we shall try to evaluate what kind of change is apparent in terms of organisational concepts.

A positive score (+) on the decentralisation orientation means enhancing decision latitude on lower levels and, on the human factor orientation, intensifying the use of human competences as a critical resource. A negative score (-) on the decentralisation orientation indicates that decision latitude on lower levels is not enhanced and on the human factor orientation that there is a stronger focus on efficiency than on human resource mobilisation (Table 6). A question mark (?) means that the form of organisational change has no (clear cut) effect on the dimensions, whereas a plus-minus score (+/-) says it can have both positive and negative effects on the dimensions.

Table 6 Results of the evaluation of organisational change

Evaluation of organisational change	Decentralisation orientation	Human factor orientation
<b>1. New organisational structures</b>		
1. Market focused or process oriented	+	?
2. Flow production of service process	+	?
3a. work teams: Toyota model	+	-
3b. work teams: Scandinavian model	+	+
4. Modular manufacturing	+	?
5a. Job redesign (vertical)	?	+
5b. Job redesign (horizontal)	?	-
6. Reduction of number of functions	-	+
7. Reduction of number of management layers	+	+/-
<b>2. More flexible and less hierarchical working methods</b>		
1. More flexible working hours	?	?
2a. Multi skilling (vertical)	?	+
2b. Job rotation (horizontal)	?	+/-
3. Increasing employee autonomy	+	+
<b>3. New business practices</b>		
1. Quality management programs	+	-
2a. Continuous improvement : European	+	+
2b. Continuous improvement : Japanese	+	-
3a. Shop Floor Management: European	+	+
3b. Shop Floor Management : Japanese	+	-
4. Just-in-time systems	+	?
<b>4. New corporate cultures</b>		
1. Strong people orientation	?	+
2. Focus on customers, service and quality	+	?
3. Employability	+	+
4. More employee responsibility	+	+
<b>5. Increased investment in education and training</b>		
1. Wider participation in training	?	+
2. Focus on widening skills	?	+
3. Focus on systematic training	?	+
<b>6. New performance measurement techniques</b>		
1. More non financial performance measures	?	?
2. Objectives for teams and individuals	+	+/-
3. More open information systems	+	+
4. The use of new sources of information	?	?
5. Changes in individual appraisal	?	+
<b>7. New reward systems</b>		
1. Emphasis on reward of performance	?	+/-
2. Greater use of profit sharing	+	+/-

Legend: + positive score on dimension ; - negative score on dimension; ? not relevant for dimension / no clear impact on dimension; +/- can both have a positive and negative effect on dimension.

Figure 3 shows four types of organisational change within the decentralisation – human factor orientation model. Changes with both a positive score on the decentralisation dimension and on the human factor dimension can be characterised as humanised flexibility. Changes with a positive score on the decentralisation dimension and a negative score on the human factor dimension can be characterised as flexible efficiency. The scores in Table 6 support the conclusion that many changes seem to be positively affecting decentralisation, meaning enhanced decision latitude on lower organisational levels. Although we can not speak of a firm conclusion, we are asserting that, at least, there are many opportunities to enhance decentralised decision latitude. Changes towards a strong human factor orientation are far less pronounced. Many changes are evaluated as undecided, which means that they can have a positive or a negative effect on intensifying human competences as a critical resource, depending on contingent factors. In other words, managerial choices will determine whether organisational change tends towards humanised flexibility or towards flexible efficiency. Our tentative impression is that flexible efficiency dominates over humanised flexibility. Therefore, the majority of ‘new forms of work organisation’ probably bears the stamp of lean production-like changes<sup>20</sup>. Contrary to this tentative conclusion is that many of the forms the organisational changes take could also tip the balance towards humanised flexibility. Table 7 shows that many of these changes would fit well also with humanised flexibility and that there is a substantial ‘grey area’ of ‘undecided’ forms of organisational change. All of these ‘undecided’ forms can actually be interpreted as options for managerial choice.

*Table 7* Options for managerial choice

<i>flexible efficiency</i>	<i>undecided grey area</i>	<i>humanised flexibility</i>
Toyota work teams	Market focus / process oriented	Scandinavian work teams
Quality management	Flow production	Increasing employee autonomy
Japanese cont. improvement	Modular manufacturing	European cont. improvement
Japanese shop floor mgt	Job redesign	European shop floor mgt
	Reduction management layers	Employability
	Multi-skilling	More employee responsibility
	Job rotation	Wider participation in training
	Just-in-time systems	Focus on widening skills
	Focus on customers	Focus on systematic training
	Objectives teams / individuals	More open information systems
	Changes individual appraisal	
	Reward on performance	
	Greater profit sharing	

To answer why most changes tend in the direction of lean production-like solutions, further research into the drivers for managerial choice is needed. This would help clarify why more organisations are not embracing the ‘flexible firm’. The statement by Business Decision Limited that new forms of work organisation demonstrate that cost reduction is rarely the principal reason for their introduction (1998: 9) makes this question even more pressing. The changes seem to help companies to improve their innovative capacity, operating efficiency, customer service, benefits from technology investments and in adopting quality management. Companies give people a central role in their competitiveness (Business Decisions Limited, 1998: 9-10). And yet, their solutions seem to be lean production-like above all (see also Lay et al, 1999: 161).

<sup>20</sup> This is consistent with the conclusion of Sisson et al. (1997) who state that most examined workplaces were positioned between the Scandinavian and the Toyota model, with a tendency towards the Toyota model. See further Landsbergis et al. (1999); Lewchuk et al. (2001).

*Societal and cultural factors*

Developments on company level alone may not be able to explain what kind of organisational change comes to the fore. Other factors, like economic, social and cultural circumstances, may have a substantial influence.

Looking at Western economies worldwide, the OECD (1996: 170-1; 1998: 274-5; Vickery and Wurzburg, 1996: 19-20) discerned three approaches to adaptability and flexibility, which may shed light on possible cultural differences. The Anglo-Saxon economies have a 'market-driven approach', influenced by the relatively liberal structure of markets. The Nordic European and Rhine countries show a more 'relations-based' or consensual approach, based on stakeholder negotiation and more restricted capital flows. We would like to add a strong tradition of worker democracy as well. The first approach is largely characterised by external, numerical flexibility, whereas the second approach features a stronger focus on internal, functional flexibility (for these terms see also Atkinson, 1984a, 1984b). This seems to support the argument that Anglo-Saxon economies have an affinity with flexible efficiency and that Northern-European and Rhine countries have an affinity with humanised flexibility. The third approach is found in Japan. It is also a consensual one, but it is centered more at firm level and is more technology-oriented. According to the OECD it has more of the elements of internal, functional flexibility and is most notably present in large firms. This seems to fit well with lean production-type organisations and quality management systems that stress the company as a 'family' in which individuals' interests are subordinate to the companies interests (see also Nonaka and Takeuchi, 1995). An important question is if globalism will weaken these national-cultural forces, leading these three economies to converge direction (see also Hofstede, 1980; Kerr, 1983). The OECD concludes that, while maybe these economies may not be converging, formerly distinct national and regional patterns between these economies already show signs of 'losing their uniqueness' (1996: 170).<sup>21</sup> For the present it can be argued that Japanese and US models (i.e. lean production alternatives), with their narrow structural emphasis on productivity, are quite distinct from European trends, says the European Work and Technology Consortium 'A tendency towards job enlargement rather than job enrichment appears to characterise, for example, the American automotive industry or Japanese-owned plants in the UK. Workers in such plants are required to be versatile and well trained, but real empowerment and creativity on the shopfloor or in the office is limited' (European Work and Technology Consortium). It might be because of this limited attention to workers' democracy, American entrepreneurs are quicker to carry through innovation.

The diffusion of organisational innovations, despite the fact that change towards high-skill, high-trust flexible firms is undisputed, is relatively slow in Europe when compared to the US. Besides, changes do not always present a general turning away from Taylorism, given the widespread use of lean production concepts. Another explanation is that managers prefer the incremental path to change instead of radical change, bearing the risk that small steps alone have no significant effects. An 'integral approach' to change is rare (Sisson, 2000: 24-25, 30; see also MacDuffie, 1995).

Policies aimed at the diffusion of organisational renewal are not widespread. 'Reasons include the fact that it is difficult to define the characteristics of these work practices and strategies, that it is

<sup>21</sup> See also Sisson et al. (1997), who observe a distinct north-south divide in Europe, where firms in northern Europe were more likely to adopt bundles of initiatives for organisational change, with or without direct participation, than in southern Europe.



up to employers and workers to implement change, and that most countries lack a broad policy approach to the new challenges confronting businesses. Furthermore, human resource issues are not typically part of industry policies, while education and training and labour market policies have tended to ignore firm and industry dynamics' (OECD, 1998: 285). The challenge at company level is to further integrate strategic management issues, operational management issues,<sup>22</sup> and human resource management issues to indeed achieve a integral (re)design of organisational structures. We expect these three disciplines to be the crossing point for present organisational change and in the very near future. Ambitious as it is already, management should also succeed in participating employees in the change process, otherwise successful reorganisations will be limited (OECD, 1996, 1998; Brödner, 1997; Fröhlich and Pekruhl, 1996; Pekruhl, 1997).

#### *Concluding remarks*

We have drawn on the categories of organisational change devised by Business Decisions Limited (1998; 1999). Although their seven main areas of change cover many topics some imperfections should be noted:

1. An important observation is that Business Decisions Limited does not present a clear definition of organisational change and of 'new forms of work organisation'. Organisational changes reflect a wide range of circumstances and developments which is encompassed by the term 'high performance work organization', whereas '(N)ew forms of work organizations are a means to an end, not an end in themselves. They are used by companies to implement strategic decisions that are taken in response to a range of business challenges and pressures' (Business Decisions Limited, 1998: 8, 11). This enables Business Decisions Limited to list a diversity of topics under organisational change. As a consequence, their grouping is inconsistent and excludes forms of change that could have been incorporated. It is inconsistent because examples of change presented within certain subdivisions, could be placed elsewhere as well. The topic 'multi-skilling and job rotation', for example, is classed as a feature of 'more flexible and less hierarchical working methods', but it could also be classed as a feature of 'new corporate cultures' or 'increased investment in education and training'. Other forms of change could be part of these areas as change but have now been excluded. A few examples of these changes have a link with new types of organisations,<sup>23</sup> the introduction of new technology (ICT),<sup>24</sup> new visions and methods within human resource or personnel management<sup>25</sup> and with respect to the employment relationship and the labour market,<sup>26</sup> and new forms of financial management. Notwithstanding our criticism of Business Decisions Limited, we find their work useful. We simply stress once again the need for clear working definitions in the research of organisational change.

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<sup>22</sup> Including disciplines such as marketing and research and development.

<sup>23</sup> Like network organisations, telework, virtual organisations, project organisations, E-commerce related organisations, and so on.

<sup>24</sup> Like Workflow/Document information systems, Enterprise Resource Planning, internet, intranet, extranet, Electronic Data Interchange, mobile IT solutions (Dhondt et al, 2000: 11-12).

<sup>25</sup> See for example the support for the hypothesis that investments in HRM practices are associated with lower employee turnover, and greater productivity and corporate financial performance (Huselid, 1995; see also MacDuffie, 1995; Arthur, 1994, Osterman, 1994; Pfeffer, 1994). Consider also the need for appropriate health and safety preventing strategies and policies that will help to stabilise and promote employees' health and productive capacity, given the expectation that success in the future will depend on the human resources of knowledge and creativity (Bullinger, 2000).

<sup>26</sup> We elaborate on this theme of the employment relationship later in this chapter because the employment relationship will probably become a very crucial element of future change related to individualisation, the context of non-working life and the demand for highly qualified personnel.

2. In our definition of a work organisation a distinction is made between the structure of production, the structure of management and the division of labour. A striking observation made is that none of the forms of organisational change deal with the (re)design of the production structure, the 'hard' side of business administration. Changes in strategic management are found, such as more market focusing, as well as changes in operational management and business practices – like task structuring and supportive management concepts such as quality management and information policies – but no fundamental restructuring of the mode of production is observed.<sup>27</sup> In our view this restructuring is a basic element of new work organisations. The reason why we distinguish organisational structures (new work organisation) from management behaviour (drivers for managerial choice) is, first, to get a clearer picture of how organisations apply organisational concepts like lean production, business process re-engineering, sociotechnology, and so on, and, second, how drivers of managerial choice affect the designed organisational structures.<sup>28</sup> The relevance of this point is that experts differ on whether changes in health risks, job satisfaction and labour productivity, should be achieved through alterations of the organisational structure or through alterations of organisational behaviour. Some argue that the design of the production structure implies choices for the final quality of work, such as decision latitude on shop floor level. Others claim that structures need not to be changed radically and that it suffices to motivate workers with challenging targets and appropriate rewards through charismatic leadership. Another view is that changing selected aspects, like the introduction of new ICT, will automatically lead to improved organisational performance and better jobs. These examples show that we do not fully know which 'control buttons' to press to achieve the desired effects. For most experts it is clear that 'structure follows strategy', but it is not obvious which structure one should prefer since it is unclear which 'behaviour follows structure'.<sup>29</sup>

3. Another point to mention is that organisational changes affect different organisational levels, namely on the level of tasks and functions, the level of departments, the level of companies as a whole, and the level of networks connecting companies. It depends on the level affected by this change whether organisational change is beneficial or not. Positive consequences for the company, for example, may be negative for individual employees' jobs. In their description of presented forms of organisational change, Business Decisions Limited state that it is a misconception that the new forms of work organisation are confined to particular types of companies and sectors. They are used everywhere for many purposes: large and small companies, all types of sectors, profit and non-profit, low tech and high tech sectors, fast growing and mature industries, in local and global markets, and in long-established and new companies (Business Decisions Limited, 1998: 8-9). Given that change apparently occurs 'everywhere', a closer view on what happens where would surely help to establish the effects on different levels.

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<sup>27</sup> Of course, several authors refer to restructuring like organising in flows and modules, but not so much from the viewpoint of how fundamental changes in the structure affects managing and executing tasks in a fundamental way as well.

<sup>28</sup> Managerial and work practices are not measured very well. Its relevance is substantial, given the very small amount of variation in productivity, wages and job destruction explained by standard observables across plants like size, age, capital intensity, industry, high-techness, etc. (OECD, 1996: 139). We add that larger and multinational firms are more likely to adopt new organisational forms than smaller ones (OECD, 1996; OECD, 1998: 277; Lund and Gjerding, 1996). See also the current Hi-Res project set up to identify drivers for change (Dhondt, Miedema and Vaas, 2001).

<sup>29</sup> This again stresses the importance of examining the environmental influence (especially of stakeholders) on decision taking on company or sector level (see also Lewchuk et al, 2001). For example, some stakeholders do not have a clear view on how and whether direct participation should be supported (Regalia, 1995). One can imagine this is a crucial factor for the division of labour in new forms of work organisations.

4. Little is known about the prevalence of new work organisations, although we know it is not widespread (Sisson, 2000; Savage 2001; see also Kinkel and Wengel, 1999: 29-30). Estimates vary between 10% and 25%, with manufacturing companies in the lead, but they concern all kinds of organisational change (OECD, 1996: 133; Business Decisions Limited, 1999). We need precise definitions of work organisations and of forms of organisational change to measure this prevalence. Subsequently, the drivers for managerial choice must be exactly determined, theoretically and empirically.

5. Little is known about the effects of the different organisational changes either, especially about the distinctive contributions of each of these changes to better company performance and to better jobs. The productivity and job gains associated with new technologies, however, are best realised when firms make complementary investments in organisational change and upskilling (OECD, 1998: 271). But there is no single model which automatically brings benefits. The OECD (1996: 169) concludes that the 'lines of causality are not simple and rely on the combined use of a bundle of organisational structures and workplaces (...). It is the bundle of strategies associated with workplace reorganisation and firm competitiveness, including enterprise training and a highly skilled workforce, that improves performance' (see also Osterman, 1994; McDuffie, 1995; Askenazy, 2000). Another implicit plea for precise definitions and close examinations of facts and relations between facts.

In our view, the evidence about the rise of new work organisations is widely observed but rather globally described. In general, there does appear to be a move towards a type of organisation that focuses more on core activities, has a more decentralised management structure, distributes responsibility more widely, and demands greater flexibility and more skills from its workforce, as well as a move towards flatter hierarchies and more complex information flows (OECD, 1996).

## **Working conditions**

### *Introduction*

A description is given on the main findings on the present working conditions in this section. In Chapter 2 three topics were distinguished referring to the conditional approach of working conditions: the demand-control balance in jobs, physical aspects in terms of physical workload, and the employment relationship. This section is relatively short with respect to physical workload, because our literature was not very much focused on this topic, and with regard to the demand-control balance, due to the fact that we will discuss this subject more elaborately in connection with organisational change in the next chapter. More attention will be paid to the employment relationship. We expect that the employment relationship will become an important element of organisational renewal, now that boundaries of organisations and between organisations seem to be vanishing as well as boundaries between working life and non- working life. The employment relationship might be the main binding factor of employees and employers in the future.

### *General working conditions including physical workload*

Table 8 provides a picture of the general working conditions in Europe (Houtman et al, 2001b), which is based on the Third European Survey on Working Conditions (Paoli, 2001). The results are given in percentages of workers who said 'yes' when asked about the presence of each theme in his or her working situation.

**Table 8 Working conditions in the European Union in general, 1996 and 2000**

Risk factor	1996 (% workers)	2000 (% workers)
noise >50% of working time	13	14
vibrations >50% working time	12	11
lifting heavy loads >50% working time	13	15
strenuous working postures >50% working time	22	23
repetitive hand/ arm movements >50% working time	38	39
dependent on machines	20	18
high speed work >50% working time	32	32
sufficient time to finish the job	77	77
use of computers >50% working time	20	23
dependent on customers	68	71
control over working method	72	69
control over work pace	72	69
learning opportunities	74	71
demands and skills in balance	90	91
intimidation during working time	7	9
sexual harassment	2	2
no night shift	78	81
no work related absenteeism	78	89
fatigue due to work	20	22
stress due to work	28	29
backache due to work	30	32
headache due to work	14	15
limb disorders due to work	9	16

Source: Houtman et al, 2001b.

The working conditions in 2000 slightly worsened compared to the 1996 situation and the following themes can be regarded as problematic:

physical aspects: repetitive movements (39%); backache (32%); strenuous working positions (23%)  
 psychosocial aspects / demands: high speed work (32%); stress (29%); dependency on customers (29%); fatigue (22%)

Causal risk factors from the perspective of the conditional approach (see below) are repetitive movements, high speed work and the dependency on customers. These may be worrying factors if they have a relationship with the decrease of control options, like control over working method and work pace. Such factors may eventually determine effects like backaches, stress and fatigue.

Other worrying elements in Table 8 are the reduction in learning opportunities and the increase of limb disorders. And while they are not a major problem, intimidation and sexual harassment deserve attention since they should not be workplace features in the first place.

In another study on working conditions in branches (Houtman et al, 2001a), based on the same survey, it was concluded that some conditions, like long working hours, are highly prevalent in many branches, whereas other conditions are highly branch specific. Branches with the highest number of varying unfavourable working conditions are transport and 'horeca' (hotels, restaurants and catering). Financial, public and social sectors experience the highest number of different

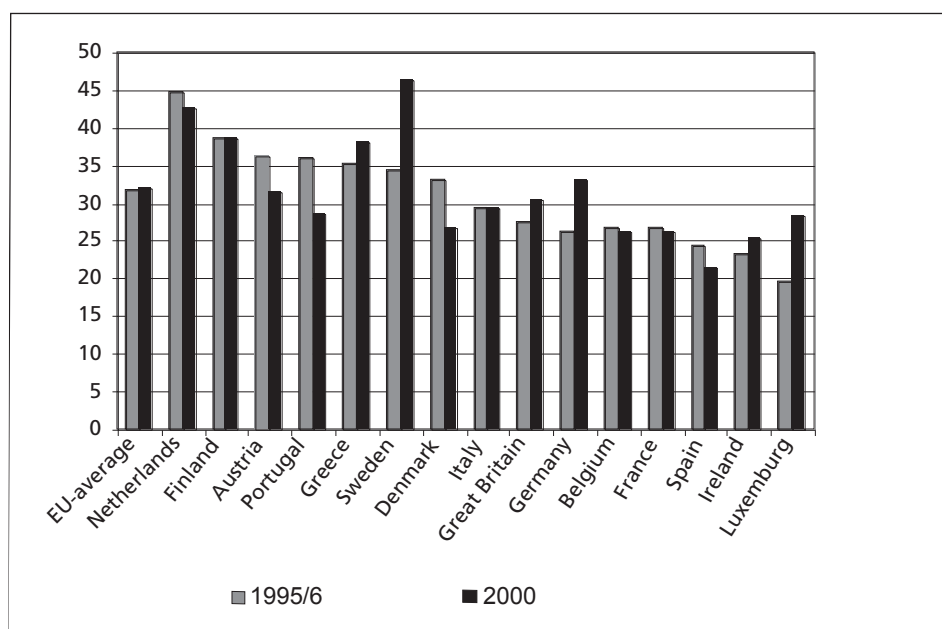
favourable working conditions. Sales and retail sectors have the best balance between favourable and unfavourable working conditions. It was further concluded that branches with work related musculoskeletal disorders saw a correlation with risk factors in the physical working environment and ergonomic characteristics. Branches that had a high score on work related stress issues also had jobs with low control, high demands and the presence of discrimination or harassment.

*Demand-control balance*

Within our literature search studies about the demand-control balance model (Karasek, 1979; Karasek & Theorell, 1991; Karasek, 1997) focus on variables, such as, psychological demands or cognitive demands (problem solving demands, skill utilisation, monitoring demands, production pressure), physical demands (work pace), control (autonomy, task control, timing control, method control), social support (social contacts, group cohesiveness, trust in co-workers, group social support), information and feedback (see Jackson and Mullarkey, 2000; Dhondt, 1998; Dhondt and Kraan, 2001; Dhondt, Kraan, Van Sloten, 2001; Daubas- Letourneux et al, 2001; Kraan & Van Sloten, 2001).

A central element and a main problem with respect to demands is the high speed work (work pace) that is experienced by 32% of employees in the European Union in over 50% of their working time (Figure 9). Figure 9 shows that the Netherlands had the highest score in 1996 whereas in 2000 Sweden scored highest with Greece in second place. Denmark and Portugal faced a substantial decrease, whereas Luxembourg experienced a substantial increase.

**Figure 9 European Member States and the change in the percentage of employees experiencing high speed work in over 50% of their working time during 1996-2000**



Source: Paoli, 2001; adaption Houtman et al, 2001b.

A few researchers in the literature reviewed worked with the job demand-control model.<sup>30</sup> Their findings focus on several aspects of job demands and job control in work situations of European workplaces.

- High strain jobs (high demands and low control) which are most likely to create occupational stress, are mainly to be found among skilled blue-collar workers, in the transport sector, catering and in metal manufacturing, among young workers, and equally among male and female workers; administrative and service jobs are most prominent among low strain jobs (low demands, high control); unskilled blue-collar workers have mainly passive jobs (low demands, low control); managers and white-collar professionals make up the most prominent group with active jobs (high demands, high control) (Dhondt, 1998).<sup>31</sup>
- The whole of Europe shows a strong intensification of work and increasing time constraints (Dhondt, 1998).
- Work is becoming more and more intensive: over 50% of workers work at high speed or to very tight deadlines for at least a quarter of their working time (Merllié and Paoli, 2000).<sup>32</sup>
- Control over work has not increased significantly: one third of workers say they have little or no control over their work while only three out of five workers are able to decide when to take holidays (Merllié and Paoli, 2000).
- The pace of work is increasingly dictated by human demands (working with clients etc.) and by work done by colleagues and less by production norms and automatic speed of machines (Merllié and Paoli, 2000).
- Workers in transport and communication and plant operators, machine operators, sales workers and service workers have experienced a sharp decline in their control over work, whereas the majority of European employees saw their control increase (Merllié and Paoli, 2000).
- The content of jobs show tasks with the autonomy for solving problems, meeting quality standards and assessing the quality of one's own work. Monotonous work decreased, but so did task complexity and learning opportunities (Merllié and Paoli, 2000).
- Demands are increasing for workers (Quinlan et al, 2000; Goudswaard, 2001), including permanent workers (Letourneux, 1998a) and for core workers (permanent workers and full timers). The latter experience more intensification of work than peripheral workers (non-permanent and part-time workers); nonetheless demands increase also for non permanent workers who lack job control (Goudswaard and Andries, 2001).

Job demands have increased and this was not always the case with job control.

<sup>30</sup> For reviews of empirical evidence of the model see Karasek, 1997: 34.13. Further it is mentioned that TNO Work and Employment possesses a database based on circa 11,000 respondents that operates as a reference for surveys in companies and sectors with a model that is derived from Karasek's job demand – control model.

<sup>31</sup> The increase has levelled off in the last years (Figure 9).

<sup>32</sup> Figure 9 shows lower percentages due to another basis of computation, namely employees experiencing high speed work in over 50% of their working time.

*Physical workload*

We have not been specifically searching for sources with respect to research on physical workloads. See, however, above where attention was paid to physical aspects, and below where aspects of health and well-being and physical workload are dealt with. We further refer to the literature for a general view on the European situation (Paoli, 1997; 2001) and for specific musculoskeletal disorders and repetitive strain injuries (Bongers et al, 1993; Moon and Sauter, 1996; Bernard, 1997; Blatter and Bongers, 1999).

*Employment relationship*

This section deals first with some empirical information on flexible work and contracts. What follows is a discussion of two models about the employment relationship. This is a relevant discussion because future relations between employees and employers will be highly influenced by developments such as individualisation, combining work with non-working life, recruiting and binding qualified employees, and the organisational boundaries in a network society (e.g. see Castells, 1996; Sennett, 1998).

The division of labour in organisations has two aspects (see also Fruytier, 1994: 4-5, 75-155). The first one is the operational or functional relation, referring to decision-taking about operational management. On the job level this concerns the decision latitude of employees and the contents of their job. The second aspect consists of the contractual relationship, which deals with the terms of employment agreed upon in the (individual and collective) labour contract – like wages, holidays, working time, etc. - and arranged in the companies personnel management system (especially during individual performance evaluation interviews) – like career opportunities, training schedules, etc. Besides these formal aspects of the employment relationship one can distinguish an informal aspect, namely the tacit agreement or psychological contract between an employer and employee about what the employee will ‘put in’ to the job and the rewards and benefits for which this will be exchanged (Watson, 1995: 139). The tacit agreement features elements of both the operational and contractual relationship. In this section we will first focus on the type of labour contract. Subsequently we shall discuss the possible consequences for the types of employment relationships related to the internal and external labour market position of employees, related to two theoretical models.

Some facts

The OECD (1996: 167) observed the following relations between organisational change and a demand for labour market flexibility:

- The increase of part-time employment is congruent with an organisational shift towards external flexibility.
- The growth of ‘agency work’ (also called the ‘temporary help’ industry) is seen as evidence of achieving organisational flexibility through temporary employment.
- Lower levels of employment tenure (duration of employment relationships) can be seen in countries with a greater use of external flexibility and vice versa.
- The evolving dispersion of earnings supports the notion of a greater individualisation of contracts, which reflects changes in employment flexibility.

These changes occurred in the first half of the 1990s, when the Western economies were recovering. Goudswaard (2001) recently examined changes in contractual relationships within the

European Union (see also Dhondt et al, 2000; Goudswaard and Andries, 2001). The researcher's findings deal with relations between employer and employee and self employment. The share of permanent (open ended) contracts in the total employment has decreased in the 1980s and 1990s, whereas the share of fixed (short term) and temporary agency contracts has increased. However, the percentage of employees with non-permanent jobs seems to have stabilised at less than 15% of the total, including employment through a temporary employment agency not exceeding 2% of the total. The share of self-employed people has increased. Part-time work has grown significantly. In 2000 more than a quarter of all EU-employees work less than 25 hours weekly, especially female employees (Goudswaard, 2001). Apart from these contracts, one can observe that flexibility is widespread in all aspects of work: working time ('round-the-clock' and part-time work); the organisation of work (multi-skilling, teamwork and empowerment); and employment status (almost a fifth of all employees work under non-permanent contracts) (Merllié and Paoli, 2000).

Today's organisations and employees are using a variety of contractual relationships between employers and employees and between firms, like networking, outsourcing, subcontracting, project-working, etc. These practices raise the question as to where the organisation's boundaries are and who the employer is. In Goudswaard's view 'all these developments lead to the conclusion that we can no longer study work processes from the perspective of one (large) organisation and the (relatively stable) relation between one employer and its employees'. These developments will affect boundaries of companies, the deployment of labour, interdependencies, social relations and career opportunities. Precarious employment due to the fact that changes are global, complex and speedy (Goudswaard, 2001; see also Castells, 1996; Sennett, 1998; Cox et al. 2000). It is no surprise that more people experience an increasing intensification of work and time pressure (Goudswaard, 2001; Quinlan et al., 2000; see also Dhondt, 1998).

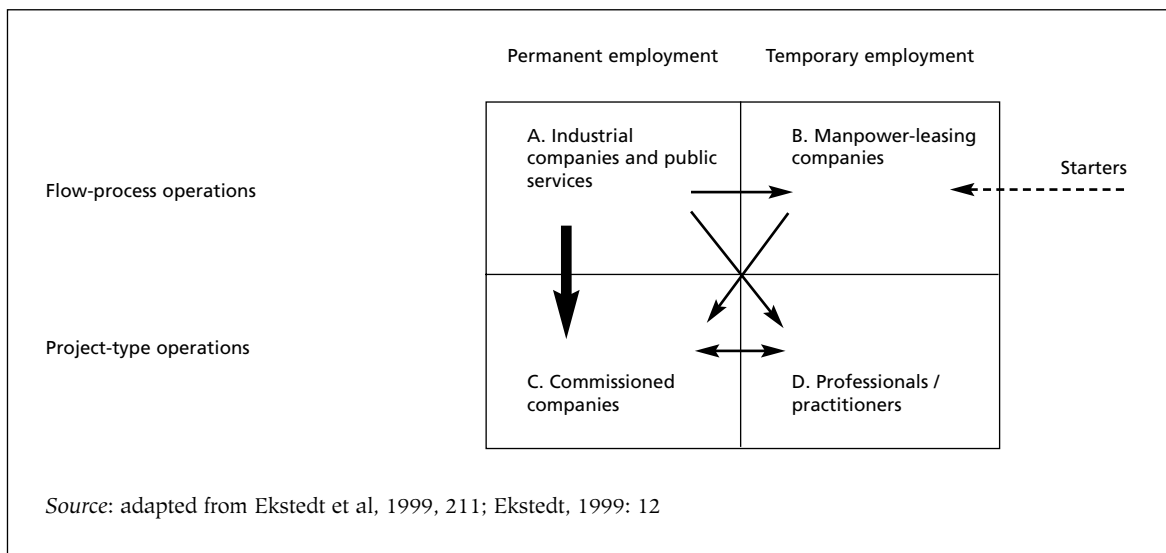
#### Two models

The employment relationship is a crucial element of the system of industrial relations. The process of exchange on the labour market is increasingly characterised by individualisation or 'flexibilisation' of the terms of employment. Examples of these are new reward systems and 'cafeteria-systems' by which employees can choose from various options to draw up their own terms of employment (like more free time in exchange for a higher wage or vice versa). The shortage of workers on the labour market and the growing demand for highly educated persons make the employment relationship the key link between organisations and people. The question arises: what kind of employment relationships will become dominant? In seeking an answer, we present two, more or less, opposite theoretical models.

Swedish researchers observe a greater use of projects and temporary organisations, especially in industry, which leads to a project-type economy, having certain contractual effects and consequences for labour market segmentation (Ekstedt et al, 1999; Ekstedt, 1999; see also Goudswaard, 2001). They argue that fast-changing market circumstances resulted in the expansion of temporary organisational solutions resulting in two characteristics that resemble the process of outsourcing: more use of networks and project organisations and an extensive work division in different companies. Another development that is simultaneously taking place in many companies is the change from routine flow process production operations to project operations. This in-company transition to project-organised production is at the same time a transition of detailed, rule-directed work to knowledge intensive, goal and problem-directed work (Ekstedt, 1999: 11-12).



**Figure 10 Relationship between the organisational activity and the contractual forms between organisation and individual**



How this affects employment relationships and the labour market is shown in Figure 10. Figure 10 combines forms of organising (flow-process operations versus project-type operation) and forms of employment (permanent jobs versus temporary employment) in creating four types of work organisations. According to Ekstedt et al. (1999; and Ekstedt, 1999) permanent employment is a standard for flow process organisations, as in industry and partly in the public service production. These ‘type A’ industrial companies have characteristics of bureaucracies. Permanent relations between employers and employees are settled on a detail level. ‘Type B’ manpower-leasing organisations are a growing phenomenon. They lease staff for short-term employment. Primarily concerned with routine activities like typing and office service, manpower-leasing companies more recently broadened activities to more sophisticated activities, like knowledge intensive work, but remain a segment of limited size. ‘Type C’ is the quadrant of commissioned or consulting companies, consisting of the new project-type organisations. These organisations have a high added value in their performance as consultants. In ‘type D’ one finds self-employed professionals and practitioners. They work to a time limit, have a good basic knowledge, the ability to keep up with the competition, a good reputation and a high level of expertise. They are freelance professionals within different domains. This quadrant is small and volatile.

Ekstedt et al. (1999) asked what will happen if the share of workers in temporary organisations should increase (see the arrows in Figure 10). They expect a significant flow from ‘type A’ to the other three types. The flow to B, however, will be limited as it will reach a ceiling for its size. The flow towards C will be quite extensive, since this reflects recent developments in industry, according to the authors. Newcomers on the labour market will not be able to enter easily through A and C, since jobs in these types of organisations require high knowledge and experience. Newcomers will not enter through D, unless they possess a much-sought talent. The B-quadrant consists of the type of organisations where starters will most likely begin their working life.

Ekstedt et al. (1999: 220-1) foresee a rough division of the labour market with three segments. A ‘core group’ consisting of the staff in the permanent, contract signing parts of the organisations.

Around this core is a ring containing 'type C' project employees and 'type A' subcontractors. The next ring is composed of 'type B' and 'type D' temporary employees. The barriers between the segments are high due to the high knowledge required for project work.

The Ekstedt model supports the hypothesis of a shift towards flexible efficiency, that is more external flexibilisation and numerical flexibilisation. The OECD reports (1996, 1998) provide evidence for this development in Anglo-Saxon economies. Based on the Third European Survey on Working Conditions, Goudswaard and Andries (2001) conclude that full-time jobs with a permanent contract are losing some ground – although most jobs are of this type – and that there is an increase in part-time jobs, non-permanent jobs<sup>33</sup> and self employment (see also Letourneux, 1998a, 1998b; Goudswaard and De Nanteuil, 2000). These facts also support the Ekstedt model.

Nevertheless, developments could go into another direction, where the shift towards a project-economy itself is not so strong, but where the power of workers and their unions, due to shortages in the labour force, determine the shaping of new employment relationships.

Fruytier (1998) examined the development of the contractual aspect of the employment relationship within the context of increasing (functional and internal) flexibility and labour market shortages in the Netherlands. Fruytier distinguished two dimensions. The first one is the degree of trust or control, which is a regulating factor of the operational relation (like work content and autonomy). High trust means that employees have substantial autonomy and responsibility. High control refers to the opposite. The second dimension is the degree in which market freedom or binding by the organisation determine the realisation of the contractual relation. This refers to whether the labour productivity of the employee should be ensured through market characteristics (market 'transactions', external regulation) or through human resources management (internal regulation). In times of scarcity of personnel ensuring labour productivity through the market implies, for example, high wages, while ensuring this productivity through human resources management would, for example, imply attractive jobs, training and career opportunities. The two dimensions result in four types of employment relationships (Fruytier, 1998: 47-8; see also Ouchi 1979, 1980; Williamson, 1981; Have and Vissers, 1987: 11-23):

- the bureaucratic relation, which is characterised by an operational relation focused on control and a contractual relation focused on organisational binding. These employees are controlled by rules and hierarchy. They have a moderate level of autonomy. The main recruitment criterion is education;
- the spot market relation which is characterised by an operational relation focused on control and a contractual relation focused on market regulation. These employees are controlled through wages and output. They have little autonomy. There are hardly any recruitment criteria, due to an over-supply of this kind of labour which makes for cheap labour;
- the clan relation which is characterised by an operational relation based on trust and a contractual relation focusing on organisational binding with mutual warrants against a contractual split for employee and employer. These are the organisation's core employees, whose productivity is controlled by tradition, hierarchy and shared values. They have substantial autonomy. The main recruitment criteria are personality and ability;

<sup>33</sup> Although there is no further growth of non permanent contracts in the EU (Goudswaard and Andries, 2001).



Contrary to Ekstedt et al, the Fruytier model indicates support for changes towards humanised flexibility, based on functional flexibility which is enhancing workers' employability. Research, however, does not provide very strong evidence for the replacement of numerical flexibility for functional flexibility: both forms are widely apparent (Fruytier 1998; Goudswaard, 2001). Besides, most organisations use combinations of forms of flexibility in practice.

Since they are above all theoretical concepts based on scattered empirical information, both models<sup>34</sup> carry interesting hypotheses about the future of the employment relationship that demand empirical testing.

*Concluding remarks*

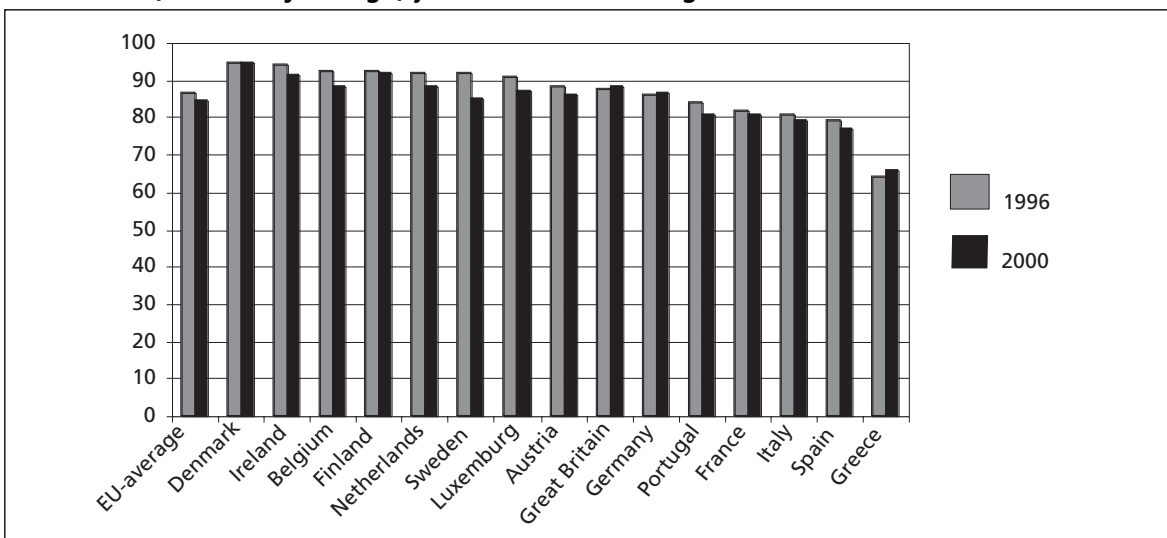
Working conditions are changing constantly. Job demands and physical demands seem to be increasing. It is important to know to what degree (future) arrangements in employment relations, besides job control, can realise a balance between the interests of employees and employers, especially since these relations are tending to individualise (see also Goudswaard and De Nanteuil, 2000).

**Quality of working life**

*Introduction*

The quality of work refers to job security, health and well-being, competence development and the relation between work and non working life (see Chapter 2). In this section we will briefly present some empirical information on the quality of work in Europe. We begin by discussing the job satisfaction of European employees. Job satisfaction can be regarded as the way how employees evaluate their quality of work. Figure 12 exhibits findings based on the European Survey on Working Conditions (Paoli, 2001; Houtman et al 2001b).

**Figure 12 EU Member States and the change in the percentage of employees experiencing (reasonably to high) job satisfaction during 1996-2000**



Source: Paoli, 2001; adaption Houtman et al, 2001b

<sup>34</sup> Based on different views of flexibility strategies, the labour market situation, and the organisation of work.

Although the average level of job satisfaction has decreased slightly, it is still very high. There is not much difference between the countries. Greece has the lowest percentage of satisfied workers, but shows a slight increase since 1996. It should be remarked that job satisfaction is a misleading measure for the quality of work since perceptions and individual evaluations may give a distorted view of the objective characteristics of workplaces. Job satisfaction scores are questionable because they are always somewhere between 75% and 85%, which suggests that the score says something about how employees adapt to their working situations and not much about the quality of work itself.

One observation from the literature review merits attention. Despite relatively high physical risks, pressures due to the pace and speed of work and physical health problems, most self-employed workers, especially in the secondary and service sector, are experiencing job satisfaction (Letourneux, 1998b).

#### *Job security*

From the literature review we can present the following findings on job security:

- Job security is probably the most controversial issue connected with changes in firm structures and strategies, according to the OECD (1996: 155): ‘Concerns about employment security appear to be one of the most important sources of resistance to change; they are fed by highly publicised cases of “downsizing” and other changes made to adjust changes resulting from adoption of new technology and work structures, such as reductions in layers of hierarchy; from rationalisation in order to focus enterprise activities on core areas; or from outsourcing of certain activities and services’.
- Due to gender segregation at work, women may experience less job security than men, given that women work less in senior / managerial positions, work less hours per week, have less control over time schedules, are less involved in decision making and participation, more often have hectic jobs (high demands, low control, i.e., high strain) and less often have active jobs (high demands, high control), are more often subjected to sexual harassment and discrimination, and more often possess precarious jobs (Kauppinen and Kandolin, 1998; see also Webster and Schnabel, 1999).
- A feeling of job insecurity and exclusion is related with flexible contracts, i.e., atypical forms of work (contingent, precarious contracts) (Klein Hesselink and Van Vuuren, 1997; Goudswaard, 2001).
- The feeling of job insecurity has grown sharply in the 1990s (Goudswaard, 2001) caused by ill-functioning social security institutions and a feeling of uncertainty due to mergers and reorganisations.

Clearly, job security is an issue in times of recession, but it is always an issue for employees with a relatively weak position on the labour market.

#### *Health and well-being*

Health and well-being is a broad field that is concerned with occupational safety and health effects of occupational accidents and diseases (OSH outcomes) and the exposure to risks. The European Agency for Safety and Health at Work examined the number of European employees that are exposed to risks or that have experienced accidents (2000; 31-2).<sup>35</sup> They observed that the main

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<sup>35</sup> See also Table 8.

indicators for OSH risks are that work pace is determined by others than the worker, a high prevalence of repetitive movements, and high-speed work. Employees signify that substantial numbers of them experience OSH outcomes such as musculoskeletal disorders, stress and work-related sick leave. This is consistent with the conclusion that the most common work-related health problems are backache (33%), stress (28%), muscular pains in the neck and shoulders (23%), and overall fatigue (23%) (Merllié and Paoli, 2000).

The health and well-being of workers have improved due to the disappearance of many harsh and hazardous type of work in the last century, but are again at risk as a consequence of psychosocial and physical risks which are related to the increase of competition and labour productivity.

#### *Competency development*

We have not studied any resources that had a special focus on competency development and on the process of qualification. In general, the average level of competencies and education has risen ever since the 1960s.<sup>36</sup> The type of qualifications sought is shifting away from technical-vocational skills in the 1970s and 1980s. Besides these skills, employees must increasingly acquire social-communicative skills.<sup>37</sup> Organisational change stimulates competency development and knowledge management (Hamel and Prahalad, 1994; Nonaka and Takeuchi, 1995).

Competition stimulates organisational change towards a more effective and flexible workforce, resulting in greater diversity and complexity of tasks. This can be arrived at by upskilling in the labour force (upgrading). Evidence of this process appears in a shift from low-skill to higher-skill occupations and also in increased educational attainment of employees. Upskilling has taken place in manufacturing and within high-technology industries and services (OECD, 1996: 81-90, 157).

#### *Relation of work – non-working life*

Our sample of reviews consists not much information on the reconciling of work and family life related to new work organisations. This will be a major issue though, since individualisation, scarcity of labour, and the feminisation of the labour market will affect possibilities for organisational change (see also Bleijenbergh et al, 1999: 6-7; Webster, 2001; Sennett, 1998).<sup>38</sup>

#### *Concluding remarks*

The quality of work has two aspects. On the one hand, it seems that most employees are satisfied with their jobs. On the other, we observe the existence of feelings of job insecurity, threats to health and well-being, an ongoing pressure on competence development, and the possibility that many employees have problems in attuning work to their non-working life. We need to know which aspects of working life enhance the sense of quality among workers. For most workers it may be expected that supporters of high quality job contents outnumber supporters of high wages, but is not all that simple. The work force, however, is highly heterogeneous, which necessitates a detailed determination of the interests of segments and target groups. As stated before, it is not sufficient to look at job satisfaction alone.

<sup>35</sup> Although learning opportunities have decreased slightly in Europe (Table 8), indicating a form of under-utilising skill.

<sup>37</sup> We did not review studies about the changing levels of education and qualification in relation to labour market developments, labour mobility and job demands.

<sup>38</sup> For information on family-friendly working arrangements and working time visit: [www.familyfriendly.ie](http://www.familyfriendly.ie)

## **Comment**

Organisational change or new forms of work organisation is dominated by the trend towards flexible efficiency; to a lesser extent changes towards humanised flexibility can be observed. It seems that managerial behaviour is a key factor in the change of direction that companies take. To find out how the change process actually develops, it is absolutely necessary to work with clear definitions (theory-based operational constructs) and to produce very accurate descriptions of 'new organisations' and drivers for managerial choice.

The literature we have reviewed is far from complete, which is not surprising, given the limitations of this research. What it does reveal, nonetheless, is that there is an abundance of sources on work organisation, working conditions and quality of work: definitions, concepts, theories and qualitative and quantitative empirical data. This requires a careful delimitation of the research, which was not the intention at the start of this inventory research. We will, however, try to do this in Chapter 5, when we will discuss options for future research.

# Relationships between work organisation, working conditions and quality of work

This chapter examines possible relationships between:

- (elements of) work organisation and (elements of) working conditions;
- (elements of) working conditions and (elements of) quality of work;
- (elements of) work organisation and (elements of) quality of work.

The literature on these relationships is incomplete. Besides, we have not been able to review all existing sources in this field. Therefore, we shall present some examples of possible relationships, which is meant as a starting point for further examinations. These examples cannot be regarded as representative studies.

## Relationship between work organisation and working conditions

In respect of work organisation or organisational change we can look at possible relations with three types of working conditions, namely the demand-control balance, physical aspects and the employment relationship.

work organisation	working conditions: demand-control balance physical aspects employment relationship
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From our sample of studies the connection we can describe best is that between work organisation and the demand–control balance. We do not have enough insight into the connection with physical aspects and with the employment relationship, although some remarks are dedicated to these relationships first.

The relation between work organisation and physical aspects is highly dependent on the type of work or sector and on technology. In some sectors labour is more onerous than elsewhere. Sectors with severe physical labour, for example, are construction and health care. Technology and automation have reduced the burden of production processes in industry as has the improved design of tools, partly as a consequence of legislation on working conditions. The introduction of computers, ICT and software applications also helped in this regard.

Relationships between work organisation and employment relationships are mainly dependent on scarcity of labour (supply and demand) and business cycles (growth or decline). The combination of labour supply and business cycles determines if employees or employers have the most bargaining control and if organisations tend to numerical or functional flexibility. Other factors that have a major impact on the employment relationship are personnel management and preferences of employees in how to attune working life with non-working life. A final relevant factor is how mutual relations between producers and between producers and consumers shall develop. The rise of networks, virtual organisations, and the like, from which blurring organisational boundaries may evolve (see Castells, 1996), could affect employment relationships in such a way that these will



become the main form of 'work organisation': organisational functions become fragmented and labour becomes individualised so that the employment relationship is the connecting factor of 'work' and 'organisation'.

*Evidence of relationship with work organisation*

Before we look at how work organisations affect the demand – control balance, we present some general observations from the literature about the relation between work organisation on the one hand, and demands, physical workloads and the employment relationship on the other. Most of these observations are empirical results from research and a few of them are research-based postulations.

*Demand – control*

- 'The studies reviewed provide little evidence to support the hypothesis that auto manufacturing workers are empowered under lean production. Lean production intensified work pace and demands. Increased decision authority and skills are very modest or temporary, and decision latitude remains low (...) The exception to this general conclusion tend to appear in groups of workers who participated in the implementation of the new forms of work or in which worker influence was secured through collective bargaining' (Landsbergis et al, 1999; for similar conclusions on business process re-engineering see Wright, 1996).
- Lean production does not empower auto workers; on the contrary, lean production creates intensified work pace and demands. Increases in autonomy and skill levels are modest or temporary, whereas decision latitude remains low resulting in job strain (Landsbergis et al, 1999; Lewchuk et al, 2001). Others argue that lean production improves company performance, autonomy and skills (Womack et al, 1990; Fukasaku, 1998).
- JIT systems remove any 'free time' a worker may have leading to further restrictions on workers' time and activities (Landsbergis et al, 1999).
- TQM approaches empower employees by expanding their horizontal control while simultaneously expanding management vertical control over the total production process (Landsbergis et al, 1999).
- Both individual and collective timing control (elements of autonomy) are significant lower in (lean production) work groups than in more traditional groups. (Lean production) teams report higher levels of work demands than more traditional groups (Jackson and Mullarkey, 2000).
- The balance between positive and negative effects of lean production team working depends on management choices in the form of work design, e.g. managerial styles by interaction with employees (Jackson and Mullarkey, 2000; see also Lewchuk et al, 2001).
- The introduction of self-management and self-control into team structures may increase stress factors within teams, especially for low-performing team members (Oechsler, 2000).
- The growing complexity of work will lead to extreme situations, like seeming contradictions. For example, people must be extremely cooperative to be successful with their team and at the same time engage in conflicts in order to enhance competitiveness. This 'management of dualities' suggests new risks, such as the psychological uncertainty of being able to cope with dualities (Oechsler, 2000).
- From the impact of lean production regimes in the automotive industry on four dimensions of the quality of working life – employee empowerment, workload, health and safety, management

policies – it was concluded that employees had not experienced significant positive gains in the quality of working life or in empowerment. The impact on employees, however, varies across companies, since new employment standards that are being imposed are a consequence of a contested process where management's capacity to shift to new standards and labour's ability to protect its interests vary across workplaces. This variation is linked with the different economic positions of companies and different pre-existing relations between management and labour, resulting in the emergence of company-based production regimes, which explains differences in the implementation of lean production concepts (Lewchuk et al, 2001).

#### *Physical aspects*

- In jobs with ergonomic stressors, intensification of labour appears to lead to increases in musculoskeletal disorders (Landsbergis et al, 1999; see also Belkic et al, 2000).

In general, we would like to remark that physical conditions have a more direct link with technology and the structure of production. For example, repetitive work is more a feature of old technologies than of the organisational concept in use.<sup>39</sup>

#### *Employment relationship*

- Human resource management will positively affect the organisation's performance and job satisfaction which will accrue to employees in the form of higher wages and benefits, and greater employment security (Huselid, 1995).
- Knowledge management and networks of competencies will replace the hierarchical order within companies and as a consequence will lead to flexible forms of employment; for individuals this will mean that employability will replace stable employment and will be the source of sustainable income (Oechsler, 2000).

#### *Work organisation and job demand – control as an element of working conditions*

There are more of such scattered observations presented above. But there is not much systematic information on the relationship between work organisation and working conditions. Nor are there many studies in our review that examine the relationship between forms of work organisation and health. Furthermore, these studies use different operational definitions for the same concepts which makes them difficult to compare.

However, we can try to interpret the relation between the work organisation and working conditions if we focus on the demand-control balance in jobs. We will use the decentralisation – human factor model (Chapter 2) for this purpose, which helps us to identify differences in the demand-control balance in different types of organisations. A next step then is to estimate how this demand-control balance in jobs is connected with the quality of work, especially with a focus on health and safety risks. Again we will use the decentralisation–human factor orientation model to interpret what types of jobs and risks will occur in different types of work organisations.

We therefore present the relationship between forms of work organisation and health in two steps:

1. What types of jobs, characterised by their demand-control balance as an element of working conditions, can be found in different forms of work organisations?

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<sup>39</sup> Our decentralisation – human factor orientation accentuates the management structure more than the production structure, which also explains a lower priority for physical aspects in this study.

2. What are the effects of this demand-control balance, as an element of the working conditions, on health and safety risks, which are elements of the quality of work?

The evidence for these relationships is, at best, of a tentative nature. The first question is answered in this section after which the second question is addressed. Types of jobs in work organisations based on the demand-control balance.

A major element in the quality of work is the content of the job, which is crucial for the meaning of work. Often, employees judge job content to be more important than rewards. The content of the job is characterised by decision latitude (autonomy, control options) and learning opportunities (personal and competency development). Control or decision latitude, however, is not regarded in our model as an element of the quality of work but as a feature of working conditions (see Figure 5). Let's see how control in jobs is connected with types of organisations.

Forms of work organisation are classified along decentralisation and the human factor orientation (Figure 13). The first dimension refers to the locus where problems are solved and decisions are taken. If problem solving becomes a responsibility of the worker then this will increase his or her demands. On the other hand, the opportunity of making decisions also increases the control options, restoring the balance of demands and control. In contrast, if the decentralisation orientation is low, so are demands.

A further remark on demands is necessary here, since we are not just talking about job demands in general, but about the fact that job demands are becoming mainly intellectual job demands. The nature of work has changed over the decades. Especially a shift from physical workloads towards more intellectual workloads took place. Machines, instruments and computers made work physically less severe, whereas more complex processes and a higher and faster need to process information, created more intellectual tasks. It is postulated that control tasks (responsibility, accountability) call on workers' intellectual capacity and, therefore, result in enhanced psychosocial and cognitive demands.

The second dimension refers to the role of the competences of workers. Is worker input seen as a risk that needs to be minimised (mostly through standardisation of work) or is it seen as an opportunity that needs to be maximised (to be innovative and creative)? Learning opportunities increase if worker input is maximised and, therefore, workers receive more control over the work process as well. The output of this process now highly depends on the human effort. If the human factor orientation is low, however, then jobs will have less control options and learning opportunities. Output is guaranteed by another mechanism than worker control, namely by rules, regulations and management control.

Figure 13 illustrates four types of jobs: passive jobs, low strain jobs, high strain jobs and active jobs (Karasek, 1979; Karasek, 1997). Passive jobs feature a lack of demands in terms of responsibility and a lack of control. This is not a stressful job. It also lacks challenge, and that is why it scores low on the human factor. It is simple work with nothing to learn. Low strain jobs give workers quite some freedom to use their competencies. Because this type of job has low intellectual demands, the control options are redundant. Much autonomy combined with no accountability makes work meaningless. In the two remaining types of jobs the intellectual workload is high: demands are high

in terms of accountability, responsibility and information processing. Control options are essential to prevent intellectual overload. However, high strain jobs are jobs that are missing such control options. Contrary to this, active jobs have sufficient decision latitude. Why are high strain jobs risky? High scores on decentralisation increases mental demands, but not control options. In other words, when responsibility increases and the allocation of authority (discretion) remain behind, it will cause an imbalance.

**Figure 13 Jobs in the decentralisation–human factor orientation model**

		Human factor orientation	
		LOW	HIGH
decentralisation orientation	LOW	<i>Passive jobs</i> Mental demands: – Control options: –	<i>Low strain jobs</i> Mental demands: – Control options: +/-
	HIGH	High strain jobs Mental demands: + Control options: 0/-	Active jobs Mental demands: + Control options: +

From Figure 13 we further postulate that high strain jobs will relatively more often appear in flexible efficient organisations, such as lean production-like companies. Active jobs are expected to be relatively more often present in humanised flexible organisations, like sociotechnology-oriented designs. It must be said that within the four organisational types – rigid efficiency, social rigidity, flexible efficiency and humanised flexibility – all these types of jobs will occur, but that each organisational type probably has its dominant type of job.<sup>40</sup>

**Relationships between working conditions and quality of work**

Relationships between working conditions and quality of work can vary from job security, health and well-being, competence development and the work-non working life.<sup>41</sup>

working conditions	quality of work: job security health and well-being competence development work-non working life
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<sup>40</sup> The physical demands can not easily be derived from the two dimensions. Severe physical labour is diminishing in all types of organisations, although it will never vanish completely. Physical work may remain substantial in rigid efficient organisations (Tayloristic). Because high physical demands can increase strain risks, jobs in rigid efficient organisations could be high strain jobs, if, for example, the pace of work is very fast. Is pace of work a physical or an intellectual demand? For an assembly line worker it is probably physical, but for a call centre worker it is intellectual.

<sup>41</sup> Strictly speaking we could also subdivide the working conditions in their three elements the demand-control balance, physical aspects and employment relationship, but that would be too complex.

In fact, we have not encountered studies that systematically revealed the relationships between working conditions and job security, competence development and the work/non working life balance.

This section concentrates on the relation of working conditions and health and well-being and job demands and job control as one of the elements of working conditions.

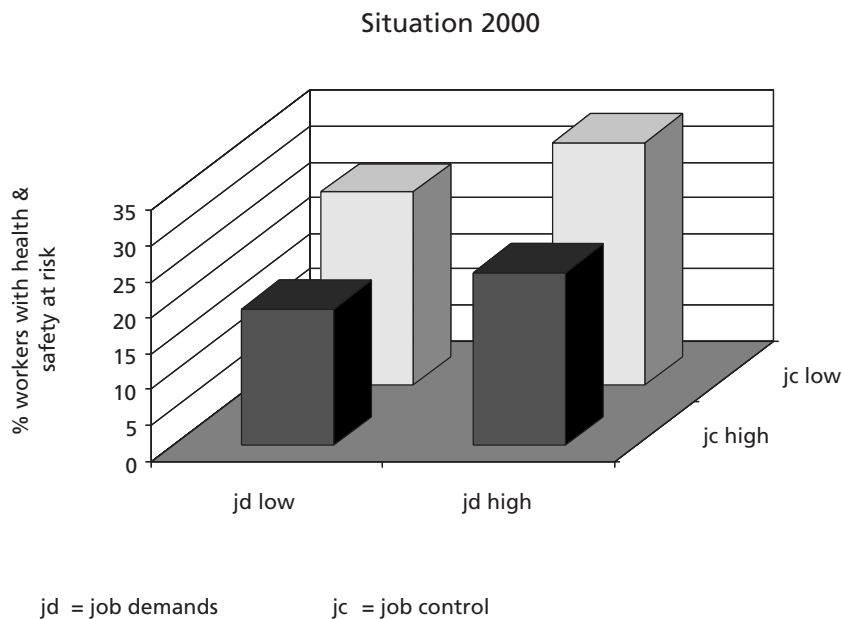
Before we turn to the question of how the demand-control balance (as an element of working conditions) affects health and well-being, we again first present some general observations from the literature about this relation.

Relationships between working conditions and health and well-being:

- Increased flexibility meant that risks and costs have been transferred from employers to individuals and to the state (Tregaskis et al, 1998).
- Part-time work (as an example of employment relationships) is sometimes related to job creation and sometimes linked to the reduction in employment (Tregaskis et al, 1998).
- High strain jobs (high demands, low control) lead to a high number of health complaints from workers like stress (28%) and burn out (20%) (Dhondt, 1998).
- The literature review by Landsbergis et al. (1999) proves evidence that job strain – work combining high demands and low decision latitude – is a risk factor for hypertension and cardiovascular disease (see also OECD, 1996: 140).
- Jackson and Mullary (2000) find that autonomy is a predictor of well-being, albeit a weak one. The more control a group has over work methods, the lower is the reported employee strain and the higher the job satisfaction. They found that work demands, however, are a much stronger predictor of well-being. Their research showed that problem-solving demands and production pressure have negative effects on well being (see also Letourneux, 1998b; Landsbergis et al, 1999; Dhondt, Kraan, Van Sloten, 2001).
- There is a direct relationship between poor health outcomes and adverse working conditions, arising particularly from a high level of work intensity and repetitive work (Merlié and Paoli, 2000).
- New contractual relationships like precarious work (as an example of the employment relationship) are linked with intensification of work and time pressure, a feeling of job insecurity, and are a negative indicator for OSH (Goudswaard, 2001; Quinlan et al, 2000).
- Self-employed people have relatively higher risks of physical health problems than employees (Letourneux, 1998b, Goudswaard, 2001).
- There is a negative association between temporary workers and OSH-risks and higher risks for accidents (Goudswaard, 2001).
- Temporary workers continue to report more exposure to risk factors than permanent employees (Merlié and Paoli, 2000).

We think there is enough evidence to draw the conclusion that imbalances in the job demand–control have negative effects on health and well-being of employees.

**Figure 14** Type of jobs and health and safety risks



Source: Dhondt, Kraan, Van Sloten, 2001: 30.

*Working conditions and health and safety*

We discussed above the job demand-control balance of four types of jobs. This balance is seen as an element of the working conditions. We now turn to the question of what kind of health and safety risks these jobs might contain. To answer this question, some results of the analysis on the Third European Survey on Working Conditions are presented in Figure 14. The scheme shows that low strain jobs contain the lowest percentage of reported health and safety risks and that high strain jobs have the highest percentage of reported risks. High strain jobs are also positively related to self-reported stress, musculoskeletal problems and low job satisfaction (Dhondt, Kraan, Van Sloten, 2001).

Workers with active working conditions have the lowest risks of psychological strain and workers with high strain working conditions have the highest psychological strain. This accords with the proposition that active jobs, which are challenging and imply controllable workloads, have 'healthy' levels of stress which enhances job satisfaction.

Several other studies support these findings. Daubas-Letourneux and Thébaud-Mony (2001),<sup>42</sup> for example, have used another analytical approach on the same data and grouped workers in Europe into four groups according to their scores on questions on the working conditions. 'Flexible workers' are characterised by their flexible working hours, and are said to report the highest level of psychological complaints (men as well as women). 'Automated workers' are workers who have the opportunity to discuss the organisation of their work and working conditions, but have little autonomy. Their work pace depends mainly on the machine pace or the quantitative production

<sup>42</sup> See also Greenan and Hamon-Cholat, 2000.

norms. This group has the second highest score on psychological complaints. The scores of the 'autonomous worker', the group of workers with high scores on autonomy, and 'servitude workers', the group of workers with low scores on autonomy, are almost the same (except for stress, where the autonomous male workers score higher). The autonomous workers are the most satisfied with their working conditions. The servitude or 'chained workers' are the least satisfied with their working conditions (men as well as women as above).

## **Relationships between work organisation and quality of work**

Work organisation can also have a direct connection with the quality of work. This section describes a few of those examples found in the literature. We look at relations between, on the one hand, work organisation and, on the other, job security, health and well-being, competence development, added with links to job satisfaction and employability. No relations were found with the balance of work and non working life.

work organisation	quality of work: job security health and well-being competence development work-non working life
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A further remark can be made on the distinction between new work organisations and organisational change. New work organisations refer to changes in content, whereas organisational changes, in most but not all cases, refer to the process of change. A problem arises when reports on ongoing change towards 'good organisations' prove to be connected with, for example, stress and dissatisfaction. It should be realised that *any* change is likely to have negative affects, because change interferes with established structures and securities. Furthermore, the reviewed studies mostly report about observations that are made at one specific moment: before the change, during the change, or after the change. It should be mentioned that conclusions which are drawn by these authors may be valid for the moment of the observation itself, but this need not to be so for a longer period. For example, the introduction of change may results in problems during the process and shortly after the implementation took place. This may, however, change after more time has passed (adaption period) when a new equilibrium has restored the balance in organisations.

Having said all that, some relationships between work organisation and quality of work which were observed in the literature as follows.

### *Evidence of relations with work organisation*

#### *Job security*

Flexible organisations will lead to segmentation and, as a consequence, workers with unfavourable labour contracts face unemployment risks (Oechsler, 2000).

The presence of many precarious workers (subcontractors, part-timers, temporary workers) in an organisation is conducive to 'work disorganisation', i.e. workers who are performing unfamiliar work or tasks which are not part of their normal duties and the potential for errors, which create situations of uncertainty and new (stress and health) risks (Quinlan et al, 2000).<sup>43</sup>

<sup>43</sup> This example and the former one may also be regarded as illustrations of working conditions (i.e. the employment relationship). It is not always easy to make a clear distinction between the flexibilisation of work (employment relationship) and the flexibilisation of the organisation (flexible production techniques).

Changes in organisations lead to feelings of job insecurity (Goudswaard, 2001).

New work organisations may have a negative impact on gender equality, i.e., aspects of job security for women. Although such negative consequences are still unclear, attention should, amongst others, be given to gender issues related to team work, delayering, skills, working time arrangements, teleworking, and HRM policies (Webster, 2001).

#### *Health and well-being*

'Whilst the research tends to suggest that reorganisation can act as a stressor it has to be demonstrated that reorganisation always acts as a major stressor', says Wright (1996:42); that reorganisation or organisational change results in an increase of the frequency of all occupational injuries and illnesses is also confirmed by Askenazy (2000).

- Companies that combine organisational change (like team work, JIT, TQM, etc.) and computerisation (new ICTs) correlate with high productivity on the one hand, but also appear to have high numbers of occupational injuries and illnesses (Askenazy, 2000).
- The expansion of lean production with job strain could produce dramatic increases in the incidence of hypertension and cardiovascular diseases (Landsbergis et al, 1999).
- Research provides substantial and consistent evidence of a causal relation between workplace stressors and cardiovascular diseases and cardiovascular health risks (CVD). There is an impact of workplace psychosocial, chemical, and physical conditions on CVD, of which research on sources of psychosocial stress at work is the most consistent, especially work with high psychological demands coupled with low decision latitude, i.e., job strain (Belkic et al, 2000: 307). There is evidence for similar conclusions concerning Japanese workplaces (Kawakami and Haratani, 1999).
- Organisational change has a strong impact on work-related stress (Cox et al, 2000, Goudswaard, 2001, Merllié and Paoli, 2000).
- Organisational restructuring and downsizing have a negative connection with OSH (Wright, 1996; Quinlan et al, 2000; Goudswaard, 2001).

We would like to add from our own experience with TNO Work and Employment research and consultancy projects that the design of organisations, jobs and tasks is related to the presence or absence of stress risks, because any design has consequences for decision latitude and production standards on job level (see also Eijnatten, 1993; Sitter, 1995; Sitter et al, 1997; Cox et al, 2000).

#### *Competence development*

- Workplaces that made the greatest use of new work practices succeeded in building employee capabilities and motivation (Huselid, 1995).
- Changes and new forms of work organisations require new and more skills (OECD, 1996, 1998; Goudswaard, 2001; Savage, 2001).
- Reorganisation may, however, also lead to the loss of personnel with key competencies, resulting in stressful situations for remaining personnel (Wright, 1996).

There is a substantial body of literature on competence development, from which this study could not fully benefit given its limited scope. However, based on Dutch research we are able to present



a few important observations. Two general conclusions drawn in a study on organisational conditions for individual competence development in research and development departments of industrial enterprises (Brugman, 1999:190-1, 214-15, 224-6, 252-3) are that actual competence development and internal job mobility are positively associated with explicit and proactive human resource management, and that a high quality of work (i.e. autonomy, task variety and feedback) is not a sufficient condition for competence development, should human resource management be absent.

This indicates that the organisational concept itself is not a determining factor alone for competence management. Organisations must have an explicit competence development policy. Since internal mobility is established as an important condition for competence development in the study mentioned on R&D staff, one could assume that facilitating learning on the job (e.g. by job rotation and task rotation) is crucial. These findings also imply that team work does not automatically result in enhancing competences without a policy that perceives competence development as an important function of the organisation. Support for these conclusions are found in another Dutch study on human resource management in scientific and R&D organisations (Fruytier and Timmerhuis, 1995: 49). The authors state that creativity should be managed by human resources mobilisation, namely by shaping challenging working environments (organisational developmental HR-policies) and using material and non-material incentives for the use and development of human competences (people developmental HR-policies). The importance of competence development as a distinctive organisational goal is also stressed by Dutch researchers Dankbaar (2000: 76) and Onstenk (2000). Onstenk (2000, 64-5) shows us that competence development can be incorporated in particular job situations, as it enhances the likelihood of learning processes to occur. This likelihood depends on factors such as the employee's ability and motivation to learn, and the job's opportunities for learning and training (job rotation, task variety, training-on-the-job, etc).

Competence development, therefore, is a contingent factor independent of organisational concepts. Yet, the degree to which organisations do realise their dependence on the human factor differs among organisational concepts. Organisations aiming at standardising their processes will not seriously invest in competence development. Since competences are a feature of individuals and not of organisations it is obvious that effective personnel management is a central key to competence management (see also Hamel and Prahalad, 1994: 245-259).

#### *Job satisfaction and employability*

The introduction of new forms of work organisation in many companies has improved job satisfaction. This arises from increased responsibility for a wider range of tasks, greater personal autonomy, more involvement in decision-making, higher levels of consultation, and greater control over daily activities. In many cases this has led to reduced staff turnover, and falling levels of absenteeism. It has also improved employability because of investments in training which raise vocational skill levels, widen functional skills and build new personal skills (Business Decisions Limited, 1998: 19).

#### *Concluding remarks on work organisation, jobs, and health and safety risks*

Although systematic and profound research on the connection of work organisation and health is scarce, mainly due to the variation of definitions used, we have tried to postulate the effects of forms of work organisations on health by combining the results presented in this Chapter:

- in rigid efficient organisations (like Taylorism) passive jobs with low job satisfaction are the norm;
- low strain jobs with a low risk on health problems are mainly found in social rigid organisations (like human relations) ;
- flexible efficient organisations (like lean production) are likely to be characterised by high strain jobs with a high risk of health problems;
- humanised flexibility (like sociotechnology) offers the most promising opportunities for mainly active jobs with high job satisfaction.

These findings should be seen as an outcome of our analysis that is based on our theoretical viewpoints and the comparison of these viewpoints with the empirical results from the literature review.

What evidence is there in the scarce literature for these postulated relations? The focus in the reviewed literature is on the effect of *new* forms of work organisations and organisational changes. Evidence is difficult to filter from the sources, because most studies compare 'the new situation' (new organisation models) with 'the old situation' (Tayloristic and Fordist models) (see also OECD, 1996: 139), and not, for example, the mutual differences or similarities of the various new organisational models. Nonetheless, some findings can be related to the organisational types of flexible efficiency and humanised flexibility.

Effects of changes that are connected with flexible efficiency (decentralisation and a low human factor orientation) are the following:

- Surveys into the relationship between lean production in auto manufacturing and health outcomes show that there is a positive association with work-related musculoskeletal disorders and fatigue, whereas stress and tension are positive (or no association is found) (Landsbergis et al, 1999; Belkic et al, 2000; Lewchuk et al, 2001).
- Case studies into the same relationships also show positive associations (Landsbergis et al, 1999).
- Results of surveys into the relationship between (elements of) lean production and health in other sectors than auto manufacturing show mixed results. Case studies, however, all show positive relationships between lean production and fatigue, stress, and tension (Landsbergis et al, 1999).
- Effects of changes that are connected with humanised flexibility (decentralisation and a high human factor orientation) are the following:
  - The Scandinavian model of work team has increased motivation and reduced absenteeism and sickness leave (Sisson et al, 1997).
  - Evidence is found that job enrichment increases job satisfaction, which in turn leads to a reduction of absenteeism and labour turnover (Fröhlich and Pekruhl, 1996).
  - Team based organisations score significantly higher than other forms of work organisations on the decrease in sickness and absenteeism (caused by other factors) (Benders et al, 1999).

- Voluntary turnover (that can be seen as an indicator of employee dissatisfaction), is significantly lower in organisations with a commitment system than in organisations with control systems (Arthur, 1994; see also Table 5).

It is possible to establish relationships between work organisation, working conditions and quality of work, although the literature reviewed does not treat these relationships systematically for the most part. It appears that our sample organisations that develop towards humanised flexibility, have favourable working conditions towards job control and learning opportunities and have a quality of work without many OSH risks are conducive to high job satisfaction. Of course we can not draw any such firm conclusions on the basis of the studied material, which merely offers an indication of such developments. It stresses the need for further research into relationships between work organisation, working conditions and quality of work.

## Introduction

'There are more questions than answers in this field [of new forms of work organization]. At this point, it would be out of place to draw any firm conclusions: the theoretical approaches are still too heterogeneous; changes in work organization and technology are too recent; and too little empirical, international comparative research has been undertaken so far. But to return to the question posed in the heading of this final section, Is there a new universal model of work organization? The answer can be a firm no', according to a study on new forms of work organisation in Europe undertaken a decade ago (Grootings, 1989: 242). Since then we have been observing the rise of different concepts of organisations, but still much remained the same, with Taylorism still an important management philosophy.

The discussion on the emergence of new forms of work organisations then as now focused on enlarging job control for workers and more flexibility given the need for continuous restructuring. Several factors did 'force tasks downward' (i.e. decentralisation) influencing the emergence of a new type of enterprise organisation with roughly the following characteristics (Gustavsen and Héthy, 1989: 15):

- the most important functions are located on the production floor and integrated with production;
- at the same time the control and supervisory tasks of the managerial level are drastically reduced;
- growth in the levels between the top floor and the shop floor is halted and to some extent even reversed;
- for the people remaining on the intervening levels of the hierarchy tasks are transformed from control to support;
- top management grows and becomes more collective;
- local worker representation is strengthened;
- important characteristics of enterprise policy are formed in direct dialogue between top management and worker representatives.

From these observations a decade ago it can be concluded that some themes have not lost their actual relevance, such as decentralisation of decision latitude, management tasks partly shifting towards coach roles, democratisation of the shop floor. By that time new forms of work organisation were seen as alternatives to Tayloristic patterns (see also Kern and Schumann, 1984). Already then, it was stressed that such alternative work organisations had not taken a mass character, because these new forms had certain disadvantages for their key social actors (Grootings, 1989: 219):

- for the workers, a richer job content often means increased intensity and stress not necessarily compensated for by wage increases;
- for some management groups at lower and intermediate levels, increased workers' autonomy has meant loss of status, power, and position. For higher management this has also implied the loss of a reliable chain of control in the structure.<sup>44</sup>

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<sup>44</sup> We can add that for remaining managers on lower and intermediate levels intensity and stress will have increased as well.

Grootings stresses that the (new) organisation of work is more than the simple reflection of management strategies to control workers. It is also the organisation of the work process in order to produce efficiently and to have the right people and the right materials at the right moment at the right place. Since new forms of work organisation not only refer to a change in control, a change in the division of work, or a combination of both, it is important to consider work organisation as something which includes technical-organisational dimensions and socio-political dimensions. This implies that the relationship of the work organisation with its societal environment should be the subject of serious study as well (Grootings, 1989: 224-228).

Our conclusions show that answers to many of the questions posed a decade ago are still essential to enhance our knowledge. What did change, however, is the context due to actual changes in many companies and society as a whole. But there is still no new universal model of work organisation. To be honest, we do not believe universal models will ever come into effect.

The aim of this literature study was to gather the most relevant findings on the link between forms of work organisation, working conditions and the quality of work. Another objective was to provide further information in this field which can advance the debate on the results of the Third Survey on Working Conditions (European Foundation for the Improvement of Living and Working Conditions). Finally, paths to follow by the Foundation in future research related to working conditions had to be identified. The last two goals implied the development of an analytical framework about the relations of work organisation, working conditions and the quality of work. Because it proved necessary to present definitions of these topics before we could describe the literature findings, we started with this analytical framework in Chapter 2. We subsequently designed a research model to review the literature and developed the decentralisation – human factor orientation model as a theoretical construct to explain empirical findings. A next step was to describe the links between work organisations, working conditions and quality of work (Chapter 4), but only after we had presented descriptive information on each separate theme (Chapter 3). As a consequence of limited sources that study these links, we paid more attention than intended to the description of the present situation within these three themes.

In this final chapter we formulate our main conclusions first. In a second and final step we outline a research methodology for the future, which brings together the quest for further information to advance the debate on the (future) results of the Foundation's Survey on Working Conditions and possible paths to follow for future research on new organisations, working conditions and quality of work.

## **Conclusions**

In drawing conclusions we focus on:

- new forms of work organisation;
- relationships between work organisation, working conditions and quality of work;
- theory-based research.

### *New forms of work organisation*

The literature we studied reflects a large variety of forms of organisational change. These changes do not all refer to new work organisations as a whole. We defined work organisation as an entity

consisting of human elements and non-human elements (means of production) involved in the purposive production of goods and services. Many organisational changes that are mentioned in the source sample are related to aspects of organisations and not to organisations as a whole. These aspects concern changes in working methods, the division of labour, the (re)design of departments and jobs, organisational behaviour, management techniques and business practices, corporate policies on various topics (e.g. strategy, human resources, education, terms of employment), and technology and information systems. Remarkably, not many sources discuss the introduction or restructuring of the 'structure of production' and which organisational concepts are being used. Most studies deal with organisational change that is related to renewal of the 'management structure' and the division of labour, like delayering, team work, changing employment relations and so on. No studies were found that investigated the use and replacement of organisational concepts in their 'pure' form. Many researchers, however, do establish the fact whether their object of study, i.e. companies under research, can be characterised as Tayloristic or that it has adopted a new production concept. Nevertheless, thorough and systematic analyses of various variables that should make out what kind of concept is in use, are not being undertaken.

Based on a number of key characteristics, the type of organisational concept used is simply concluded by most authors. Criteria that are being used relate to the division of control functions and executive functions. These are, for example, the power balance between management and workers and their unions, the job control of employees, the way the production process is structured, functional interdependencies in the production process, and the self-containment of the production of products and services (whole products). The result of this is obvious. Companies with different characteristics may be similarly labelled, and different labels may be used for companies that share several characteristics. In short, there is a major risk that researchers are interpreting their findings on incomplete information. This is exactly the reason why it has become so difficult to make clear distinctions between organisational concepts (like Taylorism, Fordism, human relations, business process redesign, lean production and sociotechnology) and business practices that are used within such concepts, like total quality management and just-in-time systems. It will come as no surprise that hybrid forms (intermediate forms), like shop floor management, Toyotism, mini-companies, and so on, further complicate this distinction-making.

The problem of definitions affects our work at least in two ways. First, it is difficult to evaluate organisational change in terms of changes in the use of concepts. Second, it is difficult to evaluate the precise effects that different kind of work organisations have on working conditions and on the quality of work.

Having said all this, what can we conclude from the literature on organisational change? The decentralisation-human factor orientation model distinguishes between changes towards decentralising decision latitude or centralising control, and between changes towards enhancing the use of human resources as key competencies or laying a stronger accent on cost efficiency gains (Chapter 2). Four types of organisations can be derived from this model: rigid efficient organisations tend to central control and cost efficiency; social rigid organisations tend to central control and an enhanced use of human resources; flexible efficient organisations tend to decentralised control and cost efficiency; humanised flexible organisations tend to decentralised control and a greater use of human resources as a critical success factor. The European Commission, an ardent advocate of the 'flexible firm', encourages humanised flexibility. The wish

for high trust, high skill, high performance and high participation work organisations is, however, not being fulfilled so far, since the majority of forms of organisational change seemingly tends in the direction of flexible efficiency (Chapter 3). Changes towards humanised flexibility occur as well, but to a lesser extent, whereas organisational change that resembles rigid efficiency or social rigidity has rarely been observed in the literature sample.<sup>45</sup>

Interestingly, a number of organisational changes that were introduced in several companies could result in more or less autonomy on lower levels or could imply more or less use of human resources, depending on the kind of adoption in firms. In other words, there were options for choices to be made. Why companies more often chose flexible efficient solutions instead of humanised flexible solutions, remains largely unanswered. This finding stresses the relevance to investigate the 'drivers for managerial choice' (Chapter 2) and to establish how they affect new work organisations. It is presumed that societal and cultural factors will influence this process.

Another aspect to take into account with reference to new work organisations is the position and preferences of workers. The changing world of work and non-work affects relations between workers and organisations, and, if organisations will go on to disconnect into (virtual) networks, between workers and (disconnected) 'units of production and consumption'. The key link that connects persons to these units is the employment relationship, the lowest level of 'organisation'. The employment relationship (Chapter 3) contains agreements on the content of work (operational relation) and the terms of employment (contractual relation). The employment relationship, seen as the lowest level of 'organisation', has its own micro characteristics of decentralised autonomy and use of human resources, possibly disconnected from formal organisations. Therefore, how employees evaluate their working and non-working life is an important object of study in relation to new work organisations in the near future.

#### *Relationships between work organisation, working conditions and quality of work*

We have investigated relationships between work organisation and working conditions, between working conditions and the quality of work, and between work organisation and the quality of work. A central conclusion to be drawn is that profound, systematic and comprehensive research on these relations is not abundant in our sample of studies. We have subdivided working conditions and quality of work into more elements and some of these subdivided elements are being mutually related in research. As features of working conditions, the 'demand-control balance', 'physical aspects' and the 'employment relationship' were distinguished; and within the quality of work we discerned 'job security', 'health and well-being', 'competence development' and the balance 'work - non working life' (Chapter 2 and 4). Tentative conclusions with respect to these relationships are the following:

#### *Work organisation and working conditions*

##### ■ Work organisation and the demand – control balance

There is much literature on the relation between organisations and job demands – job control in the automobile industry, that focuses on lean production and, to a much lesser extent, Scandinavian organisation models. In general, much attention is paid to team work as an example of organisational change. Many researchers suggest a rise of job demands, amongst

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<sup>45</sup> Which is a bias effect of our sample, because we focused on organisational renewal.

others, related to an intensified work pace, introduction of self-management tasks, more social-communicative tasks, rationalisation of the process by the use of ICT, higher accountability. Job control was not always enhanced, especially not in lean production systems, although company-based variations in job control emerged as a consequence of differences in economic positions and bargaining power of employees and their representatives. Decision latitude remains relatively low, due to a lack of discretion (authoritative power) to balance the demands. In some cases the enhancement of decision latitude was temporary and no longer necessary after processes became standardised. The consequence of the imbalance of demands and control was the emergence of jobs with high strain risks. In the Scandinavian models of team work employees were, generally speaking, granted sufficient decision latitude. As a conclusion, high strain jobs are expected to dominate in flexible efficient organisations; active jobs (high demands but also much control) will be characteristic of humanised flexible organisations.

Aside from organisational models and concepts we are postulating that job demands have increased in almost all workplaces in Western economies, due to exerted pressure to raise (labour) productivity, the quest for higher qualifications in different fields (vocational and social), the further introduction of intellectually-demanding ICT-based work systems, the shortening of working weeks (especially in Europe), the sometimes conflicting interests and workloads between working life and non-working life (especially for women), and reorganisation or renewal which has become a process of 'continuous change'. Workers face more risks for both work-related stress and life-stress outside the workplace.

- Work organisation and physical workloads

Little information was studied by us in this regard. A general observation is that severe physical work is decreasing in most sectors. Physical disorders (i.e. musculoskeletal disorders and repetitive strain injuries) are mainly caused by factors such as high speed, psychosocial work stress and ergonomic stressors. We cannot draw firm conclusions on the basis of our review about what type of organisational concepts cause physical workloads. It is assumed, however, that all concepts can be accompanied by psychosocial stress which indirectly enhances physical disorders, like lean productive work (e.g. workplaces with a fast work pace), Tayloristic work (e.g. intellectually-demanding call centres), or workplaces with complex work with many interactions with people, departments, clients, and so on.

- Work organisation and the employment relationship

Empirical information, apart from the type of labour contracts, on this relation is scarce in our literature sample. We do assume that flexible work will further increase in the direction of numerical, external flexibility and functional, internal flexibility. This means that substantial numbers of workers will have precarious contracts or permanent contracts, depending on recruitment and binding strategies of organisations, which in turn are determined by business cycles and the scarcity of labour. A highly tentative and speculative assumption is about the emergence of employment relationships that are characterised as forms of functional but external flexibility. Ekstedt et al. (1999) expect a growth of project-based organisations and Castells (1996) predicts a network society with, in various ways, disconnected relations. Multi-deployable professionals (functionally flexible) who do not have an arrangement with the organisation in which detailed conditions are agreed upon (numerically flexible) may form a substantial share of the future working force. For the rest, important functions in this respect are indicated for human resources policies and knowledge management by the sources we studied. These policies help to shape the operational (work content, career opportunities, etc.) and



contractual aspects (like the financial terms of employment) of the employment relationship. If we should estimate what types of organisations would accommodate what forms of contracts, it is expected that in flexible efficient organisations relatively many employees with atypical contracts and many permanent workers without much empowerment would occur. In organisations that we typified as humanised flexibility we would expect the opposite: a relatively large share of empowered workers in permanent positions, a smaller share of atypical 'flexworkers'. We would expect that both type of organisations make use of the service of professionals via temporary contracts. In more 'traditional' types of organisations with rigid efficiency and social rigidity there will be a majority share of 'bureaucratic' and 'clan' workers (both permanent workers). Scarcity on the labour market has a major impact on these organisations. Where scarcity is low then flexible, atypical contracts will increase (i.e. more 'spot market' and 'professional' relations). We finally mention that the flexibility applied in organisations also depends on the institutional context, like labour market policy and social legislation.

*Working conditions and quality of work*

- Working conditions and health and well-being  
For this relation we focused on the demand-control balance – as an element of working conditions – and health and safety risks within jobs. Employees with active jobs (high demands and high control) have the lowest risks of psychological strain, contrary to employees in high strain jobs (high demands and low control), who more often face self-reported stress, musculoskeletal problems and lower job satisfaction. As stated earlier, active jobs are expected to dominate in humanised flexibility organisations and high strain jobs in flexible efficiency organisations.
- Working conditions and job security, competence development and the work/non working life balance  
We did not successfully gather knowledge that gives a systematic insight in these relations. No conclusive inferences are therefore made here.

*Work organisation and quality of work*

- Work organisation and job security  
A general observation is that organisational changes and reorganisation cause uncertainties among employees and feelings of job insecurity. This argument is usually applied to precarious workers.
- Work organisations and health and well being  
Another general observation is that organisational changes and reorganisation also negatively affect occupational health and safety outcomes: increasing occupational injuries and illnesses, increasing incidences of hypertension and cardiovascular diseases, high complaints of stress and burn out. As a consequence physical disorders are subsequently caused in several cases.
- Work organisation and competence development  
Generally speaking, new work organisations require more and new skills. Besides vocational skills, the new skills are of a social-communicative kind and directed at motivation, new attitudes and behaviour.

Given that our literature review had a limited scope, because we could not include all the relevant material, a cautious conclusion made at this stage is twofold. First, changes in organisations are

directed towards decentralisation and delayering and not towards centralisation. Of the two types that we have associated with decentralisation, changes towards flexible efficient organisations are dominating changes towards humanised flexible organisations. Second, if we look at the prospective quality of jobs in these type of organisations, employees in humanised flexible companies will obtain a favourable position compared to employees in flexible efficient firms. Their chances for active jobs are higher. Active jobs feature high demands combined with high control, many learning opportunities that will enhance the employability of workers, controllable stress risks, and high job satisfaction.

*Theory-based research*

What we have learnt from the reviewed literature is that theory-based research is not broadly represented. There is much descriptive research meant to provide precise and reliable information on phenomena such as the prevalence and incidence of OSH risks and effects. Descriptive research is very helpful in exploring relations between phenomena, such as relations between lean production and OSH risks in the auto industry. Theoretical-explanatory research, however, is rare. Its ‘deductive’ variant, oriented towards the development of theory by the testing of hypotheses, nor its ‘inductive’ variant, aimed at acquiring a better theoretical understanding of empirical phenomena by constructing hypotheses, are widespread phenomena. The lack of theory-based explanatory research on organisational change implies that theory development in this field proceeds slowly (see also Oeij et al, 1998: 113-14, 128). The scarcity of theory-based explanations of empirical finding with respect to new organisations, their working conditions and quality of work, blindfolds policymakers as can be witnessed by the unsuccessful dissemination of ‘the flexible firm’. The EC Green Paper on partnership for new work organisations is a socially desirable manifesto for top class performing organisations which excel in the creation of a high quality of work. But the EC Green Paper is lacking in exact recommendations to responsible stakeholders on company level. Much more can be learnt from different national programmes if practices are being profoundly studied and if theoretical lessons can be transferred into praxis (see also Business Decision Limited, 2000: 31-2). Theory-based empirical research should be stimulated to eventually help policy and practice.

To what extent can we integrate the empirical results in this study with the decentralisation – human factor orientation model (Chapter 2)? We have tried to estimate the ‘values’ of the ‘variables’ work organisation, working conditions and quality of work for each of the four organisational types – ‘rigid efficiency’, ‘social rigidity’, ‘flexible efficiency’, and ‘humanised flexibility’. It is obvious that our estimations ought to be tested empirically, in order to arrive at firm conclusions.

The main characteristics of the four organisational types, that have a resemblance with the ‘extreme’ organisational concepts – i.e. Taylorism, human relations, lean production and sociotechnology - are described in Table 9, in which the decentralisation – human factor orientation model is linked with the key constructs of our study, work organisation, working conditions and quality of work. We stress that Table 9 unavoidably depicts a simplification of the original organisational concepts.

A preliminary conclusion is that the decentralisation – human factor orientation model is a valid model to distinguish organisational concepts.

**Table 9 Main characteristics of central organisational concepts**

	<b>Rigid efficiency (e.g. Taylorism)</b>	<b>Social rigidity (e.g. human relations)</b>	<b>Flexible efficiency (e.g. lean production)</b>	<b>Humanised flexibility (e.g. modern sociotechnology)</b>
<b>dimension 1:</b> decentralisation	low	low	high	high
<b>dimension 2 :</b> human factor orientation	low	high	low	high
<b>work organisation :</b> production structure management structure division of labour	line structure hierarchical control maximised division	functional structure hierarchical control management control	flexible structure decentralised control non-autonomous groupwork	flow structure decentralised control autonomous groupwork
<b>working conditions:</b> demand-control balance  exposure physical aspects employment relationship	passive/meaningless jobs (negative)  risk-bearing merit rating/flexible (bureaucratic)	passive jobs (neutral)  normal piece rating/fixed (clan)	strain jobs (negative)  normal merit rating/group level (spotmarket)	active jobs (positive)  normal task related/group level (professional)
<b>quality of work:</b> job security health & well-being competence development working/non-working life	low low low poor	high high low poor	low low moderate poor	moderate high high neutral

## Future research

The European Foundation for the Improvement of Living and Working Conditions was established to assist the formulation of future policy on social and work-related matters, with a special interest in working conditions, living conditions and industrial relations. Working conditions were at the heart of this study, but results can be easily linked with discussions in the fields of living conditions and industrial relations.

The European Working Conditions Surveys, carried out by the Foundation, aim to provide an overview of the state of working conditions in Europe, identifying major issues and changes affecting the workplace. Eventually the results should contribute to a better monitoring of the quality of work and employment in the European Union. New work organisations are emerging which calls for insight in how these organisations are impacting on working conditions. How work organisations affect working conditions and how working conditions affect the quality of work was described in Chapter 2.

We do not intend to produce an elaborated project methodology on this place, but we shall discuss some relevant issues and outline possible future research by the European Foundation.

It is our opinion that future research on work organisations, working conditions, quality of working life and drivers for managerial choice must be theory-based, aimed at the explanation and not merely the description of relevant phenomena. That this is ambitious and difficult goes without saying but there is an urgent need for reliable policy making and business consultancy in this field.

On the other hand, we are aware that the pressure of policy makers for the quick deliverance of research findings does not allow to set up sweeping research designs very easily.

We therefore present two kind of recommendations for future research. First, an approach which easily fits within the present structure of the European Survey on Working Conditions. Second, a rather ambitious plan for a research project programme that will eventually result in better explaining the mechanisms of organisational change.

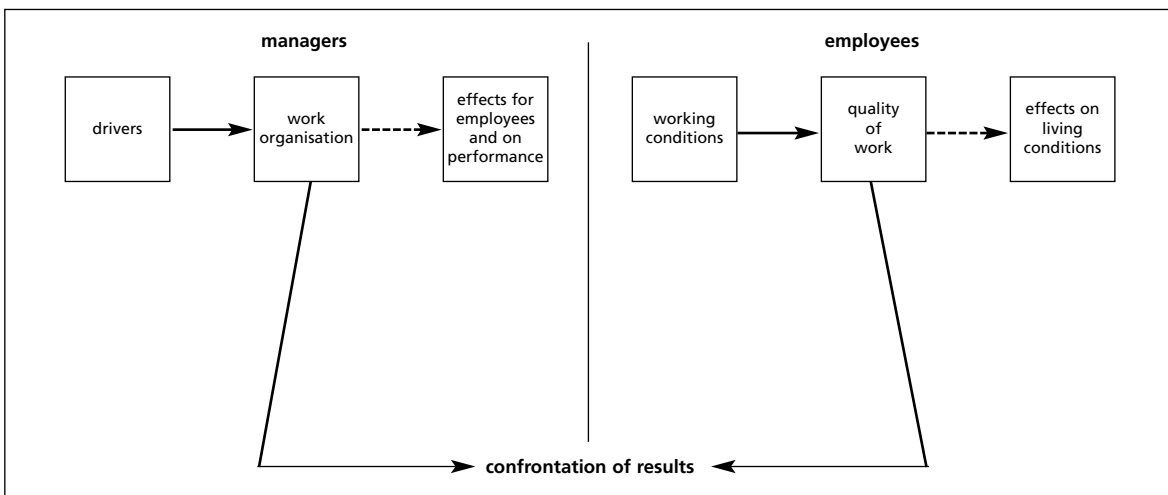
*A feasible programme*

Linking up with the existing framework of the Survey on Working Conditions is the easiest way to a feasible research programme. A first step would be to assess the relevant topics for the Foundation presented in the ‘full model’ of this research: elements of work organisation, of working conditions, of the quality of work, and of drivers for managerial choice (see Table 5). The second step is the construction of working definitions into variables that measure the relevant phenomena. One of the things to do is to construct operational definitions of the two dimensions of the decentralisation - human factor orientation model. We further advise to link up with useful existing theoretical concepts, such as the demand – control model and several measures of occupational safety and health risks and their effects. The final step would be the survey itself. Given the number of topics, it may be necessary to select from the various topics in order to design a manageable questionnaire that will elicit responses.

The advantages of this approach are clear. It can easily and quickly be slotted in into the existing research infrastructure of the Foundation. Therefore, it is relatively inexpensive and guarantees quick results.

The main disadvantage of this approach is that several crucial matters can not be examined, simply because the present Survey on Working Conditions is confined to employees. Employees will only have a limited view on topics like the structure of the organisation and drivers for managerial choice. Another approach, therefore, is preferable, one that also addresses a number of these issues to (top) managers or organisations. And one that ensures the Foundation of more profound examinations and deeper insights.

**Figure 15 Separate analysis of the manager’s and the employee’s situation**



*Towards an ambitious programme*

In this study we gathered evidence for the proposition that drivers for managerial choice have a substantial effect on the structuring of organisations and labour relations. Drivers are beneficial or hampering conditions which affect managerial action. These drivers are firmly connected with the control capacity of managers. In other words, managers have a freedom of choice which is restricted by the job demand-control balance of their own function. We have made a distinction between environmental drivers and drivers inside the organisation. The drivers are making up a large part of the demand-control balance and this explains how much autonomy managers have in making choices about these drivers. The ultimate question that follows out of this, is how much influence are managers exerting on change in organisations, with reference to the structure of the work organisation, and, consequently, on working conditions? Once this is determined, a look should be taken at the employee's evaluation of the quality of work, that is based on the judgement of his or her working conditions. When this has been done also, the findings among managers and the finding among employees can be contrasted. Figure 15 exhibits how managers influence change in organisations and how employees judge their work situation in a simplified manner.

Figure 15 depicts two separate analyses. One is focused on how managers influence the form of new work organisations. The interrupted arrow between work organisation and its effects is outside this focus. Another analysis focuses on how employees evaluate their quality of work given their working conditions. The interrupted arrow about the consequences that may be involved for their private situation is not in focus. Why this distinction? Simply because managers can best judge their influence on organisational change – at least probably better than employees – and because workers can best evaluate their quality of work. The results for managers and employees on aggregated levels should be compared with reference to a number of similar variables: company size, sector, type of organisation, etc. Differences and similarities in observations between subjects and with regard to several topics are the focus for analyses.

With respect to the boxes in Figure 5 – drivers for managerial choice, work organisation, working conditions, quality of work – the construction of several 'working theories' as sets of hypotheses is an important condition for theoretical-explanatory research. This can be relatively easily arrived at concerning work organisation, working conditions and quality of work, because so many theories are available already. It is quite a different matter with regard to the drivers of managerial choice. There are many sub-theories but not so many coherent all-encompassing theories. Much preparatory work needs to be done here.

Let us finally look at the outline of a practical research approach for a project like this.

What should be studied?

A question to start with is: which are the causes of organisational change and of the implementation of new work organisations?

To answer this question, the researcher will need the following:

- a working definition of 'organisational change' and of 'new work organisations';
- working definitions of possible organisational concepts and business practices (see the original sources of 'pure' concepts and practices);

- working definitions of the production structure, the management structure and the division of labour (see e.g. Mintzberg, 1979; representatives of systems theory);
- a working definition of the dimensions of the decentralisation – human factor orientation model.

The researcher must first assess the ‘work organisation’ prior to change as well as the work organisation after change was implemented. Second, the process of change must be assessed.

To assess ‘the process of organisational change’, the researcher will need the following:

- a detailed inventory of forms of organisational change;
- a detailed inventory of possible drivers for managerial choice;
- working definitions how each driver may affect the work organisation;
- working definitions how managerial choices are affected themselves.

At this stage exact descriptions of developments and characteristics are very important.

A second question to address is: how are working conditions affected by changes in the work organisation and drivers for managerial choice?

To answer this question, the researcher will need the following:

- a working definition of the relevant elements of ‘working conditions’. We proposed to define these elements by using the conditional approach. (Useful concepts in this respect are Karasek’s demand-control model (1997) and operational definitions of the employment relationship provided by Ouchi (1979, 1980) and Williamson (1981). Also an inventory of OSH indicators is relevant);
- a working definition is needed on how the design of work organisations affects working conditions (for example the theory of modern sociotechnology contains an elaborate approach with design rules which enables users to analyse consequences of the design of the production and management structure for the job demand-control balance);
- a working definition of how managerial drivers affect working conditions (examples are theories and constructs on leadership, human resources policies, communicational behaviour, participation, etc.).

This phase should also result in precise descriptions of facts about states and processes.

A third question to investigate is: how is the quality of work affected by the working conditions and by changes in the work organisation and drivers for managerial choice?

To answer this question, the researcher will need the following:

- a working definition of the relevant elements of ‘quality of work’;
- make a clear distinction between ‘conditions that feature the workplace’ (like risks due to workplace design) and ‘evaluations by subjects’ of their workplace conditions;

- a working definition of how working conditions affect the quality of work (e.g. factors that affect conditions and factors that affect personal evaluations, like psychological theories on motivation, perception, etc.);
- a working definition of how managerial drivers affect quality of work (e.g. factors that affect conditions, like task structuring, and factors that affect personal evaluations, like theories and constructs on leadership, coaching, communication, support, etc.).

The main results of these steps can be summarised as follows:

- thorough descriptions of the mechanisms of organisational change and the roles of actors in the process;
- better theory-based explanations of the examined relations;
- tangible results as starting points for policymaking on European, national and company level.

#### Research methods

To answer the questions that have been formulated empirically, different research methods can be used. We suggest a three-step approach:

- 1 Case studies. On the basis of a selection of cases the theoretical constructs can be validated. The cases consist of a few tens of organisations, preferably having experienced organisational change. High quality descriptions of case studies should lead to a profound insight of factors that are connected to organisational change and the process of change.
- 2 Survey. Based on the case studies a selection of variables is made, which are considered relevant for measuring the nature and extent of organisational change and the relation it has with working conditions and the quality of work. Two kind of surveys are possible. First, a survey under the working population of the EU, as has already been undertaken by the Foundation, to investigate causes and effects of working conditions, the quality of work and job satisfaction, as far as this is possible by approaching employees and given the restrictions of cross-sectional surveys. Variables should be constructed and slotted in into the existing European Survey on Working Conditions. A second survey should be held amongst representatives of companies on top management level, to investigate causes and effects of organisational changes, working conditions, possible consequences for the quality of work and drivers for managerial choice. The methodology used in the Foundation's EPOC survey may be suitable, depending on the possibility to attain a sample that is representative for variables as country, sector, size, etc. From the case-study results proper variables should be selected and redefined, and used in the questionnaire among managers.
- 3 It is recommended that some kind of longitudinal method is used for the benefit of cohort analyses and the monitoring of future developments.

This approach should guarantee that all the necessary information will be effectively gathered.

The project should ensure theory-based research that explains how organisational change takes place and how it affects working conditions and quality of work. Nonetheless, it will not be as easy as might be suggested here. There are several methodological problems that need to be resolved,

like the construction of operational definitions and modular theoretical constructs, multi-level analyses issues, international comparativeness, and the sample construction, to name but a few.

A final step is to combine the research activities with introducing the findings into the practice on companies' levels and to the policy praxis on European and national levels. This will need a well elaborated research-based consultancy approach, including educational and training programmes to transfer the knowledge gathered.





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**Unpublished progress reports prepared during this project:**

- Oeij, P.R.A., Wiezer, N., 'Elaboration of a framework for the analysis of new work organisations, their working conditions and quality of work', TNO-memorandum. Hoofddorp (Netherlands), TNO Work and Employment, July 2001.
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- Oeij, Peter R.A., Wiezer, Noortje M., *New work organisations, working conditions and quality of work: towards the flexible form? 2<sup>nd</sup> Progress report of the literature review prepared for the European Foundation for the Improvement of Living and Working Conditions*, Hoofddorp (Netherlands), TNO Work and Employment, September 2001.
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**New work organisation, working conditions and quality of work: towards the flexible firm?**

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*What impact have the new forms of work organisation had on workers and companies? Has it led to greater control over work and more flexibility? Or has it resulted in increased pressure and loss of control? This report focuses on the relationship between new forms of work and working conditions and the impact on the quality of work. It looks in particular at the effects on workers' physical and mental health, safety, working time, lifelong learning, job security, job satisfaction and job control. It concludes that satisfaction with working life in Europe is determined by factors such as the pattern and duration of working time, the pace of work, job content and job autonomy.*

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