Partners at Work?

A Report to Europe's Policy Makers and Social Partners

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October 2002

Contents

Preface

Emerging forms of work organisation represent an under-utilised resource in Europe, offering the potential for convergence between enhanced organisational performance, employment growth, healthier work and social dialogue. Yet it sometimes feels as though the potential offered by this 'high road' of organisational innovation is scarcely recognised by employers, social partners, policy makers and other actors. In consequence there are serious implications for Europe's ability to achieve its fundamental economic and social goals such as competitiveness, innovation, quality employment, health and social inclusion.

This report presents the findings of the Hi-Res project funded by the EU under the DG Research programme Competitive and Sustainable Growth: Accompanying Measures. The Hi-Res project sets out to develop the High Road concept as a Resource to support the creation of appropriate responses by policy makers, social partners and others. This report aims to provide an understanding of the high road by analysing the concrete experiences of organisations throughout Europe as they struggle towards change. It is based on an overview of recent research and an analysis of more than 100 case studies from six European countries – Denmark, Ireland, Italy, The Netherlands, Sweden and the UK.

Electronic versions of this report can be found at www.hi-res.org.uk. Each of the case studies referenced in the report can also be found at the website, together with an analysis of the main evidence. Several theme papers specially prepared for Hi-Res can also be accessed via the site.

The project was undertaken by a multinational team of partners, each of whom contributed unique insights and understanding and who collectively brought a range of different disciplines, knowledge and experience to the question of work organisation. The project was led by The Work Institute, part of Nottingham Business School at The Nottingham Trent University. Partner organisations were:
• Danish Technological Institute
• Irish Productivity Centre (IPC)
• NOMISMA (Italy)
• ITPS (Sweden)
• TNO Work & Employment (The Netherlands)

Henri Rouilleault of ANACT (the French national agency for the improvement of working conditions), Paul Oehlke of DLR in the German Federal Government and Campbell Ford of the UK Work Organisation Network made significant contributions to the ideas expressed in this report. Other members of the European Work Organisation Network (EWON) also helped to develop the analysis through discussion and the contribution of background materials. Further research material on new technology was contributed by Philippa Collins (Heriot Watt University) and on knowledge management by Gilly Shapiro (CENTRIM, University of Brighton).

The analysis was first tested and then disseminated in each country with representatives from social

partner, business support, research and public policy organisations as well as employers and trade unionists. We are grateful to everyone who contributed their time, ideas and experiences at these events.

The project team is particularly grateful for the support and encouragement offered by John Cleuren and Massimiliano Dragoni of DG Research, and Lars-Erik Andreasen of DG Employment & Social Affairs in the European Commission.

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Summary

Coping with change in a global economy dominated by new patterns of competitiveness and employment, technological innovation, political upheaval, social transformation and environmental uncertainty is the primary challenge facing organisations at the beginning of the new millennium. Both companies and public organisations need to develop new levels of agility and capacity for innovation in this environment. However different strategies for organisational change are in evidence. In some cases improved performance is sought through sustained innovation in which employee involvement and a high quality of working life play a key role. This 'high road' approach contrasts with attempts to remain competitive by means of short-term cost-driven changes (the 'low road'). The Hi-Res project sets out to develop the High Road concept as a Resource to support the creation of appropriate responses by policy makers, social partners and others. This report aims to provide an understanding of the high road by analysing the concrete experiences of organisations throughout Europe as they struggle towards change. It is based on an overview of recent research and an analysis of more than 100 case studies from six European countries – Denmark, Ireland, Italy, The Netherlands, Sweden and the UK. Above all, the findings demonstrate that workplace innovation is a messy and difficult process, requiring continuous learning, experimentation and reflection. There are no blueprints.

The debate on new forms of work organisation has been in progress since the 1950s. It attempts to move beyond the principles of F. W. Taylor, one of the most influential management thinkers of the twentieth century, who advocated rigid divisions of labour in work organisation including the separation of conceptual and planning tasks from their execution. This condemned millions of workers to monotonous, stressful jobs while depriving organisations of the benefit of their knowledge and experience. In the US and Japan the move from Taylorism led to a preoccupation with quality systems, just-in-time practices and business process redesign. Many European researchers and managers however focussed on new forms of work organisation which sought the maximum utilisation of human potential. The quality of working life movement promoted the idea that employees should play an active part in the workplace. Many Northern European countries created national programmes to develop and disseminate new forms of work organisation. Across Europe as a whole however, support from governments and the social partners has been limited, despite substantial evidence (discussed in Chapter Two) of the positive impact that new forms of work organisation have on productivity, innovation and quality of working life.

Workplace innovation reflects the interplay between a complex set of factors both internal and external to the organisation. Chapter Three examines case studies and literature to understand the pressures for change. It finds that external pressures include competitive advantage, supply chain relationships, de-regulation and regulation, merger and acquisition, the environment, new technologies and external support. Internal pressures include the quality of working life and employee satisfaction, the desire to improve industrial relations, the need for flexibility, new technology and knowledge management. The degree to which change emerges as a matter of urgency also varies considerably. Some companies were prompted to change by immediate fears

for their survival while others were planning for long term competitive advantage. Whether part of a strategic vision or a solution to an immediate problem, the issues that organisations were most likely to address with their change initiatives included customer care, delivery times, cost reduction, quality, employee satisfaction, industrial relations, flexibility and employee skills and development. They often set measurable targets by which the success of their change initiative would be judged.

Chapter Four examines the characteristics of new forms of work organisation. Knowledge, innovation and creativity are the driving forces for the successful organisation of the future, so effective change requires widespread involvement and participation across the whole workforce. Innovation arises in part by making it possible to question established expertise, received wisdom and authority. Managers may find the implications of this difficult and threatening; such potential obstacles need to be anticipated and addressed through the redesign of managerial roles and responsibilities as well as by developing new management competencies. Job redesign and teamworking are also at the heart of new forms of work organisation, providing the day-to-day context for innovation through employee involvement. There is also a strong link between the success of new working practices and investment in workforce development. There needs to be an emphasis on nurturing core competencies such as team skills, communication and problem solving.

Obstacles are an inevitable part of change – and are perhaps integral to the process of organisational learning. This study confirms the findings of previous research that most organisations experience unforeseen difficulties and setbacks when trying to implement new forms of work organisation. Organisational culture and resistance to change underlie many of these problems. Chapter Five draws on the case study evidence to discuss the obstacles and barriers encountered during workplace innovation, and shows how they affect the achievement of change objectives. The failure of previous change initiatives, insufficient resources and failure to keep employees properly informed can all cause problems. Changes in the economic climate, market demands, trends, legislation or public policy frameworks can also have adverse impacts on the success and sustainability of workplace innovation.

Despite all the difficulties, research evidence demonstrates the benefits of new forms of work organisation on business and organisational performance. Moreover the case studies all provided evidence of success in at least some areas. Chapter Six analyses these outcomes. Research at national and transnational levels in Europe found that new forms of work organisation have a positive impact on workplace performance and innovation, and studies carried out in the US and Australia came to the same conclusions. In individual case study workplaces, costs had been reduced and productivity and quality had been improved, while quality of working life had been enhanced through job enrichment.

Chapter Seven draws out some important implications for European policy makers and social partners. Targeted support for new forms of work organisation can be highly effective, both in the individual workplace and in creating wider awareness and knowledge. However the provision of such support is patchy across Europe. The Hi-Res evidence points to clear challenges and opportunities which European policy makers and social partners must address if the full potential offered by new forms of work organisation is to be realised. Priorities for action include raising awareness of new forms of work organisation, providing better access to evidence-based learning resources, building new institutional capacity to support workplace innovation, ensuring the more effective targeting of existing policy measures and introducing special measures to support the applicant countries.

Chapter One

Introduction

The road to the high road of work organisation

What should we expect work to be like in the 21st century? 'Diverse' is perhaps the most likely response from even the most casual observer of present day Europe. Differences in work are marked between, for example, the famous small firm clusters of Northern Italy, the paradigmatic team-based organisations of Scandinavia, the re-engineered corporations influenced by US or Japanese management theory or the persistent rump of traditional Fordist organisations. The emerging concept of a 'high road' has, in recent years, tried to give meaning and shape to this evolving diversity. The evidence base for the high road can be found in the experiences of hundreds of companies during a period of forty years (see for example Trist et al, 1963; Emery & Thorsrud, 1969), all of which changed their thinking about human and organisational factors. It has no prescriptive form but the high road does distinguish between organisational strategies based on sustained innovation and those based on short-term cost-driven factors. Likewise it emphasises the potential to enhance performance through the enhancement of working life. In particular it challenges policymakers, social partners and other actors to become engaged – to recognise that choices in the design of work organisation are not the sole concern of enterprise managers but have much wider implications for European competitiveness, social cohesion, quality of life, and health and safety.

Above all the high road suggests the possibility of convergence between values and objectives previously seen as being in opposition to each other. Can Europe achieve sustainable competitiveness and high levels of employment *through* the enrichment of working life? In short this is no less than an attempt to unite customer satisfaction with job satisfaction. As this report demonstrates, such a transformation is very problematic and there is no evidence to indicate the existence of a mass movement in this direction. Yet the evidence is there to suggest that the potential for such convergence is more than utopian fantasy.

The aim of the Hi-Res project is to piece together these fragments of evidence in ways which show what the full picture might look like – in much the same ways as an archaeologist tries to reconstruct the shape of a mosaic from just a fraction of the original pieces. This report provides some evidence based on an overview of the current literature, and an analysis of more than a hundred case studies. The Hi-Res project sets out to develop the **Hi**gh Road concept as a **Res**ource to support the creation of new forms of intervention by policy makers, social partners and others. In other words, the project aims to provide a better understanding of the high road by analysing the concrete experiences of organisations throughout Europe as they struggle towards change. Crucially this is not just about the dynamics of change inside each organisation, but the extent to which workplace innovation is supported or impeded by the wider environment in which the organisation exists.

For the six institutes within the transnational project team there was a steep learning curve. The high road can be readily understood and agreed as a 'headline' concept, but it is much harder to define as a set of principles acceptable within the context of different research disciplines and contrasting national experiences. Indeed the team soon concluded that it would be inappropriate to portray the high road as an internally consistent model equally applicable throughout Europe. The whole sphere of work organisation is, rather, a contested terrain on which different forces and interests interact continuously. This interaction creates a process of evolution in which hybrid outcomes reflect both the organisation's economic and social context, and the unique process of learning and experimentation which it has experienced.

What distinguishes the high road from other approaches is that this process is grounded in inclusive and open dialogue involving both internal and external stakeholders. Above all the high road is characterised by the search for 'win-win' solutions: enhancing organisational performance and job satisfaction by developing and using employee competencies and creative potential to the maximum extent. The question, however, remains: how do companies climb towards the high road of work organisation? How do they develop and capture the talents of a motivated and self disciplined workforce? But before we dig deeper into these results from the literature and case studies, it is good to shine some light on the policy relevance of the 'high road'. We then go on to elaborate the 'high road' model in greater depth.

Why is the high road significant for policy makers and social partners?

It is sometimes argued that the design of work organisation is principally an internal issue for companies and public service providers, one in which external bodies have very little legitimate interest. Yet the high road model demonstrates just how closely work organisation is embedded in the wider social and economic context. On the one hand, successful and sustainable approaches to work organisation draw extensively on opportunities for knowledge creation, learning and dialogue created by social capital. This includes research by public bodies, services provided by intermediate organisations, formal or informal networking, education and training provision and the system of industrial relations. Policy makers and social partners have an interest in ensuring that these wider resources are made available to support evidence-based learning and innovation amongst the key actors.

On the other hand, policy makers and social partners also have a more direct interest in what happens in the workplace. The whole of Europe faces a series of challenges to its competitiveness and social cohesion. Macro-level intervention alone cannot protect individual workplaces from the force of these challenges: rather the task is to enhance the organisational competence of individual enterprises to ensure successful adaptation to an increasingly volatile environment. Principal challenges include:
- how to enhance innovation and competitiveness;
- how to manage the restructuring of national and regional economies;
- how to promote health at work;
- how to cope with the ageing workforce.

Innovation and competitiveness
Europe's potential competitive advantage increasingly depends on its ability to innovate: to

continually reinvent its products and services in ways which cannot easily be imitated by competitors. Public services must, likewise, sustain high levels of innovation to meet taxpayers' increasingly demanding expectations. The working knowledge of employees throughout the organisation is becoming an important asset in the innovation process. In the traditional organisation, by contrast, conceptual and executive tasks were strictly segregated. Product innovation was principally the responsibility of external or internal R&D departments with little shopfloor involvement or participation.

In the economic and social context of the twenty-first century however, employee knowledge and talent are of paramount importance for European competitive advantage. According to the OECD knowledge is an asset that plays an increasingly important role in business growth (OECD, 2001b). The speed of change required in manufacturing and service companies alike is so rapid that traditional organisational structures cannot cope. Innovative products and services need to be brought to market rapidly with as little iteration in the design process as possible. New forms of work organisation are needed to involve the whole workforce in generating ideas, identifying potential problems and speeding up the rate of implementation. Employee knowledge also plays a key role in process innovation and continuous improvement throughout the product lifecycle.

Information and communication technology (ICT) plays a particularly important role in product and process innovation. Computers are invaluable not just in the storage of information, but also in solution search and development. Workers need higher-level skills to work with such codified knowledge. Yet it is also clear that enterprises only gain the full benefit of ICT investment if it is associated with organisational innovations which allow employees to achieve the optimum balance between individual skills and technological potential (see OECD, 2001b; Dhondt & Kwakkelstein, forthcoming).

Economic restructuring

Increasingly rapid economic and technological change will inevitably lead to increasing volatility in the European economy and rapid changes in patterns of competitive advantage in the global market. Major restructuring and decline has been experienced throughout Europe in traditional sectors such as coal, steel, textiles, shipbuilding and even electronics, sometimes over a period of thirty years or more. Manufacturing is of declining significance within national economies while service sector activity is becoming dominant in many parts of Europe. In the Netherlands for example, services in 1980 accounted for about 45% of gross national product (GNP). In 1999, these sectors represented 70% of GNP. In several parts of Europe such changes are far from complete. Yet as the previous paragraph suggests, technology and new forms of competition are bringing changes of comparable significance to previously stable service sectors such as banking and finance.

Restructuring has also led to high unemployment. In June 2002, 7.7% of Europe's labour force was unemployed, up from 7.4% a year earlier, with Luxembourg having the lowest unemployment rate and Spain the highest. This is a significant drop in unemployment from 1995 where some 10% of the labour force was unemployed. Even so, such a high percentage, certainly in comparison to the US and Japan, is a source of social exclusion. The skills and gender gaps and the age imbalances that exist at regional level hamper social cohesion and constrain economic growth. The proportion of individuals with high-level skills in the working age populations differs markedly between regions and accounts for a large part of the variance in employment rates. The worst regions are characterised by a vicious and intractable circle of persistently low performance in terms of employment, unemployment and productivity (European Commission, 2002).

Experiences of restructuring at local level, repeated in many areas throughout Europe, offer important lessons for policy makers and social partners in preparing for such changes. Mono-skilled steel workers or miners have been very hard to re-integrate into the labour market; conversely labour markets dominated by such a narrow skills base do not easily animate or attract new types of economic development (see the results of the EU's LEDA programme, 1986 – 96, which sought to build the capacity of local areas to respond to high unemployment through strategic economic restructuring). The introduction of new forms of work organisation into threatened (or potentially threatened) sectors and enterprises has at least two potential advantages:

• Firstly, the ability of new forms of work organisation to increase the potential for innovation may add value to products or services, moving them into less price-sensitive markets.

• Secondly, the ability of new forms of work organisation to increase the employability of workers through multi-skilling and the acquisition of higher competencies in problem solving, communication and teamworking will both help labour market adaptation and support new forms of local and regional economic growth and regeneration (OECD, 2000).

Healthy work

After years of improving working conditions, the latest figures show rising health problems among workers (Merllié & Paoli, 2001). However there are fewer health problems in working environments where workers enjoy significant job autonomy than in those where workers experience monotonous tasks and/or no control over their work (Dhondt et al, 2001). New forms of work organisation are also associated with increasing workforce skills, which in turn improve working life (European Commission, 2002).

Yet there is also evidence that new practices are associated with greater stress at work. Employees are more autonomous, and in that sense may be more fulfilled at work, but direct responsibility for their own performance can in some circumstances intensify stress. Worryingly, in recent years, the incidence of stress and accidents at work has reportedly increased in many OECD countries. According to some studies this trend is partly attributable to experiences of re-organisation at work (Askenazy 1999, Fairris and Brenner 2001, OECD, 2001b). The policy challenge is clearly to identify and promote evidence-based approaches to work organisation which maximise the potential for healthy work while minimising risks of adverse consequences.

The ageing workforce and security

The ageing of the population is a major challenge for the European labour market. While changes in the age structure of our societies have not had a significant effect so far they will certainly become more relevant in the decade to come. The Stockholm European Council set a target of a 50% employment rate for the 55–64 age group and yet, between 1995–2000 the employment rate for this age group increased by only 1.8 percentage points compared to 3.3 percentage points overall for the whole working age population. It did, however, increase by 0.8 percentage points in 2001. While this rate of improvement is helpful it is not sufficient to enable the EU to reach the Stockholm target. In the next ten years the European workforce will grow older. In the years following 2010 it will start to shrink. With relatively modest levels of employment growth it can be expected that employment rates will rise.

Creating a policy framework that allows and encourages older workers to remain in employment

longer is crucial. This requires reforms in the tax, benefit and pension systems as well as fundamental change in social attitudes, in employers' recruitment and training practices, and in work organisation. Efforts will need to start early in the life cycle and should focus on supporting long-term sustainable working life, including making lifelong learning a reality for people of all ages. In response to this challenge, the EU's Barcelona Council called for measures to encourage older workers to remain in the labour market. The Council advocated flexible and gradual retirement formulas, guaranteed access to lifelong learning, and a rise of about five years in the average age at which people stop working, all to be achieved progressively by 2010. However the way in which work itself is organised, and its impact on quality of working of life, are key factors in both motivating and capturing the potential of older workers.

Workplace innovation as a market imperfection

Innovation in work organisation is a clear public policy goal. For companies however, workplace innovation is not necessarily at the top of the agenda. Innovation requires substantial investment and has an uncertain outcome. Organisational innovation is an even more uncertain investment. Several studies including the European Foundation's EPOC (Employee Participation and Organisational Change) Survey (1998) and the European Work & Technology Consortium (1998) have explored this reluctance to invest in workplace innovation. Obstacles to innovation in work organisation can be summarised in terms of:

- limited awareness amongst managers, especially in SMEs, of the potential of new forms of work organisation for enhanced performance and competitiveness;
- limited access to the knowledge base and expertise required to create and sustain new forms of work organisation;
- the need for social partner organisations to play a more proactive role in promoting, researching and sustaining workplace change;
- the inappropriate or inadequate nature of existing policy programmes and regulatory frameworks.

In economic terms, even though the 'high road' may be a rational strategy to choose, companies will not automatically invest in it and may prefer to wait for their competitors to make the first move. The complexity of workplace innovation and the probability that returns on investment will be long term means that external pressures and incentives are required to tip the balance. This is where public policy makers, social partners and other actors have an important role to play.

Is the high road a policy issue?

The economic and social factors outlined above make it clear why the high road should be of interest to policy makers and social partners – and why intervention is required to make the high road a reality in organisations across Europe. In short the necessary conditions for economic growth and innovation need a supportive and proactive policy framework with full social partner involvement. This report, based on the concrete experiences of organisations, shows what needs to be done. Such actions support the strategic policy framework at European level. However as we argue in Chapter Seven there are several significant gaps at the level of practical policy design and implementation.

The 1998 Green Paper "Partnership for a New Organisation of Work" specifically identifies work

organisation as a target for public policy, arguing the need for a balance between greater flexibility for companies and more stability for employees. The Luxembourg Summit's Four Pillars (entrepreneurship, adaptability, employability and equal opportunities) are all closely linked to work organisation issues, and the success of the strategic policy framework relies significantly on the transformation of existing workplaces. Traditional models of work organisation hinder the achievement of these goals by:

- constraining innovation and versatility in the workplace;
- deskilling jobs and impoverishing working life;
- segmenting labour markets in ways which entrap disadvantaged sections of the workforce in low-skilled and vulnerable employment.

In contrast the emergent new European model of work organisation:

- promotes entrepreneurial behaviour throughout the enterprise;
- provides the conditions for versatility, innovation and responsiveness to markets;
- develops the core skills which provide the individual employee with a more robust position within increasingly volatile labour markets;
- provides improved employment opportunities for women and ethnic minorities by enhancing the quality and sustainability of many traditional areas of employment.

In the next Chapters of this report, case study material and survey evidence will be used to explore these findings in detail.

The Lisbon, Nice and Lulea summits have further stressed the need to achieve these goals. Europe is on its way to increased labour market participation. The European Councils have stressed that this employment needs to be of a high quality and will require high skill-levels.

Other European policy agendas which converge with Hi-Res include corporate social responsibility and teleworking. These are interesting developments but to treat them as separate agenda items runs the risk of fragmentation – of failing to see the organisation as a whole entity. Corporate social responsibility and telework are intimately connected with new forms of work organisation but the policy connections have yet to be made.

New forms of work organisation will need to play an essential role if we are to achieve the social and economic goals of the European Union. However a coherent policy framework is still some way off, an issue addressed in the final Chapter.

What and which high road?

Building sustainable competitive advantage

The real source of Europe's potential competitive advantage lies in the capacity to do things differently, in ways which cannot be easily imitated by international competitors. Such advantage cannot be achieved solely by cost reduction or technological innovation, which can both be easily imitated. Rather this high road of workplace innovation and competitiveness means the continual reinvention of products and services using our rich European knowledge, skills and experience in more imaginative and effective ways. Traditional ways of organising workplaces and traditional styles of management cannot achieve this because they are characterised by too many inherent rigidities and because they fail to make use of workforce potential in problem solving, quality and innovation.

Process innovation is the key to innovative products and services. New forms of work organisation offer the chance to improve the capability for innovation and to enter growth markets which are not dominated by cost competition. Building the organisational competence needed to achieve this requires fundamental and sustained changes throughout the enterprise. But there are no blueprints. Each company or public body must learn to adapt organisational structures, skills and cultures in ways which reflect their individual circumstances and potential.

Discussion of Europe's competitive advantage assumed a new dimension with the emergence of the 'new economy' during the 1990s. The rise of numerous 'dot.com' companies gave rise to a feeling of economic renewal and promise, though the subsequent demise of the internet economy at the end of the year 2000 has forced a serious re-evaluation of earlier optimism. However the new economy cannot be equated solely with the rise and fall of the internet companies. The underpinning theory was developed by economists who compared variations in productivity growth between companies and countries (see for example Romer, 1990). Differences in economic growth and innovation were explained in terms of companies' 'intangible assets', in short their ability to create and exploit knowledge to develop a continuous flow of new products and services in the shortest possible time. Thus the value of a company does not depend on its fixed assets but rather on the knowledge, experience and talent of its entrepreneurs and staff. In these terms the 'new economy' represents a long-term structural shift resonant with the high road and cannot be dismissed because of the collapse of an internet economy fuelled by an unsustainable investment frenzy.

Human resource 'regeneration' versus 'consumption'

Not all organisational change leads to the high road. Cost-driven models of change, often reflecting the need for short-term adaptation to new competition or tighter budgetary regimes are widespread or even prevalent. The basic choice facing organisations can be characterised as *cost-based strategy* compared with *innovation-based strategy*, and this will have powerful implications for the design of work organisation. Cost-based strategies mean optimising production processes, using technology to substitute for jobs and outsourcing all tasks not defined as part of the 'core business'. On the other hand, innovation-based strategies are also concerned with costs but this does not provide the main focus of reorganisation. Indeed cutting costs too severely can endanger strategies in which sustainable advantage is derived from innovation and versatility.

We can therefore differentiate between the high road and a *low road* of innovation, built on quite distinctive approaches to the organisation of work. Companies on both the high and the low roads rely on new forms of work organisation. Moreover (and this is a source of frequent confusion), they use similar concepts and vocabulary to describe their organisational changes. But the actual application of these concepts is quite different in high and low road companies, reflecting their very different business strategies. Both types of company may share similar concepts relating to quality or flexibility. But while low road companies will put the emphasis on measures like 'just-in-time', process control or total quality control, high road organisations are more likely to stress the importance of an enhanced use of human skills and knowledge, the decentralisation of decision making, a holistic approach to the shaping of work tasks, and the use of technology as a tool for the enhancement of workforce skills.

Both types of company may even use the same organisational tools, but in very different ways. A revealing illustration of this is in teamworking. Low road team (or group) working can simply mean the multi-skilling of individuals who happen to work alongside each other in an organisation.

Workers here can substitute for each other, thereby increasing personnel flexibility and reducing bottlenecks. Task design is narrow and based on very short cycles; human skills are used merely to enhance highly standardised working procedures. But on the high road, the team takes substantial responsibility for all, or part, of the complete product or service. The team thereby gains considerable room for manoeuvre in planning its work and in continuously adapting working procedures to meet actual needs. Even the improvement of existing products or services falls within the operational responsibility of team members who are given real freedom in terms of time and the other resources required to fulfil this role.

In recent decades the economic principles underpinning production have changed. Whereas in the past investment in machines or 'hard capital' was seen as the sole way to remain competitive, in the current situation this perspective needs to be updated. The amount of human effort in production is so limited that further rationalisation does not offer a substantial improvement in productivity. Higher profits can only be achieved by helping 'human capital' to use the current technology more effectively. Such an approach, however, requires another way of thinking about human capital, and new working relationships. However organisations which have tried to control every dimension of work in the past will not easily be able build trust-based relationships with their employees in the present.

Another element of this change is the continuing gradual shift towards services. In these new sectors, computers and software are the 'hard' capital. But investment decisions about such technologies are made in a somewhat different manner than machine or real estate investments. Two computers do not deliver twice as much output as one. Here again, human capital is an important driving force to make this investment productive. Moreover traditional control methods do not work in services. This makes it clear that new approaches to work organisation are needed. But such approaches do not come overnight. Even in the technology-based sectors, companies still choose the 'low road' of cost driven growth. Internet companies and call centres for example are often based on 'intensive work systems' (Kira, 2000). At worst, the call centre has become the sweat shop of the current era.

The description we have given so far is not very specific and a more rigorous approach is needed to distinguish the high road from other trends in work organisation such as lean production and business process re-engineering. Business process re-engineering or BPR became popular at the beginning of the nineties when consultants started to experiment with the possibilities offered by new information technologies (IT) in re-organising business processes (Scott Morton, 1991). Examples of companies which dramatically improved productivity and effectiveness showed the effectiveness of BPR. The core of this low road approach was that jobs and organisations were changed without the knowledge and participation of those in them. The term 'change management' used by these IT consultants was coined only to cope with possible resistance by employees whose working situations were changed.

The same top-down approach is used in lean production. The key to lean production models is the supervisor. Teams solve their own problems, but merely by following the instructions of their supervisors. Companies with such models were shown by some research to perform better than companies in which teams were constituted on a more egalitarian basis (Andersen Consulting, 1994). These lean production models have been introduced into the automotive industry and now dominate the assembly industries. Recent research has examined how the lean production model has been adapted and modified as it has been implemented in both Europe and the USA (Kumon, 2000).

As in the discussion about the new economy, the core of the high road lies in the way human resources should be dealt with. In a recent literature review Kira (2000) makes a useful distinction between 'human resource consumption' and 'human resources regeneration'. The core dimensions of work organisation lie in the different ways in which people are treated. The central question concerns the extent to which such changes improve worker health and at the same time secure productivity growth. According to Kira the only way in which this convergence can be achieved is through human resource regeneration. Kira calls such approaches 'sustainable work systems'. The employee's need for psychologically and physically good jobs are balanced against the needs of the organisation when designing the work system and creating its psycho-social context. The opposite of 'human resource generation' is 'human resources consumption', and Kira argues that this forms the basis of lean production or 'intensive work systems'. Intensive work systems emerge when there are not enough resources (too few people, limited opportunities to exert influence, poor skills, etc.) in the work system or if regenerative processes are not inbuilt. Employees may also contribute to the consumption of their resources by pushing themselves too hard. Awareness of business imperatives or competition for example may lead to 'self-intensification'.

The core of the high road is thus 'human resources regeneration'. Only those approaches which take the needs and interests of employees into account can be included in the definition, thus excluding lean production models. Quality of working life is at the centre of the high road: in brief, optimally performing and sustainable organisations depend on high quality working environments.

Arenas of organisational change

We have shown what the 'high road' is and why it is central to the future of competitiveness and employment in Europe. From this analysis however it is clear it will not be easy to get there. The 'road to the high road' cannot be achieved through slavish adherence to a list of best practices or by attempting to follow a rational step-by-step process. Rather the 'high road' is essentially a process of continual learning, experimentation, adaptation and innovation.

Beyond 'best practice'

While the logic of 'best practice' is pervasive, the supposition that there are definitive ways of organising – even for different types of enterprise - remains problematic. It is also inconsistent with the many findings that innovation and creativity are the key to sustainable competitive advantage, since 'best practice' largely relies on mimicking the innovative practices of others. We stress that workplace innovation cannot be defined in terms of the identification and implementation of a series of blueprints to change discrete aspects of an organisation.

Although the traditional way to accomplish change is through the application of generalised concepts to specific problems according to a predetermined set of rules, it is now increasingly argued (see for example Fricke, 1997; Gustavsen, 1992) that this approach has emerged as a roadblock rather than a motor for change in organisations. It is important, rather, to understand the complex learning paths which characterise change in real situations. Pettigrew (1987) for example is very critical of a-contextual approaches and argues for greater focus on the internal and external contexts which drive, inform and constrain change. Such commentators criticise the common perception of change within management texts as rational and incremental, thereby conducive to the use of normative change models. They argue instead that change is a dynamic and uncertain process which emerges through the interplay of many factors (Hague, 2001). In this

analysis, organisational innovation struggles towards a virtuous circle in which reflexive practices capture employee knowledge and experiences to create a dynamic interaction between product or service innovation and organisational change.

Case study data provides useful rich description, but its translation into 'key lessons' has been notoriously difficult. Part of the reason for this lies in a replication of the 'one best way' logic, whereby analysts have attempted to make universal generalisations, which simply cannot be supported empirically. Even those checklists, or 'key learning points' which make no claim to universality, have often failed to offer much more than a list of organisational truisms – useful, but failing to go beyond managerial commonsense (see for example Buchanan, 1999; Collins, 1998; Dawson, 1994). Another difficulty of the checklist approach is that many of the issues appear discrete when there is evidently considerable overlap between points of advice. It is difficult to tackle issues like 'partnership', 'teamworking' and 'culture' separately because the boundaries between them are obviously blurred.

Finally, many change recipes suggest that transformation occurs through a rational and incremental process. Lewin's analysis that organisational transformation occurs through linear 'freezing-unfreezing-refreezing' processes has provided the theoretical basis for many contemporary change agendas (Burnes, 1996). However, a growing number of academics stress that the actual practice of change is far from tidy; rapidly changing markets, technologies and labour market expectations have rendered the logic of rational-incremental change redundant – even assuming their practical relevance in the first place (Pettigrew, 1987).

The Hi-Res analysis is therefore designed to:
• avoid prescription;
• allow for change processes to be explored in ways which recognise the complex and untidy path which change may take;
• move beyond a list of 'key learning points' and offer opportunities for deeper analysis and exploration of the dilemmas and choices posed during the change process;
• facilitate a more integrated analysis of overlapping themes and issues;
• allow for the inclusion of external influences upon change process.

A model for interpretation

External factors such as the market environment and the industrial relations context may well influence strategic choices made at the local level, but the model challenges the suggestion that any single factor will explicitly determine the way in which an organisation will respond. The core of the Hi-Res interpretative model lies in understanding the complexity of the relationship between internal and external factors. Participation of employees from all levels of the organisation can be shown to improve the effectiveness and sustainability of change by utilising their detailed knowledge of work practices and increasing their sense of ownership of the outcomes. However the organisation should not be viewed as impermeable and an interchange of ideas and experiences involving employees at all levels and other organisations or intermediaries will enrich the quality of innovation. Similarly innovation processes within organisations may influence others in their sector, supply chain or region. Renewed research attention on sectors, company networks or clusters of interrelated activity may reveal how firms both learn from and contribute to the cognitive arenas in which they associate (Child & Smith, 1987). Likewise external knowledge, ideas and experience may instigate a process of learning and experimentation within individual enterprises, but it is unlikely that there will be indiscriminate adoption of external solutions without

some form of adaptation and shaping by local stakeholders.

Organisational boundaries are also becoming blurred in operational terms, with the increasing dispersal of production and innovation vertically through supply chains and horizontally through sectoral and knowledge clusters. Arguably the network will become the dominant organisational form of the 21st century, a possibility which is considerably enhanced by advances in ICTs and the consequent emergence of the 'virtual organisation'.

The Hi-Res analysis starts with the high road's emphasis on competitiveness through the continual reinvention of products and services, which places a considerable premium on the ability of an organisation to harness the tacit knowledge and creative potential of employees. It is central to the argument that this involves much more than the ability simply to recruit and retain employees with the necessary aptitudes and competencies. It requires a work environment which fully engages all levels of employees in planning, quality assurance, problem solving and innovation (Cooke and Seely Brown, 1996). Building this work environment involves a complex and contextualised process of dialogue, learning and organisational innovation based on interdependent processes in which workplace partnership, job design and teamworking are the principal organisational components. Work organisation then is a reflexive process, not an end state.
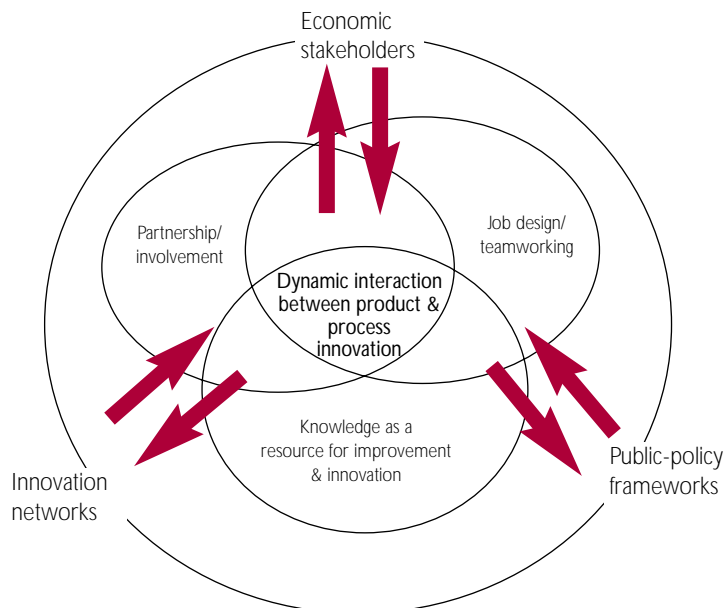

Figure 1: Arenas of organisational learning and change.

Figure 1 identifies three organisational arenas of the high road characterised by a dynamic interaction between process and organisational design:

• knowledge, innovation and creativity are both valued and placed close to the heart of the work process at all levels of the organisation;

• partnership and dialogue establish the preconditions for a workplace environment in which the instigation and ownership of innovation are widely distributed;

• teamworking becomes a defining characteristic of all aspects of work, both routine and developmental. In this sense, it emerges less as a formulaic model than as an approach to work organisation which broadens job design and challenges both hierarchical and horizontal demarcations in order to optimise levels of agility and innovation. It also provides the day-to-day context for enhancing the quality of working life.

Between these organisational spaces lie a number of more intangible and interpretive 'cultural' practices which both determine and are determined by the structure of work organisation. Communication, commitment and trust lie at the heart of sustainable change processes, and can be seen to lubricate or impede the process of organisational and service innovation.

These key organisational components interact with other dynamic contextual factors, notably new technologies. New technologies can broaden job profiles, increase the delegation of responsibilities to individuals and teams, widen the distribution of information, and increase the speed of product or service innovation. Technological change becomes integral to the process of organisational development, facilitating adaptation and adjustment in ways of working and learning. The challenge is to secure maximum coherence between technological possibilities and organisational needs rather than simply optimising the relationship between the machine and its operator.

As the model depicts, these issues overlap. For example, to support innovation through partnership and involvement, organisations may need to create 'design space' (Bessant, 1983) or organisational 'slack' (Boer, 1991). Engaging employees in partnership practices may occur independently of their work tasks, but wider participation in decision-making also may directly impact their task environment. The intersections between the change arenas, therefore, provide the opportunity to discuss the interconnectedness of change activities. The activities highlighted in these areas are suggestive, and there may be other issues which could be explored in these areas. In summary, the model is not intended to be prescriptive, but aims to be a framework in which change processes can be explored and in which the strategic choices of organisations can be visualised and deliberated.

This arena model makes clear that moving towards the high road is a complex matter. It shows that change is part of a complex interaction between internal arenas and external factors, and that during this change process many obstacles arise to cause delay, reversal and distortion. It is these obstacles which lie at the heart of the need for careful policy intervention.

Guide for the reader

Europe needs to find its way to the high road of work organisation, but how can this be achieved? To answer this question the Hi-Res-project team has chosen to analyse evidence of workplace innovation in both manufacturing and services and in both large and small organisations. This includes an examination of a cross-section of European research together with an analysis of data from more than one hundred and twenty case studies. Form this we can explore the following dimensions:
• Why change happens,
• The characteristics of workplace innovation,
• Obstacles to and sustainability of change,
• The benefits of change.

Running through these dimensions the following themes emerge as central to the discussion of work organisation:
• Knowledge, innovation and creativity
• Workplace partnership, involvement and participation;
• Job design and teamworking.

The report concludes with a clear set of challenges for policy makers, social partners, business support organisations, intermediate institutions and individuals.

Chapter Two

Current debates on new forms of work organisation

Current debates on new forms of work organisation

Introduction

Current debates on new forms of work organisation trace their origins back to at least the 1950s (Van Eijnatten, 1993). At European level there are several interconnecting national debates. The aim of this Chapter is to provide an overview which puts the high road of work organisation into context thus informing subsequent discussion of the challenges for policy makers, social partners and other actors.

The Chapter will provide an overview from three perspectives. Firstly there is a short assessment of the historical development of new forms of work organisation which builds on the brief description set out in Chapter One. This section traces the early history of work organisation debates through to the present. This history of new forms of work organisation begins with the writings of Frederick Taylor, one of the most influential management thinkers of the twentieth century (Taylor, 1911).

During the twentieth century different countries developed their own versions of taylorism. This resulted in different bodies of experience, and subsequently in different approaches to the emergence of new forms of work organisation. This second perspective looks at different national traditions and examines the connections between them. Some traditions cannot strictly be identified with a single country but they are characterised in terms of nationality here purely to avoid making the discussion unnecessarily complicated.

The third perspective looks at the facts. During the 1990s considerable efforts were made to provide a deeper insight into the spread of new forms of work organisation and their effects on productivity and working life. An overview of some recently published material is presented here.

This consideration of the history of new forms of work organisation, its development in different countries, and the evidence of its effect on productivity and working life will show that the debate has reached no conclusions. However it provides the context for the detailed analysis of workplace innovation developed in the following Chapters.

Historical background

Much current thinking and practice relating to new forms of work organisation is focused on the need to move beyond the principles of taylorism. Taylorism inspired many writers and managers during a large part of the twentieth century, and many authors have tried to improve on Taylor's ideas. New forms of work organisation, in contrast, reflect conscious efforts to develop alternative ways of organising work and improving organisational performance.

An American engineer, Frederick Winslow Taylor was amongst the first authors to understand that work organisation was the principle means of improving productivity and performance. He

focused attention upon the design of jobs and the work tasks of individual operatives. Up to that time, the organisation of work was left to the traditional practices which had grown up within the different crafts. Taylor was the first to develop a systematic and rational approach. In his thesis 'The Principles of Scientific Management' (1911), Taylor proposed a management system aimed at eliminating inefficient variations in work procedures by prescribing the 'one best way' of carrying out individual tasks. As workers became more proficient in their fragmented tasks, it was claimed that both management and operatives would benefit from the increased productivity that the method afforded. Underpinning Taylor's method was his belief in 'economic man'. This philosophy argued that workers were, first and foremost, motivated by pecuniary rewards and therefore overall improvements and efficiency gains in the production system would enable an individual to make more money. But the division of tasks did not only relate to manual skills. Taylor advocated that: 'All possible brain work should be removed from the shop floor and centred in the planning … department' (Taylor, 1911). Workers would concentrate on manual tasks, freeing up managers' capacity for intellectual activities; thus a deep chasm appeared between the conception and planning of work and its manual execution (Hague, 2001).

At first these taylorist principles were limited to production, but were later extended to personnel management. In the United States Taylor found an ally in Henry Ford, who had started to develop his own programme of workplace rationalisation. Ford installed production machinery and introduced work systems based on short-cycle times. Ford also recognised the potential of his employees as consumers, and promoted a company savings plan which employees could join to save up for a car for themselves. There were, however, draw backs to working for Henry Ford. The monotony of the work, combined with the high pace of working led to very high levels of labour turnover. New recruits to the company only stayed an average of three months. The Ford company spent $100 to train each worker and it is estimated that the high level of turnover was costing $3 million each year (Wilson, in Buchanan & Huczynski, 1997).

These extra costs have been the focus of discussions about taylorism. The central question was how employees could be motivated to perform within the constraints defined by Tayloristic approaches to production. A new brand of psychology, human relations, was developed to counter the adverse effects of taylorism and fordism. A series of experiments were undertaken at the Hawthorne works of the Western Electric Company between 1924 and 1932, under the supervision of Elton Mayo (Mayo, 1949). This work sought to find optimum workplace conditions, which were expected to result in increased productivity. The studies measured, amongst other factors, variations in illumination and rest periods. Despite the researchers' best efforts to maintain a controlled experiment, the results were unexpected. In the case of the illumination experiments, it was shown that productivity increased even when the lighting was reduced to extremely low levels. The experiment in the Bank Wiring Room showed how employees subscribed to 'group norms' in negotiating pay and performance, and has been widely commented upon. The groups neither shirked nor worked flat out, avoiding either incentive rate cuts or increased expectations of their productivity by management. These human relations studies were profoundly important in setting a new agenda for social research as they provided empirical evidence that factors other than financial reward were influential in determining human motivation at work. Indeed, the question of what forms the basis of human motivation and satisfaction has been the subject of much debate (Herzberg, 1966; Maslow, 1942).

The Hawthorne studies provided empirical evidence that work organisation and the creation of environments in which productivity was optimised could not simply be achieved through the analysis of individual accounts of work. Rather, the studies revealed that organisational behaviour

was, in part, shaped by the social activities and perceptions which needed to be understood within socio-historical contexts.

It was only later that theorists became critical of tayloristic principles and sought to develop alternatives. The first and main theorists who developed an alternative to taylorism were the socio-technical thinkers, members of the Tavistock Institute in England. Two seminal studies laid down the foundations of the Tavistock approach; those of a group working in the Durham coalfields (Trist & Bamforth, 1951) and of workers in the Indian textile mills (Rice, 1958). The two studies were important because they were amongst the first to show the interaction between social groups and the technology they worked with. These detailed accounts suggested that the technological arrangements did not determine the social systems within the organisation, which were instead developed through a process of local negotiation (Buchanan & Huczynski, 1997). These results contradicted the research findings of the technological determinists and instead proposed that the use of technology was at the discretion of social choice. However, the findings did indicate that while technology did not determine organisational structure it could still have an independent effect upon work organisation. The belief in a 'soft' technological determining influence has proved problematic for a number of academic commentators who argued that it 'underestimate[s] the significance of the interpretative component of human/technology interaction' (Grint, 1992).

However another important dimension of the Tavistock studies was that they demonstrated the merits of multi-skilled and semi-autonomous work groups. Prior to the introduction of new technology in the Durham mines study, miners worked in teams of two to six people and were relatively independent of management supervision. Trist and Bamforth described this method of working as 'responsible autonomy'. With the introduction of the 'longwall method' of mining coal, these small teams were disbanded and were replaced with three shifts of up to fifty people. The introduction of the longwall method, with automatic cutters and a moving conveyor, was expected to improved productivity. However, this was not the case and the study inferred that the specialisation and division of labour advocated by the method had a negative effect on morale and was the cause of absenteeism. At another pit, workers rejected the new method and had developed their own 'composite longwall method' of mining coal. While the numbers in the workgroup were larger than before - around twenty-five members - the miners retained discretion over their working arrangements and restricted the division of labour.

Similarly, in the studies that Rice undertook in the textile sheds of the Ahmedabad Manufacturing and Calico Printing Company it was observed how multi-skilled workers organised themselves into self-selected groups. Rice had observed that work, while not divided, was arbitrary and suggested to the management that production efficiency could be gained if teams of up to approximately six to eight people were responsible for a specific set of looms. Before the management could implement Rice's suggestion, it was observed that operatives organised their own teams which subsequently resulted in large productivity gains.

These studies are important because they provided the foundations for 'an eager and enduring embrace' by organisational theorists of the definition, development and dissemination of group working and teamworking, in particular (Buchanan, 1997). They also provide an account of how innovation in work organisation emerged through experimentation and negotiation. With these studies, socio-technical thinking has laid the basis for new forms of work organisation in theory and in practice. With socio-technical thinking, the human factor has become central for competitive advantage. In recent years there has been a general 'rediscovery of the human factor' (Coriat, 1995)

and much discussion on the means to improve competitiveness through the utilisation of workers' knowledge, experience and creative capabilities, which are recognised as vital components in creating competitive advantage (Hamel & Prahalad, 1996; Porter, 1985).

Most of these ideas are now commonplace, so in this sense, taylorism has been overcome. From a managerial perspective, however, it appears that while many managers are recognising the weaknesses of traditional forms of work organisation, they are attempting to 'patch' the fundamental flaws in their organisations with a perplexing array of short-term solutions. Organisations are being downsized, made flatter and leaner. Workers are being multi-skilled, empowered, made contingent and encouraged to be team players. Manufacturing strategies in use include business process re-engineering, just-in-time and total quality management. From this multitude of concepts, it is difficult to distinguish new forms of work organisation from 'low road' initiatives and to see the advantages of different forms of working. The complexity of the issues makes if difficult for managers and workers to select the 'right' road forward.

New forms of work organisation in Europe – a comparative analysis

The second part of this analysis examines different national patterns relating to the emergence of new forms of work organisation. These differ from one another not only in context, but also in theoretical underpinning. The question is whether researchers with such diverse theoretical positions can find common ground or share a vocabulary.

Whereas in the USA and Japan the 1980s and 1990s were dominated by 'quality' thinking (Lillrank & Kano, 1989), just-in-time practices (Schonberger, 1982; Womack et al, 1990) and business process redesign (Hammer & Champy, 1994), some European researchers and managers focused more on new forms of work organisation based on human capacity. This comparative analysis emphasises the differences and connections between national perspectives. The cases which follow have been selected to illustrate principal strands of theory and practice, and are not intended as a comprehensive account of developments in Europe.

The Norwegian 'lead': industrial democracy and job redesign

We have seen that taylorism and fordism aroused a great deal of intellectual effort in opposing its core concepts. The writings of the Tavistock school have been discussed in the previous section (see also Van Eijnatten, 1993 and Ciborra, 1993 for different perspectives on this school). The industrial democracy or quality of working life (QWL) movement, and the job redesign school, represent other important European attempts to challenge taylorism.

It was the quality of working life movement that really promoted the active role that employees could have within the workplace. It is generally recognised that the QWL movement began with the work undertaken by the Oslo Work Research Unit within the Norwegian Industrial Democracy Programme. With the help of the Tavistock Institute a number of programmes were developed in Norway to improve worker participation, not merely at boardroom level but through all levels of the enterprise. The Norwegian activities and subsequent QWL initiatives were greatly influenced by open systems thinking, and the development of the socio-technical approach, pioneered by researchers at the Tavistock Institute in London.

Influenced by the research of the Tavistock Institute, the Norwegian Industrial Democracy Programme first attempted to apply socio-technical principles to job redesign (Emery, 1963; Emery, 1969). The development of 'jointly optimised' organisations through the use of socio-technical design was undertaken within a broader dialogue on workplace democracy occurring in Norway at that time. These experiences quickly spilled over to neighbouring Scandinavian countries. Swedish social partners were prompted by these experiments in the 1970s to explore socio-technical methods in developing new forms of work organisation. This was part of a larger union movement for the democratisation of working life developed under the slogan 'From consultation to co-determination' (Sandberg, 1992).

The job redesign school worked on the assumption that the alleviation of monotonous work tasks would improve worker performance and reduce absenteeism, high labour turnover and industrial unrest. Strategies aimed at changing job content included:

- Job enlargement - which sought to increase the variety of work by horizontally combining fragmented tasks. This could be achieved by training workers to become multi-skilled so that they were able to move away from the monotony of specialised, short-cycle tasks. Job enlargement could also be created through job rotation.
- Job enrichment – which focused on increasing the vertical control employees have over their work by reclaiming some of the indirect tasks of supervisors and support staff, and sought to provide increased opportunities for decision-making, planning and monitoring of work.

The 'humanisation of work' programmes described below subsequently provided a solid foundation and a broad inter-disciplinary knowledge base upon which to develop the concepts of new forms of work organisation further.

Sweden: the 'Scandinavian model'

From a European perspective, the Swedish model of work organisation was more influential than the Norwegian quality of working life project. One of the most famous examples of the 'Swedish' or 'Scandinavian' model of work organisation was developed by social scientists and engineers at the Volvo Kalmar and Uddevalla plants. Mainly due to problems with tight labour markets, Swedish managers were open to social experiments within work organisation. Teamwork and job improvement were seen as a means of improving the quality of working life so that more workers would be attracted to the shop floor. Soon a whole range of Swedish companies started experimenting with new forms of work organisation. The projects were well documented by the scientific community and attracted many foreign researchers. These first projects were mainly influenced by socio-technical thinking (Tavistock Institute) and the Norwegian experience. At the beginning of the 1980s, the Swedish scientific community initiated large scale change processes in a broadly based societal context with the concept of democratic dialogue at their heart. The goal was to give change processes a broader base within companies, mainly because previous projects and programmes had lacked sufficient backing by management and workers (Van Eijnatten, 1993).

One of the initiatives adopted was the creation of the action research community in which experiences on new forms of work organisation were exchanged. The Swedish LOM Programme (leadership, organisation and co-determination) was an effort to exert a conscious social influence on the working environment. Between 1985 and 1989, organisational restructuring was introduced in some 150 companies (Gustavsen, 1992). This programme took as the conceptual premise for its development work the idea of democratic dialogue, in which every individual at the workplace has the right to participate on an equal footing. These projects operated across regions,

so change processes engaged networks of companies or institutions. According to Engelstad & Gustavsen (1993) several regional networks demonstrated lasting success.

This LOM programme was followed by a new work life programme, aimed at all Swedish companies. Employers, government and trade unions agreed to create a one-off tax to collect money for the introduction of new forms of work organisation. This money was allocated to the Swedish Working Life Fund. With subsidies from this fund, job improvement was introduced on a massive scale. One of the features of this programme was the 'broad mobilization of the workforce in the process of change' and these experiments were evaluated by several research groups. However the main principles of democratic dialogue were not central to this new work-life programme; companies or institutions initiated their own participative approaches to new forms of work.

But while these experiments were in progress Sweden was confronted with a serious economic downturn. The production systems at Kalmar and Uddevalla were dismantled, enabling critics to question the effectiveness of the Scandinavian approach. While simplistic accounts suggested that the demise of these iconic forms of work organisation illustrated a failure of the QWL movement, others pointed to contextual factors which had been far more influential than methods of work organisation in the closure of the plants (Cressey, 1993; Sandberg, 1994). Somehow job improvement stayed at the forefront during this unemployment crisis, but now from a different perspective. The T50 programmes conducted by ABB showed that an increase in throughput (and thus performance improvement) could only be achieved by asking workers what to do. In Sweden interest in new forms of work organisation has now revived, and there is a desire to learn from experiments in other countries.

Finland, among all the Scandinavian countries, seems to have been the most thorough in its attempts to improve work organisation. The Finnish Ministry of Labour has supported several job improvement programmes since the middle of the 1980s. In 1988, the JOY project (leadership, organisation, cooperation) started, mainly inspired by the democratic dialogue projects in Sweden. This programme was followed by several action oriented programmes (for example, the municipal quality project). Since the middle of the nineties new national workplace development programmes have been launched. Blue-chip companies and front-line public bodies have been encouraged to improve their performance and the quality of working life, while taking the interests of management and personnel into account. Research on the outcomes of these initiatives was encouraged from the start. Over 40,000 people are involved in projects under the programmes, around two percent of all employed people in Finland. The programmes aimed to achieve favourable external effects by encouraging co-operation between workplaces at project level and between projects, and also by disseminating information on project in progress and on the results and experiences on completed projects (Alasoini & Halme, 1999). Several English publications have been produced to give more international publicity to these experiments. One important precondition for the continuing success of these Finnish programmes is the extent of corporatist cooperation. Government and social partners fully support the goals of these programmes, an advantage not always enjoyed in other countries.

Germany: humanisation of work programmes
Scandinavia was not the only part of Western Europe to develop quality of working life activities in the 1970s. Germany, for example, experienced a succession of programmes to foster and manage efforts to improve working life, though these were also expected to contribute to the

modernisation of the economy. Initially such policies reflected the social conflicts at the end of the sixties, and subsequently the effects of the world economic depression in the middle of the seventies. The latter triggered a transformation of industrial work, and in its wake a crisis for taylorism and the transformation of fordist mass production.

The industrial context in Germany was quite similar to that in Scandinavian countries, especially Sweden and Norway. There was a system of balanced industrial relations cemented by a broad range of laws and rules. On the company level the works councils, directly elected by the shopfloor, had rights of co-determination and participation in social, personnel and economic questions including changes to work structures resulting from technologically driven investments. These far-reaching rights were explicitly codified in the Betriebsverfassungsgesetz (Works Constitution Act) of 1952, amended in 1972 and extended after 2000. Both parties in the labour market were conscious of the need to design work conditions based on scientifically proven knowledge and industrial experience. This co-operation between management and workers was not however always shared by the research communities in Germany.

After the second world war the German scientific communities strongly distrusted taylorism. The mainly critical and marxist view of work organisation changed at the beginning of the 1980s when empirical results from Kern & Schumann (1970; 1984) showed that the main industrial sectors were capable of hosting new production concepts in which workers could develop their competencies and working lives. This provided the social context for a succession of public policy programme activities, from 'Humanisation of Working Life' in 1974, via 'Work and Technology' in 1989, to 'Innovative Development of Work – the Future of Work', sponsored by the Federal Ministry of Education and Research and supported by the Ministry of Labour and Social Affairs. Continuous programme activities supported hundreds of projects for developing new forms of work organisation with a strong social research commitment (Oehlke, 2001). Dominant critical perspectives, which argued that conditions of work inevitably deteriorate during economic change, were challenged in thorough and controversial debates mainly led by the independent social research institutes in Göttingen (SOFI) and Munich (ISF).

But with increased competition resulting from liberalised markets, the diffusion of new production concepts built on enlightened collaboration between employers and unions is facing increasing challenges from a 'new realism' in which new forms of work organisation co-exist with outward processing to low cost countries, numerical flexibility and deregulated patterns of employment. Social partner consensus around support for workplace innovation has eroded, with consequent implications for the policy framework and support infrastructure.

The Netherlands: Dutch modern socio-technical systems design

Dutch job improvement efforts started in the 1970s, a continuation of the productivity programmes introduced from the 1950s onwards. It was only towards the end of the 1970s that job improvement was advanced as a new goal within these programmes. Dutch researchers such as De Sitter were particular inspired by the Swedish experience. Soon Dutch companies started to experiment with 'werkstructurering', the Dutch version of the job redesign movement. Researchers developed a separate version of the socio-technical systems, linking the thoughts of the Tavistock School to German systems theory (Luhmann). In contrast to the static and partial nature of the classical socio-technical systems design of the Tavistock Institute, De Sitter launched modern socio-technical systems design theory based on the 'balance model'. In general, this 'balance model' stipulates that an organisation's capacity for control should match the need for

control imposed by the external environment (Van Eijnatten, 1993). Main design variables were the production and the control structures within the organisation. High quality jobs should contain a balance between functional requirements and the employee's ability to exercise control over the working environment (Vaas et al, 1995).

The experiments secured the attention of the Ministry of Social Affairs, which often supported changes in work environment laws to improve the quality of working life (Pot et al, 1989). An overview of research themes and results was produced by Maarten van Klaveren (1994). In contrast to other countries, Dutch scientists tried to develop a clear theory and explicit design sequence rules.

France: the importance of wider employment relations

The political and social climate is very different in France. In contrast to Germany few French workers are unionised; those that are unionised tend towards radical views and relations with employers are often confrontational. Quality of working life measures are delegated to national agencies, principally the Agence Nationale pour l'Amélioration des Conditions de Travail (ANACT). Another difference between France and many other European countries is the significant impact the state has on production and business. The most recent example of such influence was the introduction of the 35-hour week, a law adopted with little reference to the carefully negotiated collective agreements in different sectors of French industry.

French employers have strongly supported taylorist ideas for a long time (mainly through the ideas of Fayol). French researchers, on the other hand, were strong critics of the bureaucratic tendencies of taylorism (Crozier, 1964). In contrast to other countries, discussions on work organisation have always been approached from a social perspective (see especially Robert Boyer, 1986; Benjamin Coriat, 1990). The French critique of taylorism emphasises that new forms of work organisation can only be brought about by changing wider employment relationships in the economy.

The Gerpisa network (Lung, 2001) which has secured financing for thorough research on new forms of work organisation in the automotive industries, is now a focal point for debates on work organisation in France. However, unlike the counterparts in some other parts of Europe, French researchers typically act as detached observers rather than as active participants in supporting workplace innovation.

United Kingdom: beyond the lean organisation?

The only Northern European country which did not promote a similar period of experimentation was the UK (Geary & Sisson, 1994). Despite the successes of the Tavistock Institute in the 1950s and 1960s, workplace innovation remained the prerogative of the individual company and the research community. In 1974 however a conference was organised by the Social Science Research Council which sought to learn from the Scandinavian experiences on work organisation, and following this event a working party was established to investigate issues in work organisation research (SSRC, 1978). The SSRC reports advocated significant funding to aid research though this was only supported in part (Brown, 1992). At that time, the modest Work Research Unit was established within the employment ministry, but was disbanded during the 1980s (Cressey, Dietz, & Shapiro, 2000). During the 1970s the Tavistock nonetheless secured some funding to develop participative design approaches within companies (Van Eijnatten, 1993).

Successive Conservative governments (1979-1997) shared the US position that workplace

innovation was a matter for individual employers rather than public policy (Burnes, 1996). It is therefore no surprise that UK organisations have been more influenced by 'low road' models such as lean production than other countries. This has been reinforced by the enthusiasm for Japanese practices amongst British managers, partly the result of extensive inward investment into the UK from Japan during the 1980s and 90s. The high penetration of US management literature and thinking is also notable in the UK.

In the last five years there seems to have been a gradual acceptance of the need to support the emergence of new forms of work organisation, including active measures instigated by social partners though with limited support from government. The creation of the UK Work Organisation Network (UK WON) as a national coalition to promote workplace innovation should be seen in this light (Ennals, Ford & Totterdill, 2002).

Italy: industrial districts

Unlike Northern Europe, most Southern European countries have seen little in the way of debate or intervention around the humanisation of work. Rather the emphasis, particularly in Italy, has been on the emergence of highly flexible, adaptive and localised clusters of very small firms – the 'industrial districts' - in several regions. A high proportion of Italian industrial activity is organised in local specialised productive systems in sectors such as, clothing, footwear, leather goods, hosiery, goldsmithing, ceramics, furniture and the manufacture of specialised machinery (Becattini, 1998). This Italian model is only weak in the high tech and science- based sectors (Viesti, 1997).

Italy is not the only country in Europe with a high incidence of small and medium firms, but the concentration of these companies in industrial districts is particularly marked. Companies co-operate in systems characterised by high levels of specialisation and rigid divisions of labour between enterprises. The result is that industrial districts are highly versatile and flexible. Within districts, the links between firms, institutions and local know-how give rise to a range of external economies. The high division of labour is combined with a culture combining co-operation and competition: individual firms can be in competition with each other but work together to identify collective solutions to common problems. Differences between districts can be remarkable however, influenced by a range of contextual and institutional factors such as the level of intervention by social actors and policy makers.

Industrial districts are known for their innovation, both in terms of product development and strategy. In the last decade the Italian industrial districts have shown an impressive capacity for structural and strategic re-adjustment as a result of the global challenges facing the economies of advanced countries. Restructuring has followed different courses however. For example not all the districts have pursued strategies characterised by de-localisation and outward processing. Such strategies seem to be more appropriate for companies at the lower, price-sensitive end of the market. In contrast the focus in many districts has been to enhance competitiveness through innovation and quality.

An emerging tendency amongst companies in industrial districts is to increase both the level of vertical integration and the hierarchical nature of the supply chain. A growth in the number of larger companies, often through merger and acquisition, is offering greater stability, stronger links between industrial and service activities, and strategic alliances within firms from outside the territory.

In terms of work organisation such districts appeared to promise the re-emergence of craftworking. This thesis was mainly propounded by Piore and Sable (1984) in their theory of 'flexible specialisation'. Not all commentators agreed however: "As regards the patterns of work organisation seen in small firms, recent research shows a major fragmentation of functions. This is not to say that the industrial structure in such cases will no longer be based upon craft production, but simply that the observable trend is not towards any intensification of the 'flexible specialisation' model. In contrast, the division of tasks between executive and conceptual activities appears to become even more defined" (Belussi & Garibaldo, 1996). In short, there appears to be considerable scope for further research into work organisation and working lives in industrial districts.

Ireland: partnership-based approaches to workplace innovation

In Ireland the debate on new forms of work organisation was initiated during the mid-1990s. A tripartite accord between government and social partners prompted the start of several pilot projects seeking improvement in the quality of working life through workplace innovation. The social partnership model underpinning much of the emergence of new forms of work organisation in Ireland developed over a period of seventeen years, and is embedded in the national partnership agreements which have governed pay, welfare, and taxation policy since 1987. Significantly these national agreements have had a central role in promoting work organisational reforms, partnership development and enhanced workplace relationships. The tripartite accords between government and social partners supported pilot projects in which improvements in competitiveness, employee relations, and quality of working life were key objectives. The New Work Organisation in Ireland programme (Savage, 1999), designed and implemented by IPC in partnership with the Irish Business & Employers Confederation and the Irish Congress of Trade Unions, epitomises the effort by social partners to advance partnership-based approaches to workplace innovation in Ireland.

Lessons and issues from these programmes

For a considerable time the Tavistock and Swedish experiences were regarded as the starting point for debate about new forms of work organisation. Subsequent discussions have drawn heavily from these approaches. The following lessons can be extracted from these experiences:

- Europe has seen the emergence of a coherent and distinctive approach to new forms of work organisation, shared principally by the Scandinavians, Dutch and Germans, though also evident in other countries. The main inspiration lay with the Tavistock experiments of the 1950s. Starting with a few pilots, countries have experimented with national programmes to help develop new forms of work organisation. In France, Italy, the United Kingdom and elsewhere such experiments have been absent or, at best, limited to a few isolated cases. Ireland and the United Kingdom have only recently begun to establish capacity to help develop new forms of work organisation.

- There is evidence of clear theoretical and methodological development in the approach to new forms of work organisation in Europe, though this seems to have stopped in the middle of the 1990s. From several expert-led pilots, a number of participative approaches were developed, notably the 'democratic dialogue' experiments in Scandinavia. Such approaches were particularly successful in development projects at both the regional (Sweden) or national (Finland) levels.

- A further, and perhaps broader, attempt to underpin the emergence of new forms of work organisation in theoretical terms can be found in Dutch modern socio-technical systems design. These theoretical steps identified in the Dutch approach give companies and social partners clear 'handles' to support workplace innovation.

The demise of the Swedish car manufacturers has been paralleled by the demise of the debate in that country. The current context is dominated by the emergence of lean production while the focus on quality of work has rather faded from both theory and practice - even though at EU level the topic is now at the centre of labour market policies (European Commission, 2002). While the economic crises of the 1970s prompted experiments with new forms of work organisation, the economic crises at the beginning of the 1990s seem to have brought these experiments to a halt.

One explanation is that the rapid rise to prominence of low road models such as lean production confused the debate on new forms of work organisation. Social partners and government simply became unclear about what to support. In other Northern European countries social partner consensus around workplace innovation dissipated during those years and the infrastructure necessary to conduct such experiments was eroded. The locus for the introduction of new forms of work organisation reverted to the individual company.

The fragmentation of debates within the different member states provides a compelling reason for new levels of dialogue and action at the EU level. The diversity of perspectives and experiences within Europe offers a potentially powerful resource for shared learning and innovation, as well as for collaborative action.

The impact of new forms of work organisation

The previous section shows that the provision of frameworks and measures by governments and social partners to support workplace innovation is limited in Europe. There is hesitation about what to do and about what types of intervention are appropriate. This section reviews and summarises existing research about the emergence of new forms of work organisation. We first look at the spread of new forms of work organisation across Europe. Secondly we examine the relationships between new forms of work organisation and technology (particularly information and communication technology), productivity and quality of working life. This provides the background for the examination by subsequent Chapters of the case study data, and the identification of challenges for public policy makers, social partners and other actors.

The spread of new forms of work organisation

One special feature of the debate on new forms of work organisation is lack of data. Most research findings focus on the micro-level, based on pilots and case studies. Less information is available on the overall incidence of new forms of work organisation. The need for data was accentuated by the results of the 1984 Kern & Schumann study in Germany. These authors collected evidence on new production concepts within three industrial sectors, attempting to prove that the new figure of the 'system regulator' (the highly specialised craft worker) was rising in importance. Companies used 'new production concepts' which resulted in a new approach to human capital. Kern & Schumann's data and conclusions were extensively criticised however: the main reaction was that there was a need for more representative data and an appropriate methodology to analyse the development of new forms of work organisation. According to the OECD (2001) only two

surveys have been designed for the purposes of cross-country comparison: EPOC (Employee Participation & Organisational Change) across ten European countries and Nordflex in four Nordic countries. In addition several national surveys have provided further insight into the dissemination of new forms of work organisation (Greenan, 2000; Dhondt & Kraan, 2001). The OECD reports that some common themes have emerged from these surveys:

First, a significant number of respondents report that their firm is adopting new systems of production – though these practices are not yet found in the majority of enterprises. Thus according to the EPOC survey (European Foundation for the Improvement of Living & Working Conditions, 1998) some 14% of establishments in the European Union countries had decided to downsize production, 23% had decided to outsource certain activities and 13% had adopted a 'back to core business' strategy. Likewise, in 1998, the incidence of just-in-time production systems was 23% in the United Kingdom and 36% in France, while it was 9% in 1995 in Australia and 7% in 1998 in the Netherlands. Finally, in 1996, best-practice arrangements such as benchmarking were used in 20% of surveyed firms in the United States but 46% in 1998 in the United Kingdom. Another approach is to adopt quality management methods as recommended by public agencies such as the International Standards Organisation (ISO). In 1998 about 29% of workplaces had an ISO certificate in France while the figure was 24% in the United Kingdom. In the Netherlands the figure stood at 12% of Dutch companies.

Second, teamwork and practices which aim at greater proximity between management and labour have been adopted on a much larger scale than is the case with new systems of production. Teamwork should however be seen in conjunction with job improvement measures such as job rotation, or task improvement or enlargement. The rate of adoption of practices which can be accommodated with relatively little change in the overall work organisation structure, such as suggestion schemes and weakly autonomous teamwork, is substantial. EPOC revealed that while there was widespread evidence of direct employee participation, there was a higher incidence of individual consultation than participation through representative structures. The rate of diffusion is somewhat lower in the case of practices such as autonomous team-working and employee involvement in decision making, which imply a sizeable departure from the traditional work organisation model.

The OECD reports that about 90% of large companies in the United States have suggestion schemes and survey feedback, whereas self-managing work teams and mini-business units exist in 78% and 60%, respectively, of those companies. In the United Kingdom, information-sharing schemes that can be easily incorporated into the existing organisational structure such as use of the management chain/cascading information or regular meetings with the entire workforce, are more widely diffused among workplaces than is the case of autonomous team-working. In France, work groups with weak discretion such as quality circles and project groups exist in 49% and 57% of firms respectively, compared with 37% in the case of autonomous production teams (Favre et al, 1998). In Finland, individual autonomy exists in up to 46% of surveyed firms, while team autonomy exists in a maximum of 16% of these firms. In the Netherlands, some 57% of companies have attempted some job improvement measures. Only 18% of the companies had introduced a combination of such job rotation, task improvement or enlargement.

Evidence that the proportion of firms adopting new work practices may be on the increase is contradictory. The OECD finds that in Australia, France, the United Kingdom and the United States, the rate of adoption of each practice (except quality circles) has risen. In 1998, only around 14% of Dutch companies had introduced new forms of work organisation, new technologies and

new supplier relationships. New models are not limited to particular sectors, but it is clear from the data that very few small Dutch companies have adopted new forms of work organisation. By 2002 these figures had risen slightly, which suggests that new work practices are on the rise in the Netherlands. In the United States, self-managing work teams and mini-business units are the two forms of work organisation showing the highest growth in the diffusion rate among the largest companies. In France the number of project groups, autonomous production teams and ISO certifications of work practices have risen rapidly between 1992 and 1998. Despite their low incidence, practices aimed at encouraging workers' participation in managerial matters are increasing (see the above figures concerning self-managed team and mini-business units in the United States, autonomous production teams in France and information sharing about investment plans in the United Kingdom).

NUTEK compared Swedish surveys from 1991 with 1997 (NUTEK, 2000). The study shows that the 'high road of work organisation' is still the exception in Sweden. Only a minority of Swedish companies have invested in work organisation measures, conflicting with popular notions about Swedish work places and the influence of the Swedish work programmes. The analysis indicates a tendency towards a lower incidence of decentralised work organisation and of personnel development in 1997 compared with 1991. It would seem that in Sweden the 'high road' is losing ground. In addition, EPOC suggested that there was little evidence in Europe of the adoption of the 'Scandinavian' model of team working. While the majority of companies surveyed combined elements of both lean production and Scandinavian approaches, the majority of new working practices had characteristics closer to the former. Other survey data from Europe and America seem to agree with these findings (see Hague & Aubrey, 1999; NUTEK, 1996; Osterman, 1998). The conclusion from the OECD that a significant transformation in workplace decision making is taking place in some OECD countries may be premature.

ICT and workplace innovation

Even though the rise of new forms of work organisation may be limited, interest is likely to continue in the coming years. Ducatel and Burgelman (1999) identify several reasons why organisations need to be flexible: greater volatility of demand, shortening product life cycles, the increased use of outsourcing, global competition, the growth of the service sector and rapidly changing technologies and rising skill levels. Even in times of economic crisis there is no reason to expect that these factors are changing or having a lesser impact on organisations. Certainly the dissemination of new information technologies is increasing and will continue to drive workplace innovation.

Since the early days of the factory system, technology has been used in pursuit of a 'low-road' strategy based on deskilling and disposing of 'unreliable' labour. The use of automation to remove routine jobs remains widespread, not just in manufacturing but increasingly in services (Collins, 2002a). Likewise technology is also used to remove dependence on human skills through deskilling and the removal of job content. Yet technology also offers 'high-road' possibilities based on upskilling, facilitating communication and supporting empowerment. In the information-based economy most of the human labour force handles information. In a manufacturing company Lennart Forsebäck (1997) found that only 3% of total production time was spent on the actual manufacture of the product. The remaining production time was accounted for by presales, order management, construction, specification, planning and delivery. This increasingly complex process entails the monitoring and programming of the entire production cycle, making it possible to obtain an unprecedented level of information. Information technologies designed for this purpose help

companies to make better use of new forms of work organisation. Information and communication technology (ICT) requires the use of higher qualifications and new qualifications covering both knowledge and skills. New qualifications may be needed because the work is more abstract and theoretical, and requires a higher degree of literacy.

The OECD finds that there is considerable evidence that new work practices are introduced hand-in-hand with new technologies, notably ICT:

"To the extent that ICT is an engine of economic growth, evidence suggests that organisational change is a major factor behind recent growth. Firstly, in all countries for which data is available, the incidence of the use of ICT in firms that introduce new work practices is much higher than is the case in firms that do not introduce these practices. Thus, in the United States, 58% of non-supervisory workers in firms that introduce new work practices use computers, which is 9 percentage point higher than in the case of firms that do not introduce new work practices. Similarly, the average difference in ICT use among firms that use and do not use new work practices is 15 percentage points according to a survey conducted for the European Union, and 10 percent points in both Australia and Finland.

Secondly, it appears that new individual practices are generally associated with a high incidence of ICT use:
- In all countries for which data is available, employee involvement schemes are strongly associated with ICT use. This relationship may reflect the fact that ICT facilitates information flows among staff (notably between management and front-line workers), and employee involvement schemes are one way of exploiting this possibility.
- Team-working is also associated with a relatively intensive use of ICT. This suggests that team-working and ICT complement each other. ICT facilitates the creation of networks, both formal and informal, while the presence of well-functioning teams provides a justification for introducing ICT.
- Data for Finland shows that team autonomy is more strongly associated with ICT than is individual autonomy, which could mean that the relationship between team-working and ICT is weaker when individuals are given autonomy without at the same time introducing teamwork schemes.
- Similarly the incidence of ICT use is higher in firms that introduce new production systems than in firms that do not introduce such systems. The rationale behind this result is that changes in production systems are often associated with the introduction of team-working and employee involvement schemes – which, as just discussed, are strongly related to ICT. There is evidence that firms which have modified their production system, without simultaneously introducing team-working or employee involvement schemes, tend to be relatively weak users of ICT.

Finally, a link between new work practices and ICT can be established across companies by examining evidence for European countries for which comparable data on organisational change exist. The incidence of new work practices is proxied by the average rate of diffusion across a range of indicators, and appears to be strongly correlated with ICT expenditure as a share of GDP." (OECD, 2001).

The correlation between ICT and new forms of work organisation is encouraging, but there is no guarantee that ICT will be used in ways compatible with new forms of work organisation. Access to information can be restricted to managers or it can be made available as a powerful resource to support problem solving and incremental innovation at all levels of the organisation. Companies

need to be conscious of organisational design possibilities when introducing new technologies. Emergent ICTs have the capacity to develop new organisational forms. Collins (2002b) describes a number of uses of ICTs. Workflow systems, whereby computer software is used to automate standard procedures, were used by a local authority to handle the sale of public housing and by an insurance company to deal with the legal aspect of granting mortgages. In both cases employees were freed from routine work to fulfil other duties, coping with increasing workloads without the need to employ extra staff. The manager at the insurance company who was brave enough to pioneer the new approach eventually lost his job because the new system had reduced the need for managerial input.

ICT is also used to facilitate communication with and between remote field teams in the utilities sector. In other cases such technologies support teleworking from home or other remote locations as a mechanism to reduce employee commuting and promote family friendly work practices. These technologies have the potential to enhance flexibility for the benefit of the employer and employees, though as the European Commission and social partners have acknowledged, good practice measures are required to ensure the full integration of remote workers within the wider organisation (Commission of the European Communities, 2001).

Collins investigated whether it is possible to use ICT to encourage teamwork and collaboration. She found that ICT may be used in this way, since it can distribute information to the lowest levels within the organisation, empowering workers to deal with customers' requirements, for example, without recourse to a manager. But although new technologies can be used for this purpose, it is clear that many organisations are actually using them to monitor and control their workforces. However much empowerment is sought, IT policies that encourage cost reduction and managerial control still dominate many organisations, Collins concludes. Teleworking and other forms of remote working, far from enabling family-friendly working, may make it impossible for employees to escape from their work since their employers may expect them always to be ready to respond to instructions sent via e-mails or mobile phone text messages.

ICT also enables a closer integration of companies with suppliers, customers and business partners, giving employees the opportunity for much wider interaction with the internal and external work environment. The emergence of 'virtual organisations' has been widely heralded. There is no one definition that covers this range of activities, but Byrne (1993) summed up the general consensus as follows:

"A virtual corporation is a temporary network of independent companies – suppliers, customers, even erstwhile rivals – linked by information technology to share skills, costs and access to one another's markets. It will have neither central office nor an organisation chart. It will have no hierarchy and no vertical integration."

In part this describes the emergence of complex, adaptive supply chains resulting from sophisticated ICT-based systems (NOMISMA, 2002; see also Collins & Plüss, 2002 for an innovative case study example in Northern Switzerland) and sometimes involving employees at all levels in inter-organisational teamworking. In technologically demanding product areas multi-company R&D can provide an effective means of bringing together the complementary knowledge and experience of different workforces, opening innovative possibilities for inter-organisational teamworking.

Flexibility of working is pivotal, and ad hoc or short-lived alliances can certainly give competitive advantage to the participants. However it is important to recognise that virtual organisations are not always temporary alliances. Virtual organisations are based on the premise that co-location need no longer be the sole determining factor, and that arrangements such as virtual call centres (for example) can be quite long-term. There is certainly a need to move away from traditional organisational structures towards partnership based on new business models, even though organisations completely lacking in hierarchy and vertical integration are hard to find (Collins & Plüss, 2002). Apart from its immediate market benefits, the virtual organisation can be an arena for knowledge management. Mutual learning helps companies to identify and strengthen core competencies and facilitates exchange of experience. Partner companies gain access to production information and can acquire new competencies in communication and co-operation.

New forms of work organisation and productivity

Several studies which have investigated the relationship between new forms of work organisation and productivity outcomes are summarised below:

Table 1: New forms of work organisation (NFWO) and productivity.

Source	NFWO	Effect on productivity
NUTEK, 1996a	Investments in work organisation and skills development	- significant improvement in competitiveness and work environment in enterprises
ITPS, 2001	Learning strategies Competence development	- correlate with learning and competitiveness - indicator that has had the single greatest effect on a company's productivity
ITPS, 2001b	Decentralized work organisation giving greater powers and responsibilities to employers	- 3% increase in productivity - 16% increase in profits
Lay, Shapira, and Wegel, 1999	Extensive use of new forms of work organisation (NFWO) such as teamwork, continuous movement and just-in-time production system Integrated new practices into new work 'systems'. Companies using at once simultaneous engineering, inter-departmental development teams, co-operation with suppliers, and continuous improvement	- 8-30% increase in labour productivity (defined as added value per person) - greatest productivity benefits - more than twice as likely to introduce innovative products
Business Decisions Ltd, 1999	NFWO	- improved company performance
EFILWC, 1998	Use of advanced forms of group delegation (such as self-directed teams)	- 65% of managers believed it believe it led to reduced throughput time

Cully et al., 1999	16 new management practices and employee involvement schemes	- led to rising levels of productivity
Government of Finland, 1996a; Government of Finland, 1996b	'Traditional' workplaces 'Flexible' workplaces	- 3% introduced new innovative products in the past three years - 37% introduced new innovative products in the past three years
Greenan and Guellec, 1996	Companies using NFWO	- more likely to innovate and to be more effective users of R&D
Black and Lynch, 1997	Unionised firms with new work practices Greater empoyee voice in decision-making rather than total quality management Unionised firms which adopt new work practices and use computers Unionised workplaces without employee involvement schemes	- higher than average performance - matters most for productivity - labour productivity is estimated to be 20% higher - labour productivity is 15% lower
Huselid, 1995	The greatest use of new work practices designed to build employee capabilities and motivation	- highest rate of increase in sales turnover
ITPS, 2002a	Companies which co-operate Enterprises that co-operate with others over a wide geographical area Enterprises that have improved the efficiency of their information functions with the aid of information technology	- 4-5% higher productivity - 4% increase in productivity and 10% higher profits than those that do not co-operate with others at all - 4-6% higher productivity and 10% higher profits respectively than those that have not done so
Capelli & Neumark, 1999	New work practices	- a positive relationship with labour productivity, Tobin's q (the ratio of the market value of a firm to the replacement value of its physical assets) or rates of return on investment
Addison et al., 2000; Crockett, 2000; Ramsey and Harley, 2000	New work practices	Australia and the United Kingdom; managers' self-evaluation: higher-than-average labour productivity, financial performance and product quality

This review of the available studies suggests that there is a positive relationship between new work practices and firm-level performance. Most of the evidence is based on qualitative data, but more quantitative studies show productivity differences ranging between 3% and 30%. Companies with new forms of work organisation also achieve higher rates of innovation and higher profits. This overview confirms Kling's (1995) review of the US research in this area. The most consistent finding from the evidence is that new work practices are associated with improved firm performance only when practices are implemented as a bundle – and not separately. In other words it is the entire system of new practices that brings about efficiency gains, not each individual component of this system introduced in isolation. This is probably due to the complementarity existing between different kinds of practices. There is also a complementarity with information technologies.

ICT, new forms of work organisation and productivity

Productivity gains are particularly large when new work practices are introduced in conjunction with ICT. ICT is a driver for new forms of work organisation, but it can also help to improve the productivity of companies.

Table 2: ICT, new forms of work organisation (NFWO) and productivity.

Source	ITC and NFWO	Effect on productivity
Askenazy and Gianella 2000	Re-organisation and intensive use of ICT	- increases the rate of multi-factor productivity growth by 0.9 to 1.5 percentage points, otherwise no gains
ITPS, 2001a	If an enterprise goes from no ICT use at all to the median values given by ICT indicators	- 3% productivity gain
TNO Work & Employment, 1999	High-tech socio-technical production model	- highest productivity
Business and Industry, 1996	invested in new technology and introduced NFWO

Companies that made no investment in either physical equipment of NFWO
Companies that invested only in physical equipment | ability to comply with specific customer demands and experienced 2.7% annual growth of labour productivity
- 0.5% annual growth in labour productivity during the period 1990-1993
- 1.5% per year growth in productivity |
| Andreason, Coriat, den Hertog and Kaplinsky eds., 1995; Vickery and Wurzburg, 1998 | Lack of investment in NFWO, only investment in ICT | - observed lags in productivity growth, despite investments in advanced technologies |
| Bresnahan et al., 1999 | New work practices combined with heavy investments in either human capital or ICT | - positively co-related with the performance of firms |

Employers rarely regard ICT as an important motivator for organisational change (NUTEK 1996). However, this study shows that the adoption of new technology (including computer hardware and software) affects a larger proportion of the staff in firms that introduce new work practices. According to the OECD, labour productivity growth during 1992-1998 was much faster in US manufacturing industries which combined a high incidence of new work practices with a high incidence of ICT use, than was the case in other US manufacturing industries. However, the productivity performance of firms where only one of the two factors is intensively used is not particularly good. This result is confirmed by the European studies listed in table 2.

The change process and productivity

Like many other types of innovation, changes in work practices do not have immediate results. The change process itself brings extra costs for companies which reduce productivity in the early stages. Both employers and employees need to learn how the new practices can be used effectively. As a consequence, it is possible that their introduction will reduce productivity in the short term. Because most new forms of work organisation have been introduced over a relatively short time period, it is not always very clear to what degree productivity may be lower than expected (Huzzard, 2000). The weak evidence of the relationship between new work practices

and firm performance found in some studies (notably some of the studies for the United States and France) could be interpreted in this light (Askenazy, 2000). Even so, most studies in the following table show that new forms of work organisation seem to be a precondition for the further restructuring of companies and further learning by companies. Other research by Caroli and Van Rheenen (1999) found the presence of high-skilled labour necessary for increased productivity.

Table 3: The change process and productivity.

Source	NFWO	Effect on productivity
ITPS, 2002a	Incidence of change in the work organisation: implemented organisational changes Comprehensive changes to the organisation during the period 1995 to 1997: higher degree of decentralisation in 1997	- a greater degree of learning than the others - positive significant relationship between the implementation of continuous change and a high degree of decentralisation
Dutch Ministry of Economic Affairs, 1998	New forms of work organisation	- positively related to the management of hyper-growth companies
DGV, 1998	New forms of work organisation	- helps significantly in the management of companies undergoing restructuring
Caroli and Van Reenen, 1999	Changes in work organisation	- positive influence on plant-level multi-factor productivity, the effect is strongest when the incidence of skilled labour is high
Crockett, 2000	Workplace reforms	- recorded a rise in relative labour productivity in both the 1995 cross-section survey and the 1990-95 panel survey
Huzzard, 2000	Workplace re-alignments and development	- unclear relationship with productivity

Job quality, job satisfaction, high skill and productivity

New forms of work organisation are linked to job improvement measures such as job rotation, task improvement and enlargement. It is through such measures that companies achieve higher productivity outcomes. The European Commission's employment report for 2002 shows that better job quality leads to significantly higher labour productivity. At the sectoral level, labour productivity is correlated with the various components of job quality particularly the incidence of and access to training, employment security and self-reported job satisfaction — including satisfaction with working time, working conditions and work content (European Commission, 2002).

The following table demonstrates other findings confirming relationship between quality of working life and productivity:

Table 4: The quality of working life and productivity.

Source	Quality of Working Life	Productivity
ITPS, 2002b	Investment in human capital - education	- driving force for growth
Psacharoulos, 1994	The level of education	- explain a significant share of the variation in growth between different countries during the 1970s and 1980s
Barro and Lee, 1996,	Human capital and education	- doubt over explanatory significance for the difference in growth between countries
Nutek, 1996 and ITPS, 2001a	The proportion of employees with a college education The proportion of employees with a higher education background Levels of education are also correlated to learning via the work organisation, co-operation with other parties and to innovative development work The proportion of higher educated people in the company goes together with a decentralized work organisation, co-operation with other participants and the degree of innovation in the company	- related to good company financial results - significant for both productivity and profit of enterprises
FLEX-2 study; National Institute for Working Life, 2000	Good work environment, learning in work	- a positive connection with competitiveness

Ducatel and Burgelman (1999) found that new forms of work organisation create higher skilled jobs which tend to be more rewarding. This leads to a virtuous cycle in which higher quality work raises motivation, and which in turn raises performance. In many of the previously cited studies the relationship between new forms of work organisation and higher skill demands was also evident.

Job demands and stress at work
Workplace innovation can have a positive outcome for employees. But in practice there is also evidence of a downside to new forms of work organisation including the potential for increased stress and job insecurity.

There is certainly evidence that new work practices are sometimes associated with greater stress. Employees are more autonomous and this may result in greater satisfaction, but increased responsibility for their own performance may also intensify stress. Worryingly, in recent years the incidence of stress and accidents at work has reportedly increased in many OECD countries. According to some studies, this trend is in part attributable to experiences of re-organisation (Askenazy, 1999; Fairris and Brenner, 2001). It could, however, also be the result of new 'low road' forms of work organisation. Greenan (2000) reports that amongst companies with new forms of work organisation, only those which introduce quality improvement or project teams

create better working conditions, perhaps because they actively engage employees in opportunities for reflection away from the day-to-day production and delivery. Many companies with just-in-time systems or teamworking have failed to improve working life; rather they face more complaints from their workers. A possible explanation for this finding is that low road approaches to teamworking are often introduced to overcome specific, short-term problems, or to reduce cost, and do not allow employees sufficient control over their work. However increased control is only likely to lead to improvements in working life if employees develop the necessary skills in problem solving, decision making and communication. Failure to acquire these skills is likely to increase job demands and stress as a result of peer pressure.

One reason for these unintended consequences may lie in a weak understanding of the psychological needs of the employee. Vansina (1998) criticises the way the individual is treated in current organisation practice and science. The complex processes underlying the individual's relationship to work and organisation remain to be understood. Most change processes are too simplistic in nature and lead to organisational models which do not achieve their promised potential (Kira, 2000). Rather, change might seek to create social communities based on co-operation in ways which reflect the individual needs and potential of each employee. In the Dutch situation, socio-technically inspired companies appear to be so successful in the market that they fail to limit the demands on their workers. Without appropriate organisational measures and resources this is certainly likely to increase the risk of adverse personal consequences for employees (Dhondt & Kraan, 2001).

Flexible employment: a double-edged sword?

Ducatel and Burgelman warn that flexible arrangements (such as part-time and temporary contracts) are strongly associated with lower levels of investment in human capital. This raises questions about future responsibility for the accumulation and renewal of know-how in Europe's emerging knowledge society. There is a trend towards greater numerical flexibility in employment patterns (particularly through the use of part-time and fixed term contracts or outsourced jobs) alongside the functional flexibility achieved through the multi-skilling and empowerment of workers. The OECD (2001) found that in firms which use new work practices, the incidence of outsourcing arrangements, part-time work and fixed-term contracts tends to be somewhat higher than in firms that did not introduce the new practices. While job mobility may be perceived as an enriching experience by knowledge workers and professionals, this is less likely to be the case for unskilled workers. When these workers change job frequently they tend to lose skills since these are more likely to be specific to the particular firm or industry. This lowers both their productivity and their employability. There is also ample evidence that individuals with short-term contracts and other non-standard forms of employment are less likely to receive training than their counterparts in permanent jobs.

Nonetheless emerging patterns of employment can reflect a complex and dynamic interaction between new market opportunities and changing aspirations for working life. Cultural industries such as the media provide a striking example of this. An often-quoted example is that of the London film industry, in which a network of small specialised enterprises located in the Soho district form and re-form ad hoc coalitions to compete for contracts in global markets (HMSO, 1998). Their evident success lies in a combination of fast broadband communications and effective inter-personal teamworking built on geographical proximity and trust. More than 60% of people in London's film animation sector are portfolio workers – essentially self employed but competing for contracts substantially on their ability to assemble customised teams for specific jobs through

personal networking (ERA, 1999). There is evidence that such employment patterns reflect a conscious choice by individuals working in those sectors (Knell, 2001) though it is also clear that many of these knowledge workers are young with fewer concerns for employment security, especially given high levels of demand for their talents. Moreover there is little evidence to demonstrate that such patterns of employment have spread beyond the newer creative industries.

This raises wider issues about the changing nature of the employment relationship. In the traditional work paradigm the employment relationship was relatively straightforward: in exchange for loyalty, commitment and acceptable levels of performance, employees received security, regular opportunities for advancement, annual pay increases, awards for exceptional performance, and investment in training and development, perhaps protected by representative structures such as works councils. Certainly in much of Europe the collective bargaining structure constituted – and in some cases continues to constitute – the basis of the relationship between employee and employer. Mutual expectations were well enshrined in employment law though in practice many employees, especially in smaller enterprises, did not enjoy such levels of reciprocation. Employees were also expected to tolerate bureaucratic aggravation and often domineering styles of management (Blancero, 1997).

More than two decades of large-scale corporate restructuring in Europe coupled with the steady liberalisation of employment law have led to increasing numerical flexibility in most parts of the labour market. 'Jobs for life' are now becoming rarer even if earlier projections of job mobility now seem to have been overstated. This has inevitably challenged the reciprocal nature of the employment relationship with potentially serious consequences for employees and employers. Job security has been adversely affected for both blue and white collar employees even while, as we have noted, job content has broadened and requires a wider range of vocational and personal competencies. Meanwhile employment and progression relies increasingly on performance measurement, especially for managers.

The term 'psychological contract' (Anderson & Schalk, 1999; Sharpe, 2002), is used in some circles to describe the mutual perception of obligations between employer and employee, reflecting the growing individualisation of the employment relationship in parts of Europe. With the decline of the old employment relationship, it is argued, new concepts are required to understand employer-employee expectations. Employability is increasingly seen as forming the basis for the emergence of a new psychological contract. Reciprocity from the employer for access to an employee's talent takes the form of rewarding work in which the individual is enabled to acquire new competencies, gain experience valued in the labour market and build personal networks conducive to subsequent employment (Knell, 2001). The problem for many employers is now not just how to recruit and retain skilled employees, but how to encourage them to utilise their full talent and creative potential during a relatively brief period of employment in a given organisation. New forms of work organisation are often at the heart of this new relationship, building a work environment in which opportunities for innovation and teamworking offer a high quality of working life in the short term and the experience required for better job prospects in the future.

O'Reilly claims that some of the multi-national corporations (for example Intel, Hewlett Packard, IBM, Apple, and Reuters) find it useful to share as much information as possible with employees so that they can make intelligent decisions about their careers. Regular meetings provide employees with information concerning the organisation's financial health and long term strategic plans. Managers are responsible for helping co-workers recognise if demand for their skills is

shifting, and for encouraging them to seek necessary training. Nevertheless, he suggests that the message to employees is clear:

"You own your own employability. You are responsible".

Does making the deal explicit enable employees to accept and adapt to the changing work environment? Sims (1994) is optimistic, claiming that employees understand and accept that they:

- can expect to have multiple careers;
- have more responsibility for assessing and designing their own careers;
- must seek new definitions of success;
- need to emphasise lifelong learning to avoid obsolescence of job skills.

Other researchers (Earley, 1996; Flinn, 1997; Ramsey, 1999) and an increasing number of practitioners are equally optimistic that employees have accepted a new psychological contract based on employability, and that it represents a way forward. Evidence from the UK suggests that the new generation of young highly educated workers find changes easier to accept (Hammet, 1994; Herriot & Pemberton, 1996). This group wants more opportunities for development, autonomy, flexibility and meaningful work experiences. They want to participate fully in the work environment, react adversely to rigid hierarchies and denounce a lack of involvement in decisions affecting them (Harding 1991).

Whilst this represents good news for younger employees and for organisations employing this group, what about the remainder of the workforce? Research findings (Hiltrop, 1995; Herriot and Pemberton, 1996) indicate that older employees find it most difficult to manage the changes. This suggests that younger, more qualified employees accept the notion of employability more readily than older employees, who may retain a desire for more stable employment relationships and a career with one organisation. A UK survey by the Institute of Personnel and Development (Stevens, 1995) also found a strong residual attachment to the idea of long term employment and a career with the same organisation.

The psychological contract debate reveals a difficult dilemma for European policy makers and social partners. While it is clear that national social partnership arrangements and collective bargaining have provided a sound framework for the emergence of new forms of work organisation in some parts of Northern Europe, the individualisation of the employment relationship is increasingly widespread. Many older and less adaptable workers will be put at even greater risk, while labour markets themselves may become more dysfunctional without collective mechanisms to manage workforce adaptability. On the other hand, quality of working life is increasingly recognised as important both by workers with higher expectations and by employers seeking to use the full potential of their employees.

One important aspect of the psychological contract is whether the employer is prepared to be flexible when it comes to accommodating employees' needs for work-life balance. In the Netherlands, discussion has turned to how individuals may wish to vary their working times at different stages of their working lives, such as when they are single, have children, or when they are older. The idea of 'saving' time has arisen, whereby, for example, people could work/save longer hours when they are single and 'spend' the hours later on childcare, retraining or early retirement. This would require working arrangements to be flexible enough to permit the individual worker to enjoy a great deal of flexibility.

Employability is an increasingly unavoidable issue whether inside or outside the collective bargaining context. In part this implies a requirement for individuals to renew skills and knowledge continuously, but to an even greater extent it implies the need to place learning and development at the heart of job design and work organisation.

Conclusion

In this Chapter new forms of work organisation have been approached from different standpoints. Our overview of the historical background and the different national traditions has pointed to a number of conclusions. Certainly tayloristic or taylor-inspired models are not the way forward for a European model of work organisation. Not only are their apparent productivity benefits questionable – especially at a time when agility and innovation are central to Europe's competitive advantage – but their social costs are unacceptable. Lean production methods are derived from these tayloristic models to such a great extent that they do not present a viable strategy for the future of European work organisation. Rather the priority for Europe is to build an approach which maximises opportunities for developing and utilising the skills and creative potential of the entire workforce, reuniting organisational performance and job satisfaction; in short, the high road.

Ensuring that Europe reaches the high road cannot be left to decision making by the individual organisation. Rather it requires conscious effort by policy makers and social partners at national and European levels to build an environment which promotes and sustains workplace innovation through an abundance of knowledge-based resources and opportunities. Public and social partner intervention works. Many of the case study companies examined later in this report can attribute at least part of their achievement to participation in programmes which deepened opportunities for learning, comparison and reflection. In those countries with limited policies and programmes to support workplace innovation, experiments with new forms of work organisation are relatively rare.

At the time of writing the provision of effective support for workplace innovation is very patchy across Europe. While a new wave of initiatives is emerging in Finland, Ireland and elsewhere, many long-established programmes and institutions face serious challenges. Other countries, including the applicant states, have little or no capacity to promote new forms of work organisation. It is hard to resist the conclusion that the gap between leading-edge practice and common practice is getting wider in European workplaces.

While member states have a key role to play, attention must also be focused at EU level. European policy makers and social partners need to understand the nature of workplace innovation and its wider implications for economic and social policy. In particular they need to develop a framework in which activity at the national level is animated and resourced. Critically such a framework can translate the diversity of European experience – in the workplace, at the level of organisational theory and at the policy level – into a common resource for learning and innovation.

Our final perspective in this Chapter looks at the incidence and outcomes of new forms of work organisation. From the data it appears that new forms of work organisation are on the rise in Europe but the results are not so the same in all countries. In Sweden, one of the prime locations for the emergence of new forms of work organisation, these methods may even be in retreat. Our analysis has shown that new forms of work organisation lead to higher productivity and more innovation. The following diagram summarises the main conclusions:
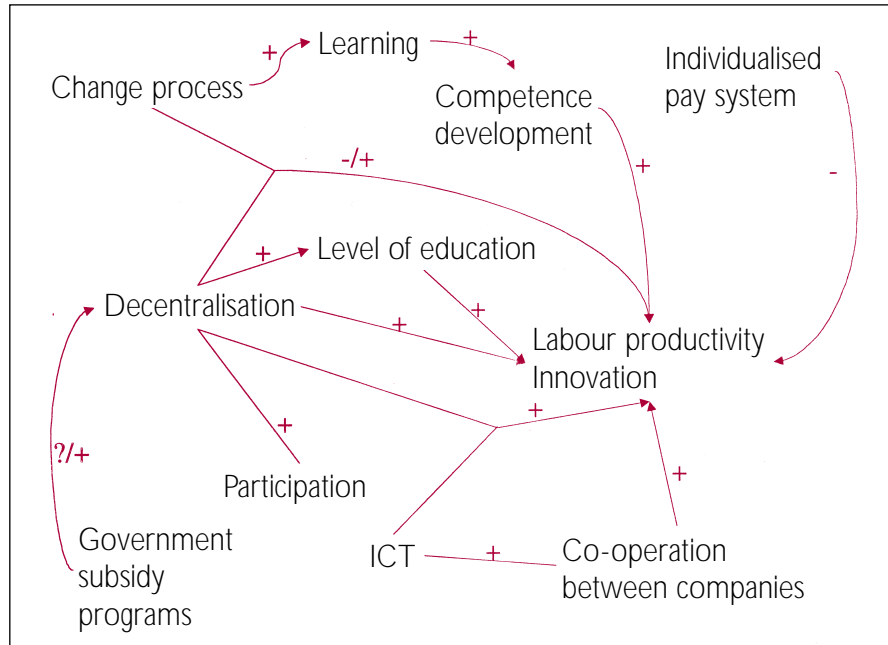
Figure 2: Summary of the literature review on the outcomes of new forms of work organisation

Chapter Three

Why change happens

Why change
happens

Introduction

Workplace innovation reflects the interplay between a complex set of factors both internal and external to the organisation. This Chapter analyses evidence from the case studies and literature to explain why enterprises engage with the arenas of organisational innovation identified in Chapter One.

Coping with change in a global economy dominated by increasingly volatile patterns of competitiveness and employment, technological innovation, political upheaval, social transformation and environmental uncertainty is the primary challenge facing organisations at the beginning of the new millennium. Adapting to the external environment means that change has become continuous and more intense for most organisations, at least for those with a serious interest in survival. The intensity and frequency of change can increase radically as a result of both political and market forces such as the collapse of the Berlin Wall or the events of September 11th, 2001.

Globalisation and technological innovation combine to increase the intensity of market competition, inducing each firm to improve its competitive position at both national and international levels. In this setting, a firm's capacity to survive and grow depends on its ability to adapt to changing consumer needs, technological opportunities, new entries and new products, as well as on the adoption of strategies to improve long-run competitiveness and performance. As we have argued in the previous Chapters, firm-level concepts of competitive advantage in many industries are tending to shift from price factors toward the strategic ability to exploit those intangible resources that generate product innovation, agility and customer responsiveness. Such intangibles include high levels of organisational competence, a culture which promotes enterprising behaviour, and the ability to capture and exploit the tacit knowledge of all employees. Often, as the case study evidence shows, enterprises must be willing to sacrifice short-term profitability to invest heavily in the organisational and workforce development required for longer-term competitiveness. Owners and shareholders are clearly central to the environment in which organisations make decisions about organisational change. The extent to which they are willing to take the longer-term view is a major determinant of an organisation's ability to reach the high road.

The case study analysis identifies several factors in the external environment and within organisations which animate workplace innovation. These include:

External pressures
- Competitive advantage
- Supply chains and clusters
- De-regulation and regulation
- Merger and acquisition
- The environment

External pressures

The external environment in which companies operate is complex and unpredictable, and the case study evidence does not allow a clear connection to be drawn between external variables and specific organisational changes. Rather it often appears from the case study evidence as though external influences play more of an indirect role compared with internal factors. Arguably it is the failure of existing organisational structures and work practices to cope with the changing external environment – and the internal consequences which result from this failure - which are more likely to stimulate change. However the evidence does enable a number of significant external influences to be identified:

Competitive advantage

Changing patterns of competition provide a major incentive to transform working practices in ways which enable companies to bring new and innovative products or services to market faster than their competitors. They also have to improve the quality and supply of existing products and services, reduce overhead costs and invest in new technology, while complying with an increasingly complex regulatory framework. The case study evidence suggests that while both objectives and types of change varied significantly, external pressures such as increasing market competition in a global economy, customer demand for better products and services, and rapid technological advances were often dominant factors behind organisational change. This takes places against a background in which European companies have to compete with significantly lower labour costs in other parts of the world.

Many change initiatives result from customer-led demands for rapid innovation, shorter lead times and greater versatility. From the mid-1980s Mammut Work Wear's customers began to expect faster delivery, smaller batch sizes and greater variations in product types. And in 1994, managers at Gispen Kantoorinrichting realised that lead times were much too long, causing problems with delivery times and the build up of obsolete stock.

New production systems must be capable of delivering the right products to the market at the precise moment when they will achieve maximum impact. Producing for stock is out-of-date: the

need is to combine market intelligence able to identify changes in the daily mood of the customer, continuous product innovation and highly agile approaches to production. In this equation creativity at all levels of the organisation becomes as important as flexibility and responsiveness, ensuring the ability to continuously reinvent products and services.

Supply chains and clusters

Supply chain relationships are also critical, both as a force for change and in resourcing innovation and agility. The ability to pool knowledge and expertise between different parts of the supply chain offers enhanced capacity for creativity and innovation, though is dependent on both trust and the removal of organisational demarcations. Ducati, the Italian motor cycle manufacturer, moved to a system whereby the number of suppliers was drastically reduced by giving certain component manufacturers the responsibility for assembling sub-platforms, thus co-ordinating and controlling the supply and assembly of sub-components. This involved co-operation on research and development, product innovation and quality. Certainly a substantial body of research demonstrates the effectiveness of local clusters in supporting innovation within and between SMEs (Antonelli, 2000; Audretsch and Feldman, 1996; Baptista and Swann, 1998; Brusco, 1982; Davies and Weinstein, 1999; De Propris, 1999; Porter 1998). Hi-Res case studies of, for example, the knitwear cluster in Carpi, the footwear cluster in Montebelluna, the packaging machinery cluster in Bologna, the electronics cluster in Eastern Sweden or the Technopoles of Sophia Antipolis and Toulouse demonstrate the diverse range of contexts in which the relocalisation of production creates the conditions for innovation in both traditional and emerging sectors. Clusters are particularly effective when they generate collective solutions to common problems, for example the Democenter in Modena which provides practical help to small firms in overcoming obstacles to the introduction of new technologies. Technology can also enhance co-operation between firms by facilitating a shared knowledge base.

De-regulation and regulation

Deregulation and privatisation are also significant drivers for change as two of the case study companies show. A railway company, for example, experienced competition and the need to focus on the customer for the first time when it was deregulated in the early 1990s. Renholdningsselskabet, a Danish not-for-profit company which collects waste for a local authority, has made changes in the expectation that it may soon have to compete with private sector contractors. On the other hand regulation and quality standards are important issues too. Policy changes at both national and European level put pressure on many organisations to conform to new regulations and standards, some of which have been costly to implement. Other companies have had to respond to new regulations imposed by their own industry or sector. For example, working practices at SIFCO Turbine Components, a company in the airline engine component repair business, are subject to exacting standards of quality control. These are monitored by the engine manufacturers and by the regulatory authorities. Many other companies are under equally close scrutiny.

Merger and acquisition

The Cap Gemini Ernst & Young case study highlights pressures on some of the bigger multi-national corporations to merge and thus combine expertise and specialist skills in order to extend the services they provide. Clearly many organisations had been the subject of mergers and takeovers in recent years, often resulting in changes to strategy and intensified requirements for improved productivity and financial performance.

The environment

Environmental considerations can also prompt changes in working practices. When East Midlands Electricity relocated into a new out-of-town building, the local authority commuter plan laid down that there were to be fewer parking spaces than would normally be required. The company also provided fewer desks than people due to work there. Both factors discouraged people from driving to work, and the outcome was an increase in teleworking, car sharing, compressed four-day weeks, and the use of public transport. This in turn led to new organisational practices designed to strengthen communication and teamworking.

New technologies

Organisational innovation can also be stimulated by developments in new technology. In particular companies need to find out how to develop their ICT so that knowledge can be captured and distributed across the organisation, allowing it to be combined to form new knowledge. Skanska Sweden embarked on a project to reduce production times and faults. New methods were adopted, studied, disseminated via an intranet and then used to inform similar projects throughout the organisation. As we argue in Chapter Two this is not simply about the introduction of databases. Rather, effective knowledge management depends on the social processes – the interaction and dialogue which allow knowledge to be shared and analysed by all actors at all levels of the organisation. knowledge. The strengthening of competitive power and performance from the introduction of ICTs is therefore most likely to occur if it is used to broaden job profiles and support the delegation of responsibility to employees by providing them with access to new information. Companies must adapt organisational design and production processes to maximise the possibilities for communication and collaboration offered by ICTs.

External support

Change in many of the case study organisations began when a project was set up with external support, encouragement and/or participation. For example:

- Honeywell-Measurex, a supplier of measurement and industrial automation systems, was one of several Irish companies to take part in a national initiative – the *New Work Organisation in Ireland* programme led by the Irish Productivity Centre.
- Change at MalacoLeaf, a Danish confectionery manufacturer, was encouraged by an action plan adopted by the Danish Parliament in 1992 to halve fatiguing, monotonous and repetitive work before 2000.
- A waste management company embarked on a project to upgrade employees' skills and qualifications and redesign jobs when it received EU support through the ADAPT programme.
- Change at the Swedish sweet maker Cloetta Produktion and at Duni Tissue/Airlaid was supported by a regional programme led by the Centre for Industrial Technology & Work Organisation at Linköping University.

Internal pressures

In addition to external pressures at the macro level, there are a number of internal driving forces for change. Some companies focused directly on increasing productivity, cutting costs and reducing delivery times through the introduction of new systems and procedures. However the majority adopted a less direct approach, focussing on relationships between different stakeholder groups, increasing employee satisfaction, re-structuring the organisation and re-designing jobs. Virtually all

the companies in this report cited 'increasing employee satisfaction', 'employee participation' and 'education and training' amongst their key objectives. More effective communication was also high on most organisations' change agendas.

Within organisations, structures and cultures are changing to foster direct and open communication with clients, better internal communication and greater empowerment for employees through cross-functional working, working in teams and agreement with employees about quality and productivity. This internal change enables employees to utilise their innovative capacity and unfold their creativity to help the organisation to meet the new requirements, whilst at the same time satisfying their own needs for good and inspiring working conditions.

There may be a unique partnership ethos within an enterprise, deriving perhaps from a particular style of ownership or management. Such situations may reflect a commitment to partnership as a core organisational objective in which all employees are deemed to be stakeholders as a right. Alternatively there may have been a particular 'improvement' strategy with roots in concepts such as 'world class manufacturing'. In such instances a degree of synergy can arise in that the technique itself may demand   partnership practices in order to be successful; in many continuous improvement techniques, for instance, a significant degree of local empowerment is involved.

Employees themselves may be the driving force for change, for example, the recruitment of new employees who by aspiration seek a greater involvement in decision making; such a trend might complement the gradual retirement of employees more comfortable in what might be described as an adversarial culture. Furthermore, change can be driven by the creation of a more dynamic internal learning environment which in turn stimulates both vertical and lateral mobility among employees. Such an internal labour market will tend to foster enhanced consultation, transparency and accountability leading to the emergence of partnership structures and processes. And if tasks and jobs are to support the innovative capacity of a company, they should be designed in such a way that competence development is at their core.

Quality of working life and employee satisfaction

As Johnson (1995) suggests, the success of an organisation will depend more and more on its ability to attract talented people to work for it. But potential employees are increasingly well educated. They want to be treated professionally, enjoy autonomy and have the opportunity to learn and be developed - thus training and development become key success factors for organisations. Enterprises are increasingly developing new recruitment and retention practices, while introducing policies to facilitate life long learning. In short they are creating attractive careers and working environments which maximise employees' potential to develop and utilise their full range of competencies.

For many case study organisations, the need to create attractive workplaces that would appeal to potential recruits was combined with pressure from the existing workforce to improve both job content and the work environment. These employers believed that doing so would increase employee satisfaction, encouraging employees to perform better and contribute more to the organisation. The results would be reflected in increased productivity, versatility and innovative potential. Thomassen & Drijver, Scan-Globe, Fredricsons Trä AB and Klostermarkskolen are examples of the companies that recognised a need to create new and more interesting forms of work through enhanced employee participation and a new commitment to training and development. The majority of the case study organisations acknowledged that employees

possessed the knowledge and ideas to improve efficiency and effectiveness, and wanted to encourage them to share their ideas with the company.

There were a number of organisations where work had traditionally been physically taxing and monotonous and where steps had been taken to make it less demanding and more enjoyable. At Mammut Work Wear new sewing machines were installed which enabled the operators to rotate between a variety of tasks, opening the way to effective teamworking. Previously they had been restricted to a single repetitive operation on the old machines. This change also had the effect of making recruitment easier. Previously machinists had advised their daughters not to enter the trade but the new methods made working life more varied and interesting, offering opportunities for greater contact with other operators.

Recruitment was also an issue for other case study companies. In Ireland, for example, where there was virtually full employment at the time of writing, companies like Yves Rocher were becoming increasingly aware of competition in the labour market. One of their key objectives was to improve the physical and psychological work environment, including the development of innovative approaches to reward and remuneration as a means of recruiting and retaining employees with the necessary skills and competencies.

Improving industrial relations

A number of the case study companies had a history of confrontational negotiations between management and trade unions which inhibited the speed with which companies could introduce the organisational changes necessary to respond to external pressures. As time went on both management and trade unions became eager to develop a relationship relatively free from conflict, and partnership was seen as a means of achieving this objective. Partnership was not only perceived as offering potential benefits for all parties; it was also seen as providing a robust mechanism for animating and resourcing future organisational change. In East Midlands Electricity for example findings from an employee attitude survey became 'a wake up call', underlining the need to remove long-existing tensions between management and employees if the company was to become more effective.

SIFA, Tegral Metal Forming, Aughinish Alumina and SuperValu Centre are examples of organisations that built workplace partnership structures through their participation in the *New Work Organisation in Ireland* programme. A number of the UK case studies including Blue Circle Cement, BorgWarner, Emhart and HP Bulmer also demonstrate the improvement of industrial relations through the establishment of a partnership approach to change based on employee involvement, information sharing, participation and joint decision-making.

Increased flexibility

Better utilisation of human resources through increased functional flexibility, was another frequently cited objective, involving multi-skilling or changing employees' attitudes towards work. Thus for example Klostermarkskolen trained catering assistants to do cleaning assistants' jobs, and vice versa, so that better cover could be provided for holidays and sickness. Fewer people could then be employed during quiet times if employees were able to switch roles and work where they were most needed. Such an approach to flexibility also underpinned PTT Post's change initiative. Other companies felt that machines and technology could also be utilised more effectively if employees were multi-skilled, and multi-skilling is certainly a core component of teamworking.

Boundaries between operational and management tasks can also be blurred: HC Hovmand and Scan-Globe for example believed that production workers could undertake certain management tasks thus giving managers more time to focus on strategic issues.

New technology creates a need for change

Whilst many companies had already invested (sometimes heavily) in new technology, they had not always made any changes to the organisation's structure. At Akzo Nobel the expected positive benefits of technological innovation had not been realised because organisational aspects were overlooked. Management realised that a re-structuring programme might be necessary to support the new systems and procedures.

The case studies offer evidence that organisations are using new technologies to provide more attractive and rewarding workplaces in ways which also benefit productivity. Thus for example the design of Carlsberg's new bottling plant at Valby explicitly sought to improve quality of working life through the introduction of new technological systems. New technologies can enhance working life if job design is considered at the earliest stages. In the case of SNS Bank in The Netherlands, intensive employee involvement in the implementation of a new information system was a key factor both in its success and the positive benefits which accrued in terms of job enrichment. But in many case study companies this did not happen. While output increased, the technology sometimes had detrimental effects on employees and ultimately on the success of the organisation. Technology-led reorganisation of work can often result in boring repetitive jobs and lack of communication or contact between different employees. In a minority of organisations it was also suggested that routine, repetitive work had resulted in strain injuries. Companies experienced problems with low morale, employee dissatisfaction, lack of motivation and a noticeable increase in absenteeism. In short, failures in the initial implementation of new technologies has been a significant cause of subsequent workplace innovation amongst the case study companies.

Bottlenecks

Bottlenecks in the production process are often a cause of change. Before new equipment was brought in at Mammut Work Wear for example (see above), all operator places in the line had to be occupied to maintain production flow and avoid bottlenecks. However the new machines were far more flexible: operators could move autonomously between the different operations whenever required to balance production.

Sometimes employees and machinery in certain parts of the production process cannot cope with the level of demand; at the same time machines in other parts are not fully utilised and members of the workforce are kept waiting for work. Companies are therefore searching for solutions which enable employees to be multi-skilled and capable of switching tasks whenever required - offering the prospects for enhancing both productivity and employee satisfaction.

Knowledge management

Knowledge management is becoming increasingly well established as part of management vocabulary; many organisations are aware of the need to promote learning and reflection amongst employees as a means of enhancing customer service and management effectiveness. Thus Föreningssparbanken, a Swedish bank that employs some 11,800 people, embarked on an open-ended programme to capture and distribute knowledge and experience to staff at all levels of the

organisation. Likewise a learning academy was created at TietoEnator, a management consultancy supplying IT services. Its aim is to give employees the opportunity "to acquire knowledge continuously and individually" and is accessible directly from workplaces via the computer network.

In several examples (see for example Fredricsons Trä AB, Cloetta Produktion AB and BGB Engineering) there was a gradual realisation that traditional forms of job design and work organisation did not give employees sufficient opportunity to contribute their full knowledge or experience to improving products and processes on a day-to-day basis.

Short-term necessity or long term thinking?

The degree to which change emerges as a matter of urgency varies considerably. Some companies were prompted to change by immediate fears for their survival, while others took a long term view and were simply planning ahead. These latter organisations felt the time was right to introduce changes with the intention of growing the business, thus ensuring that they remained ahead of the competition. PTT Post for example was preparing the company for a future in which its monopoly would soon end and it would face the new challenge of having to compete for business. Other companies indicated that strategically planned organisational changes were necessary to increase their competitive edge, to keep up to date with new technologies and to renew the focus of the organisation. The Föreningssparbanken example cited above is an example of workplace innovation driven by long-term goals; in other cases change is driven by a gradual realisation of the need for steady improvements to key aspects of performance such as cost (for example Dow), lead times (for example ABB Low Voltage Systems AB; Gispen; Mammut), dealing with market fluctuations (eg: Duni Tissue/Airlaid; Autoliv Sweden AB), or customer service (eg: Abrona; Arriva; Cederroth International AB).

For a significant number, changes to working practices were necessary for the very survival of the company. These companies needed to respond to customer dissatisfaction with long delivery times, poor quality and/or high costs (Aughinish Alumina provides a particularly stark example). Organisational change could either 'make or break' the enterprise – for example BGB Engineering, a family-owned business where the managing director was no longer prepared to continue operating the company unless it could move decisively towards higher value production (see also Gargnäs Elteknik for a comparable example). The problem is that such contingency -driven approaches to change may be too focussed on overcoming short-term problems at the expense of longer-term effectiveness or sustainability.

Finally several organisations wanted to overcome problems bequeathed by previous change initiatives. Poorly managed initiatives had failed to achieve objectives, cost more money than was saved and left a cynical workforce reluctant to participate in further changes.

Regardless of how urgent it was to change working practices, there was realism about the need to see the process as part of a longer term strategic plan (Cap Gemini Ernst & Young offers a very clear example). Many anticipated that it could take up to two years before significant benefits were achieved, especially any impact on profits and operating costs. Only a minority regarded change as a discrete event with targeted at short term objectives or a means of overcoming a specific organisational problem.

Towards fundamental, sustainable change?

There was quite extensive recognition amongst the case study organisations that change is not a one-off event and that success, now and into the future, is at least partly dependent on the ability to develop continuously. However many organisations were forced to recognise that long experience of successive initiatives which achieved only limited success left some employees sceptical, suspicious and resistant to change. Employee resistance certainly represents one of the greatest potential barriers to successful workplace innovation.

Long-term culture change was sometimes seen as an objective in its own right, breaking down inertia and opening the way to acceptance of the need for continuous innovation and development at all levels of the organisation. Management in organisations as diverse as East Midlands Electricity, Heineken and Scan-Globe wanted to encourage new attitudes from the shop floor through to senior management, thus creating a culture in which change is seen as an opportunity for personal development and creativity. These companies began to develop organisational structures, systems and practices through which employees at all levels of the company accepted and were involved in continuing workplace innovation.

Measurable objectives

Whether part of a longer term strategic objective or a solution to an immediate problem, the foregoing discussion suggests that issues most likely to be addressed by change initiatives include:

- customer satisfaction;
- delivery times;
- overhead costs;
- reducing the cost of goods/services for customer;
- quality of goods or services;
- employee satisfaction;
- industrial relations;
- employee flexibility;
- employee skills and development and knowledge of the organisation.

The case study organisations often set measurable targets by which the success of their change initiative would be judged. Many sought to address several of the above issues at the same time. Cederroth International which produces consumer goods such as shampoo and toothpaste wanted to increase efficiency, flexibility and levels of service to the customer, reduce costs and stock, and shorten lead times - all through the introduction of goal-orientated teams. It also wanted to improve employees' working conditions by giving them opportunities for personal development and by broadening the content of jobs. The results were remarkable: lead times were cut by 44%; productivity increased by an initial 25% and then by 3.6% annually; stock was reduced by 48%; labour turnover fell from 15% to 2%; and sickness absence fell from 11% to 4%.

In contrast organisations such as Emhart Fastening Teknologies, a US owned rivet manufacturer operating in the UK, pursued softer (if no less demanding) targets. Emhart's initial aim was to improve industrial relations to prepare the ground for employee flexibility and a more participative management style. This motivation can also be seen in many of the Irish case study companies, several of whom participated in the *New Work Organisation in Ireland* programme with precisely

this objective. Agreement by unions and management to partnership approaches can result in the introduction of team orientated problem solving, total quality management, and self-directed teams.

Conclusions:
Towards the High Road?

How do organisations begin their journey towards the high road? Chapter One's discussion stresses the broader, more strategic view of organisational innovation. The high road is distinct from discrete organisational interventions designed to achieve specific ends. Rather it is characterised by a continuing commitment to workplace innovation based on employee involvement and participation from the day-to-day work environment to more strategic levels of decision making. The high road is a continuing journey, not an end state. Yet the evidence shows that only a few organisations start the journey understanding the open-ended and reflexive nature of their prospective venture. Indeed organisations can very easily become entrapped at the lowest levels of workplace innovation and fail to see the heights to which they might aspire.

For other organisations however, early experiences of workplace innovation – however limited in their original scope or purpose – begin a process of learning and reflection which enhance aspirations and open new possibilities. Even a history of failure can provide a source of reflection and knowledge capable of re-energising workplace innovation.

The case study evidence demonstrates a wide variety of external and internal factors in an organisation's acceptance of the need for workplace innovation. Increasing competition, brought on by changes in the global economy and technological progress, is a major spur to organisational change, and results in the desire to increase productivity, cut costs and reduce delivery times. Deregulation and privatisation, together with regulation and quality standards, may be the triggers which motivate organisations to increase efficiency and responsiveness to customers; likewise mergers and acquisitions often result in changes in strategy as well as a requirement for improved productivity and better financial outcomes. But owners and shareholders have to be prepared to sacrifice short-term profit if they are to invest in the organisational competence required for long-term competitiveness.

Knowledge management stresses the potential for increased competitiveness and performance by enhancing an organisation's ability to come up with new ideas. Sharing existing knowledge is a source of creativity – leading both to incremental innovations in products or processes and, at times, to completely new ideas for products and services. Many change initiatives result from customer demands for improvement, sometimes leading to the enhancement of existing approaches, sometimes to their complete reinvention. Change can also be instigated by developments in technology which open new possibilities for products and services, as well as new approaches to production and delivery.

Internal factors are often focussed on relationships between different stakeholder groups and the desire to increase employee satisfaction through restructuring and redesigning jobs. More effective communication with employees was also a high priority for case study organisations. There is growing recognition that employees want to be treated professionally, enjoy autonomy and have the opportunity to learn and develop. Meeting these requirements is increasingly seen a central to the recruitment and retention of a high quality workforce. Lifelong learning thus becomes a key

success factor for organisations, requiring new levels of investment in enabling employees to acquire the new competencies associated with new forms of work organisation. The workplace itself is increasingly seen as a potential site of learning, with employers providing opportunities for reflection and creativity. Many have also sought to make work less physically taxing and monotonous, and thereby more rewarding.

The initial incentive to build an effective partnership between management and employees has, for many organisations, been prompted by a history of confrontational industrial relations. Yet once established the partnership agenda often begins to extend well beyond its traditional domain. A common characteristic of organisations seeking the high road lies in the extent to which partnership practices permeate every dimension of working life. Employee involvement, information sharing, participation and joint decision-making become powerful forces for sustainable change, building the capacity and momentum required to find the win-win approaches to organisational innovation identifiable with the high road.

Chapter Four

The characteristics of workplace innovation

The characteristics of
workplace innovation

Introduction

We have argued in Chapter One that work organisation must be seen as a continuous process of innovation, reflection and learning across the whole organisation, and not as a series of discreet change initiatives designed to achieve predictable end states. In any given example, new forms of work organisation represent the cumulative outcome of that process.

Sustainable organisational change requires sustained innovation and resourcing: there are few successful 'quick fixes'. Critically the task is not to try and catch up with 'best practice' but to develop a strategy firmly orientated towards the creation of innovative and self-sustaining processes of development (Belussi and Garibaldo, 1995; European Work & Technology Consortium, 1997). Perhaps one of the most important resources for change is the development of a culture which values research, negotiation, experimentation, critical appraisal and redesign over many cycles. An innovating organisation must also recognise that setbacks are inevitable and that a 'blame culture' only stifles experimentation.

Organisations do not operate in a vacuum. The learning organisation is good at networking; it is close to all its stakeholders; it accumulates, distributes and uses knowledge effectively from a wide variety of sources. Change may also involve looking for external knowledge, assistance and support. Social partners, business support organisations and researchers may all help to resource workplace innovation. Internal solutions may be inspired by critical appraisal of different models of leading-edge practice in external organisations, while opportunities for peer-exchange and review may also alleviate some of the 'loneliness' of the organisational innovator. Comparing divergent alternatives, perhaps through visiting other organisations, has been shown to be effective in supporting organisational innovation. External facilitators, who can be seen as neutral brokers between the interests of different stakeholders, have been particularly useful in supporting the development of the partnership practices which subsequently underpin other organisational innovations (IPC, 1999).

Management values and attitudes deeply affect the nature and effectiveness of the change process. The necessity for 'top down' senior management commitment has been identified by many researchers and the Hi-Res analysis confirms that this is of crucial important in securing the legitimacy and effectiveness of 'bottom-up' change strategies. At Cederroth International the entire management team backed the change process, and the managing director chaired the steering group which drove the initiative. This gave a clear message to local managers that the new ways of working must be supported. But in a number of the Hi-Res case studies senior management backing was not obtained until some way into the process, which slowed it down. The change project at Carlsberg's bottling plant, for example, was not driven by top management and took a long time to achieve results as consequence.

Reward policies often needed to be changed to support innovation in working practices too; failure

to do this may undermine such changes. At Labofa, a Danish manufacturer of office furniture, the piece work system was ended and a system of hourly wages and a bonus were introduced. The Swedish confectionery manufacturer Cloetta Produktion, on the other hand, introduced skill payments, bonuses for productivity, on-time delivery and low waste, and payments related to the factory's financial performance. Payment systems associated with new forms of work organisation typically reflect different values to those which they replace, emphasising intangibles such as trust and competence rather than output-related performance.

The road to permanent change in methods of work organisation is long and winding. Even if a company acknowledges that its way of organising work is out of step with its production and sales opportunities, there will be a considerable degree of inertia which curbs innovation. The existing system will have established a kind of equilibrium through decades of adaptation. Products, markets, machinery, layout, buildings, corporate culture, the qualifications of managers and operators, planning systems, software, pay systems, productivity targets, supplier networks and so on will have been integrated with each other in such a way that intervention to change individual elements will have no permanent results (Banke et al, 1999).

Effective change requires widespread involvement and participation across the whole workforce. Innovation arises in part from making it possible to question established expertise, received wisdom and authority:

"We're actually constrained by our own mind-set . . . the constraint is the organisational hierarchies we work in, know of, or feel, are our norm as a culture"

<div align="right">(manager quoted in Jervis, 1998).</div>

Many managers understandably find the implications of this difficult and threatening. Such potential obstacles need to be anticipated and addressed, often through the significant redesign of management roles and responsibilities as well as by developing new management competencies. When Philips Lighting introduced self-managed teams, managers found it hard to let go of control and to stop assuming it was their responsibility to deal with problems. Training was necessary to help the managers adopt a new style of leadership where they supported workers and encouraged them to use their own initiative when problems arose.

Supervisors also need new skills. They may either have to develop different behaviours, becoming facilitators and coaches, or may acquire new responsibilities themselves as self-directed teams take on some of their previous work. In many organisations, such as NKT Cables, operators and supervisors are trained together in the new ways of working. The management function within organisational structures is often redesigned to remove the supervisory role and any other jobs where teams take on responsibility for previously discrete functions such as planning, dealing with suppliers or quality.

However while proactive management and leadership plays an essential role in creating the conditions for workplace innovation, change can rarely be 'managed' in a linear, planned way. The idea of the 'change agent' leading successful innovation from the front needs to be challenged. A condition of successful change appears to be that it is multi-voiced, messy and unpredictable (Engeström, 1992). Some more imaginative examples of practice actively embrace chaotic and widely dispersed possibilities for organisational innovation. Ericsson Radio, for example, has introduced a number of staff at all levels of the organisation as 'Inspirers' with a specific brief to

'sense the feeling' of the organisation, identifying possibilities for innovation which combine improved performance and enhanced quality of working life (Hague, den Hertog, Huzzard and Totterdill, 2003).

There is also a strong link between the success of new working practices and investment in workforce development; several of the case studies show that substantial education and training may be required. Greater emphasis is needed on nurturing core competencies such as team skills, communication and problem-solving. However learning needs to become embedded in day-to-day working practice rather than existing only as a separate activity.

In summary the Hi-Res analysis challenges the commonly held notion of 'best practice'. Rather, as Chapter Three argues, it provides a perspective in which organisational renewal is inspired and resourced by both external and internal factors; it portrays change as the dynamic interplay between people, structures, technology, cultures, histories, resources and the wider environment. Using the three conceptual arenas outlined in Chapter One – organisational knowledge, partnership and teamworking – the analysis seeks to identify the common challenges, choices and design principles characteristic of high road organisations, aiming to avoid the prescriptions of some change management recipes and checklists. The approach stresses the interconnectedness of development strategies in these arenas, seeking to avoid the problems associated with reductionist accounts of change which focus on single factor effects and linear causalities. Organisational innovation is not a rational, incremental process and any attempt to capture its complexity will have major failings. However it is hoped that the approach developed here facilitates a more dynamic portrait of the characteristics of the high road.

The remainder of this Chapter explores the arenas in greater detail, drawing on both research evidence and case study material to elaborate the nature of the design spaces characteristic of the work organisation process.

Principal characteristics of new forms of work organisation discussed here are:

Knowledge, innovation and creativity

Workplace partnership, involvement and participation: the capacity for organisational innovation

Job design and teamworking

Teamworking, partnership and organisational knowledge

Animating and sustaining organisational innovation
• The design space
• Recognising challenges in advance
• Changing the wider organisational structure
• Developing team-based roles and responsibilities
• Reforming organisational systems and procedures
• Developing a new organisational and management style.

Knowledge creation, innovation and creativity

As we have argued, knowledge, innovation and creativity are seen as the driving forces for the company of the future. It is increasingly the intellectual capital of an organisation – not the physical capital – which creates value and growth. As Chapter Two argues innovative potential is seriously constrained by traditional models of work organisation which separate the conception and planning of work on the one hand from its execution on the other. This separation fundamentally challenges the ability of employees to exercise control and autonomy in their working lives (Hague, 2000); equally it denies organisations access to the tacit knowledge and experience gained by employees, and limits the scope for functional flexibility. In the innovative organisation, employees at all levels require an overview and insight into information across all aspects of production and service delivery: only then can they work creatively on new solutions. At BorgWarner, for example, all employees are entitled to see all the company's financial records, and twice a year the two plant managers address the entire workforce on the state of the business.

East Midlands Electricity also adopted an open book policy, sharing business and market data with the workforce in an unprecedented manner. The company also explains developments in the regulatory environment; furthermore employees receive payments based on performance measures used by the industry's regulator such as safety, customer service and cash cost per customer. This further embeds understanding of the importance of business outcomes for employees.

In practice it is difficult to define the characteristics of effective knowledge-centred organisations. Constantly changing customer and market opportunities ensure that there can be no universal formula for organisational design and practice, though it may be possible to identify the strategic dimensions. Steven Goldman et al (1995) summarise the types of agile behaviour crucial to smart organisations in terms of:
- customer focus;
- commitment to intra- and inter-organisational collaboration;
- organising to master change and uncertainty;
- maximising the impact of people (entrepreneurial culture) and knowledge (intellectual capital).

Employee knowledge coupled to intelligent use of technology is increasingly the most valuable asset for an organisation in improving its capacity for innovation. French and Bell (1990) define an organisation's problem solving and renewal processes in terms of its ability to:
- constantly generate new ideas;
- translate these new ideas into products or services;
- ensure the widespread distribution of knowledge gets spread to employees throughout the organisation.

When Cap Gemini merged with Ernst & Young Management Consulting, the new organisation set out to offer its customers integrated solutions in the fields of both strategy and IT consulting, in other words a new synergy between technical and business skills. To support the new approach an inventory was made of good practice at global and national level in both enterprises; most of the IT consulting practices came from Cap Gemini and most of the management and strategy practices came from Ernst & Young. A comprehensive portfolio of working methods was thus made available to all employees in the new organisation. As part of its organisational change initiative a construction company, Skanska Sweden, sought to reduce production times, improve

quality, cut costs and increase motivation. The company recorded the new working routines across its portfolio of projects which were then put on a company intranet for all to access. Unfortunately the aspects of work that this project sought to change were mostly undertaken by white collar workers; blue-collar workers were in any case excluded from the sharing of information and knowledge because they lacked access to computers. The Föreningssparbanken case study cited in Chapter Three provides a further example, notable for its longer-term, strategic focus.

Current experience suggests that the practice of knowledge management is not as successful in achieving this vision as it should be. Practice is predominantly technology oriented with the primary focus on databases capable of centralising the capture of experience and information from employees. Little attention is directed to the limited use of knowledge management systems in actual practice (Damodaran & Olphert, 2000) or to the limited integration of knowledge management systems into the achievement of company goals (Strikwerda, 2000). Much of the literature only demonstrates the technological possibilities of database systems, ignoring the social and organisational practices which facilitate the effective capture, appraisal and utilisation of knowledge.

Managing the knowledge and innovation process is clearly crucial. It is not sufficient to regard knowledge management simply in terms of databases into which innovative ideas and practices can be captured and stored. Rather, knowledge creation and distribution have to be understood in terms of the social processes which engender and support learning and innovation through interaction, testing and reflection. Knowledge needs to be continually refreshed by a complex pattern of both internal and external interactions.

Some organisations have established institutional mechanisms to support this process. TietoEnator is a Swedish management consultancy supplying IT services. Operations have been broken down into six sector-orientated business areas, and a TietoEnator Academy has been created to meet a need for expertise in each business area. Employees are given the opportunity to acquire knowledge continuously and individually, and the Academy is available via the commuter network in the workplace. This helps individuals to understand what its customers' customers want, and to develop products and services which satisfy these wants.

An important distinction has to be made in this context between two important concepts: the learning organisation and learning within organisations (Shapiro, 1998). The distinction between the two is that the former represents more than the sum of the people within the organisation: organisational structures, cultures and practices can bring about learning and adaptation within their own right. Thus Garvin (1993, p.80) refers to the learning organisation as:

"an organisation skilled at creating, acquiring and transferring knowledge, and at modifying its behaviour to reflect new knowledge and insights."

At the most basic level, learning in this context can emanate from repeated tasks and activities which result in progressive adaptation and greater efficiency. At a higher level however the learning organisation progressively modifies its structures, technologies, practices and cultures to maximise and utilise the learning capabilities of its people (Shapiro, 1998; Stalk et al, 1992).

Critically:

"Although organisational learning occurs through individuals, it would be a mistake to conclude that organisational learning is nothing but the cumulative result of their member's learning. Organisations do not have brains, but they have cognitive systems and memories." (Hedberg, 1981, p3).

Organisational structures, technologies, practices and cultures either help or hinder organisational learning and innovation. This re-emphasises the importance of the distinction between individual and organisational learning. Argyris (1977) distinguishes between single-loop learning (in which the need for improvement is identified by individuals but where the objectives and policies of the organisation remain essentially unchanged) and double loop learning in which the organisation has the capacity to reflect on itself and to develop appropriately adaptive behaviour (Shapiro, 1998). In this context double-loop learning can clearly be identified as an essential pre-condition for the reflexivity characteristic of the high road, echoing the emphasis on dynamic balance between organisational innovation and product/service innovation. However there is also widespread agreement that organisational learning is dependent, at least in part, on learning by individuals within those organisations (Shapiro, 1998). The need therefore is for a better understanding of the nature of knowledge and how it is manifested within organisations.

Most definitions of knowledge follow Polanyi (1966) in distinguishing between tacit and explicit knowledge. Tacit knowledge is typically learnt by doing and not articulated. Explicit knowledge can be learned in a number of ways – from books, courses or group interaction for example. Nonaka (1994) focuses on the way in which knowledge is created in organisations through conversion:
- from tacit to tacit knowledge, for example in team-based organisations in which the sharing of experiences and perspectives is facilitated through observation and practice;
- from explicit to explicit, achieved through social processes including meetings, team development, inter-team communication, the documentation of existing knowledge and the shared use of IT systems;
- from tacit to explicit, which takes place through meaningful dialogue in which team members are able to articulate practices normally taken for granted;
- from explicit to tacit, a process closely linked to experimentation and learning-by-doing.

Nonaka argues that the creation of organisational knowledge rests on a 'dynamic interaction' between the four modes of knowledge conversion. Certainly this shifts the focus from individual learning to the interaction of individuals within the organisation. From the Hi-Res perspective, the design of work organisation determines the extent to which the conditions for such interaction are provided through the provision of opportunities for dialogue, teamworking and innovation in day-to-day work. Esbjerg Centralsygehus, a Danish county hospital, found that lack of interdisciplinary co-operation was a barrier to creating both physical and social space for dialogue between staff, and has developed a team-based approach to address this.

Autoliv, a Swedish manufacturer of automotive products, set out to develop teamworking as a means of using more of the organisation's knowledge in its production and development work. It introduced just-in-time techniques, target-monitored teams and new approaches to product development. As well as generating faster reactions to market requirements, a better capacity to

meet delivery deadlines and lower costs, the result has been a considerable improvement in the capacity for innovation with turnover increasing by 800% over ten years.

Regular team meetings play a key role in everyday co-ordination, though the ability to capture and share experiences, and promote reflection, may well require additional investments of time. BGB Engineering for example has a ten minute meeting every morning which is very focused and addresses any problems or production issues before the team starts work. However the company also spends a great deal of time in enabling people to take a step back from day-to-day problems and look at their jobs differently, brainstorming ideas for improvement. Employees have been trained to use process flow charts which highlight savings, delays and transport problems. Weekly meetings may provide the opportunity for deeper reflection on working practices. A Dutch building company, Hollandse Betongroep, has self-managed construction teams. They write task plans, manage their own budgets and are responsible for safety, quality, logistics and materials, as well as for completing the construction work on time. There is a weekly meeting where all these issues are discussed, but which also provides opportunities for dialogue on a wider range of issues and can be a significant source of workplace innovation.

As these case study examples suggest there is widespread evidence to suggest that teams are the key learning unit in organisations (Argyris, 1992; Kofman et al, 1993; Senge, 1990; Stata, 1989; Takuchi & Nonaka, 1986), though it is critical to understand the characteristics of team practice which make this possible. Nonaka (1990) refers to the role of 'redundancy' (perhaps better described as organisational slack): in short providing the organisational spaces in which individuals can come together to share knowledge and to consider new perspectives. As several of the case studies demonstrate, this both challenges traditional hierarchical and horizontal demarcations and demands that all employees have equal access to company information and creative opportunity. Ericsson Radio in Sweden, for example, actively encourages all employees to use its "Green Rooms" at any time for personal reflection, de-stressing or creative dialogue (Hague, den Hertog, Huzzard and Totterdill, 2003). This approach stands in stark contrast to those accounts of Japanese quality circles in which each worker is expected to contribute suggestions for improvement at regular, perhaps weekly, intervals (Guest, 1998) - a distinctively 'low road' approach to innovation.

Likewise the measures used to assess organisational performance are critical to sustaining knowledge creation and creativity. In an environment which places a premium on the ability to reinvent products and services continuously, 'productivity' needs to measure an organisation's level of innovation and not just its quantitative outputs.

However the organisational locus of innovation is becoming hard to locate (Jervis, 1998). Innovation is increasingly associated with both intra- and inter-organisational networking rather than individual research teams or enterprises, a factor which will be discussed in the Section on teamworking later within this Chapter.

In summary we have argued that organisational performance increasingly relies on the ability to develop and deploy employee knowledge as a shared resource for continuous improvement and innovation. It is this which drives the emergence of new forms of work organisation in Europe, hinging critically on workplace partnership and involvement, job design, teamworking, employment patterns and the use of technology. These issues are explored in the following Sections.

Workplace partnership, involvement and participation: the capacity for organisational innovation

Differences in workplace social partnership in EU member states reflect wide variations in European culture, industrial relations heritage and trade union strength. In Germany for example works councils have legal rights and work closely with trade unions, which themselves enjoy certain constitutional guarantees. In contrast in the UK, with its strong voluntarist tradition, employers and government will not willingly embrace legally empowered models of employee representation. Scandinavian co-determination approaches are frequently cited as having produced an approach to industrial relations in which both parties share a sense of responsibility for the success of the organisation. The Netherlands also has very low strike figures and a well-established system of works councils. Dutch unions are much weaker than in Germany and works councils therefore operate almost independently from trade unions.

There may also be differences between sectors in particular countries, such as that between the pattern of industrial relations traditionally seen in manufacturing with its high union density, and that seen in the service sector where union densities tend to be lower. There may also be differences between the public and private sectors.

At its most basic level, workplace partnership is a way of dealing proactively with industrial relations issues, ensuring early consultation on pay and conditions, employment changes and organisational restructuring. However emergent thinking moves workplace partnership away from its traditional focus on industrial relations, recasting it as a potentially important driver of, and resource for, organisational innovation in the broadest sense (Dawson, Knell & Totterdill, 2002). In Ireland, for example, social partners and government identify workplace partnership as central to the modernisation of work organisation (IPC, 1999; Sharpe & Totterdill, 1999). Involving employees in both design and implementation activities can help to ensure 'ownership' of the process and alleviate some of the problems of inertia and innovation decay seen in many projects. In this respect, partnership is not viewed as another managerial fad for coercing employees to endorse management strategy, but a framework for animation and driving innovation.

Emhart Fastening Teknologies, a US owned rivet manufacturer operating in the UK wanted in the first instance to improved industrial relations as a means of preparing the ground for greater functional flexibility. Discussions on workplace partnership were instigated as far back as 1987 and agreement was finally reached in 1994. Initially this led to the introduction of total quality management and self-directed teams. Since then, the joint approach has inspired further workplace innovation including team-orientated problem solving, a new job evaluation scheme and the achievement of an important quality award. Partnership is an integral part of the company's plans for further modernisation and development, while employees certainly have no desire to turn the clock back. The establishment workplace partnership emerges from the case study as a defining moment in the improved performance and atmosphere of the company. Partnership has lent vitality and success to a series of change initiatives, each one building on the lessons and achievements of its predecessors.

The Irish experience also demonstrates that participative forms of work organisation can have beneficial effects on the climate of industrial relations. Many organisations were prompted to move

to partnership by a history of poor industrial relations, manifested in strikes, which prompted both management and unions to conclude that there must be a better way of relating to each other. At Waterford Crystal, for example, a three-month strike, a 25% cut in wages and a halving of the workforce was a grim starting point for a partnership relationship, which began in 1994 with the signing of a new agreement. Since then unions and management have worked constructively and harmoniously on the restructuring of the plant's manufacturing function, backed by heavy investment in training and information and consultation.

Partnership and participation in their fuller senses have to permeate all levels of the organisation. Representative structures and measures such as partnership agreements, works councils or employee directorships may play an important role in anchoring partnership firmly within the practice and culture of an organisation. However they are not in themselves sufficient to ensure the direct involvement of employees in day-to-day decision making, enabling their full knowledge and experience to be utilised in identifying opportunities for innovation.

Direct forms of partnership may be introduced to deal with a wide range of issues, for example:
• steering and informing organisational change;
• reviewing performance at all levels of the organisation;
• initiating contact with other stakeholders;
• devising alternative reward structures;
• reviewing working practices and working time;
• considering technological options;
• introducing teamwork;
• implementing family friendly policies;
• assessing and reviewing the role of management;
• harmonising partnership and industrial relations developments;
• anticipating potential legislative impact.

In part such direct employee involvement is a product of effective job design and teamworking (see the following Section of this Chapter) but wider measures such as permanent partnership forums (IPC, 1999) or ad hoc change conferences (Gustavsen, 1996) – both of which establish avenues of dialogue bypassing conventional line management structures – are important ways of maximising the innovative potential of employee involvement and participation.

Blue Circle Cement moved to high levels of employee involvement and participation as a result of a partnership agreement entered into when the company faced difficulties in the 1990s. Blue Circle has mechanisms for both representative and direct participation. Local action teams bring together managers and shop stewards at each plant to discuss ways in which plant efficiency can be improved. These local teams quickly identified dozens of ideas to improve the operation of the plant. In addition there is a company-wide action team consisting of 16 shop stewards, four works managers and four head office personnel. There are also improvement teams comprising process and craft workers taken off their normal duties, who go round their own plant identifying and implementing improvements. Membership of these groups is rotated among the workforce. Other mechanism enable shop-floor workers to make suggestions for change which are then signed off by the unions.

Of course the development of effective partnership practice may require considerable resourcing in the early stages, but in the longer term strategies based on employee involvement are seen to provide more effective and sustainable outcomes. In the same way training and development may

help employees to participate in collaborate practices, and this can be particularly crucial for employees whose work experience has previously been limited to isolated and fragmented tasks. Assembly workers at a Dutch cable production company found it difficult to adapt to the self-managed team concept, and a great deal of training and support was required to help them do this. This inevitably delayed the change process but contributed to its sustainability.

Indeed 'bottom-up' approaches need careful preparation and the use of validated tools to promote dialogue and organisational learning. Above all there needs to be an acceptance by management that lean, cost-driven organisations can rarely be innovative organisations. As the previous Section of this Chapter argued, a degree of slack is needed in which dialogue may take place, both to create change and to support continuous improvement. In the case of Vestre Kirkegaard, a Danish municipally-owned cemetery in which gardeners and maintenance workers secured more direct participation in day-to-day work, a key factor in the success of the project is that 'there was time and space for discussions about work organisation', and that this allowed the workforce gradually to become committed to the project. The process was led by employee representatives (it had been the employees' idea to instigate the project) and a union consultant funded by the municipality.

Recent experiences have shown that developments in networks between companies can form a productive platform for bottom-up approaches by bringing employees together to work on common development tasks. Likewise new tools and methods, such as employee videos, job swaps between companies, forum theatre and café seminars facilitate the sharing of employees' experiences and creativity (Hague, den Hertog, Huzzard and Totterdill, 2003; Banke and Holsbo, 2002).

Employee involvement and participation also challenges senior and middle management prerogatives, exposing decisions and styles to much greater scrutiny. At a minimum this requires the acquisition of new competencies by managers. In practice, however, middle and senior managers rarely appear to receive training in the new ways of working. A Swedish transport company which introduced a balanced scorecard management control system, which had employee focus at its centre, was an exception. Here 800 managers (out of a total workforce of 10,000) were sent on courses on the new system.

Finally partnership has been observed to advance in organisations where trust can be established between stakeholder groups. For some organisations this may extend to agreements on employment security, for others this may mean removing some of the symbols of hierarchy and privilege such as management car parking spaces or staff-only canteens. Communication structures which integrate partnership practices with day-to-day workplace and management issues are of critical importance. Partnership forums and change conferences, for example, need to give great consideration to membership, wider consultation and the communication of key decisions. Partnership may also be extended into areas of financial participation. This may include a range of practices include rewards for suggestions schemes to profit-sharing or share-ownership.

Job Design and Teamworking

Partnership from the high road perspective moves beyond representative structures and participation mechanisms to make a direct impact on the task environment. Building a workplace in which employees can develop and deploy their competencies and creative potential begins with job design. According to standards of job design developed in The Netherlands (Totterdill, 1997),

for example, employees at all levels should be able to assume responsibility for day-to-day decisions about work through co-operation or communication with others. Systematic opportunities should exist for problem solving through horizontal contact with peers. The ability of the employee to adapt the execution of work to changing demands, circumstances and opportunities is an essential prerequisite for occupational learning and reduces stress. The job should contain demonstrable opportunities for analysis, problem solving and innovation, in which the working environment is a place of learning. A high frequency of horizontal and vertical contact is required to support problem solving, learning and innovation, taking the form of ad hoc co-operation, formal and casual discussions, and possibly social contacts outside the work sphere. 'Distributed intelligence' throughout the organisation is also required to support problem solving, ensuring that knowledge and expertise are widely shared or readily accessible by individuals throughout the organisation. However effective job design must develop in synchrony with the wider organisational context. The key concept here, once again, is teamworking.

Teamworking has been one of the defining characteristics of new forms of work organisation, with deep roots in European thinking about management and organisation dating back to the work of the Tavistock Institute in the 1940s and 50s (see Chapter Two). More than two-thirds of the case studies analysed in the Hi-Res project involve some form of teamworking and, though the sample is not designed to be representative, this gives an indication of its significance as an organising concept in workplace innovation. Other research evidence, for example the Employee Participation and Organisational Change (EPOC) study, also stresses the importance of teamworking while demonstrating that high road approaches are not widely used (European Foundation, 1997).

The current interest in teamworking dates back to its rediscovery in North American manufacturing during the mid-1980s, since when the concept has spread widely into other areas of work. Among many other recent examples the Hi-Res study has shown that team-based approaches can be found in financial services, health, government and transport. Interpay, a clearing house for interbank payments in the Netherlands, introduced self-managing teams within an ICT department employing 125 people. Esbjerg Centralsygehus, a Danish county hospital reorganised a surgical ward along team lines. The 48 nurses, four secretaries, three consultants and a number of temporary junior hospital doctors are organised in a team structure designed to break down interdisciplinary barriers and to improve the standard and continuity of care. An increase in competition and more demanding customers prompted Province Gelderland, a Dutch civil service department, to adopt a new model of work organisation based on teams, while a Swedish transport company also adopted teamworking to help it deal with the increased competition and the need for customer orientation which resulted from deregulation. A more unusual example is that of Vestre Kirkegaard, sited above. Employees heard about a municipally-funded project to reduce sickness absence and decided to take part. The project involved a transition from heavily supervised work to a new approach in which employees took more responsibility for tasks and had more influence on planning. Autonomous workgroups were set up and in consequence the style of management changed significantly.

In almost any context the scope of a team's responsibilities can include any or all of the following (Procter and Sherrin, 2002):
• work allocation;
• work pacing;
• staffing issue such as recruitment and training;
• improvements to the process.

However 'teamwork' is increasingly used to describe such a diverse range of workplace situations that arguably the term has become meaningless. While teamworking may refer to a general 'sense of community', or a limited enlargement of jobs to enhance organisational flexibility, in a high-road sense teamworking will involve a radical re-appraisal of jobs, systems and procedures, throughout the whole organisation.

Mueller and Purcell (1992) attempt to clarify the modern conception of teamworking by drawing on the definition used in GM/Opel:
• the team works on a common task;
• its work is spatially concentrated and it has a recognisable territory;
• the allocation of tasks is largely organised by the team;
• the team encourage and organises the acquisition of multiple skills;
• it has decision-making power over time and appropriate means;
• there is team spokesman/leader;
• the team has some influence on who will join it.

IDS (1992) defines teamworking as "the formal organisation of the workforce into distinct, permanent teams of workers". What distinguishes a team in the sense used here from a collection of workers who merely work in the same department is the degree of autonomy it enjoys in relation to formal line management structures. However it is also necessary to consider the quality of dialogue and innovation which takes place inside the team. If teams are to be more than decentralised units for the production of a given product or service, all team members must have the potential for a high level of reflexivity unconstrained by internal demarcations and privileges (Gustavsen, 1996). Teams in which the specific knowledge and expertise of each team member are valued and make a tangible contribution to product and workplace innovation meet important criteria for convergence between enhanced productivity and enhanced quality of working life.

What is important here is that the concept of autonomous working groups emerges as a spontaneous, intuitive response to certain working conditions (Buchanan 1997). In contrast to more recent organisational approaches such as Business Process Re-engineering it was not something invented by consultants and imposed upon organisations. Rather it emerged from much more fundamental considerations about the way in which work should be organised and its value is therefore likely to be longer lasting. In Buchanan's words, teamworking is subject to an 'eager and enduring embrace'.

Yet as macro-level studies demonstrate (see Chapter Two), effective teamworking is far from common practice in Europe. The majority of organisations make no more than concessionary efforts to introduce team practices. Even where a focused attempt is made to introduce teamworking, the reality often falls far short of the potential. Buchanan and Preston's study of a 'manufacturing systems environment' within a producer of high-precision components concluded that the 'radical potential' of the cellular team structure was not being realised. Many of the Hi-Res case studies reveal a long process of experimentation, learning and refinement. In order to capture the benefits of teamworking a full understanding is required both of the concept itself and of its wider implications for the way in which organisations are managed, especially its interconnectedness with the knowledge creation and workplace partnership practices discussed earlier in this Chapter.

Teamworking, partnership and organisational knowledge

We have argued that teamworking cannot be seen as an isolated innovation within an organisation. Rather it has much wider implications for work organisation and management, and in the high road context is closely interwoven with the knowledge and partnership dimensions discussed above. This is illustrated in Figure 2 (below) which demonstrates the relational pathway between teamworking and the wider organisation.
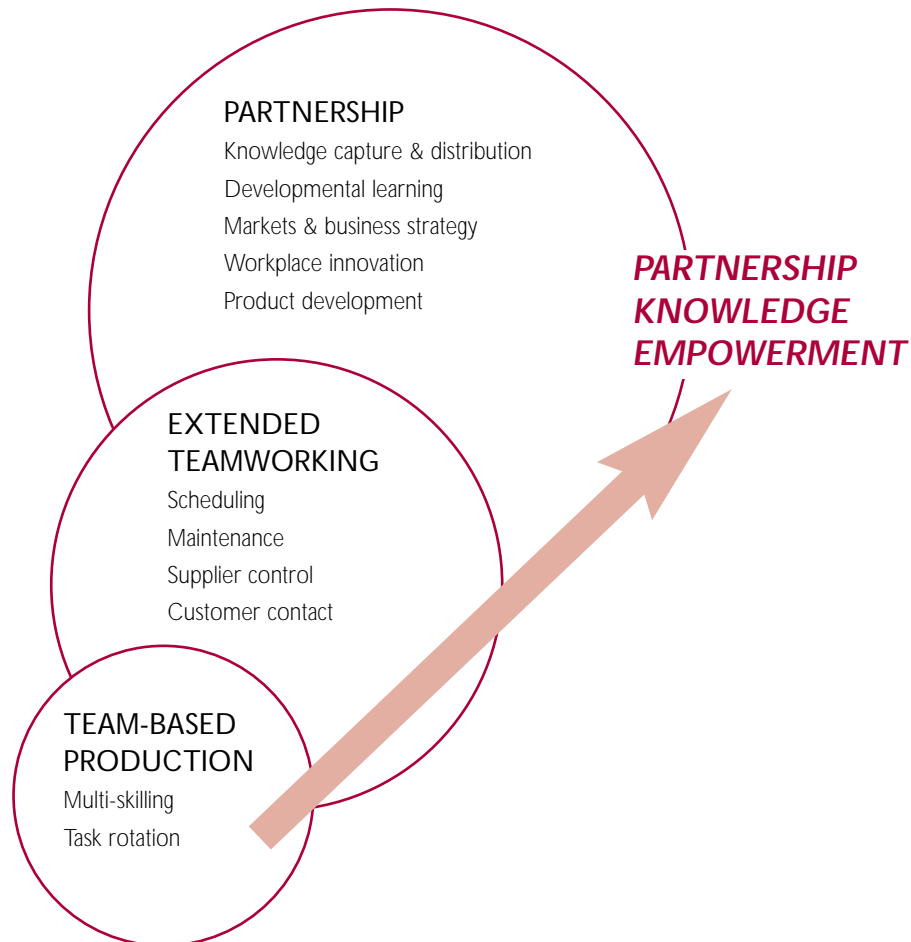
PARTNERSHIP
Knowledge capture & distribution
Developmental learning
Markets & business strategy
Workplace innovation
Product development

PARTNERSHIP KNOWLEDGE EMPOWERMENT

EXTENDED TEAMWORKING
Scheduling
Maintenance
Supplier control
Customer contact

TEAM-BASED PRODUCTION
Multi-skilling
Task rotation

Figure 3: Teamworking, Partnership and Organisational Knowledge
Source: Hague, den Hertog, Huzzard & Totterdill, 2003.

Team-based approaches can be designed according to both low road and high road rationales. Teamwork can mean little more than multi-skilling and job enlargement on the floor of a factory, office or clinic. At this basic low road level, functional flexibility achieved through job rotation can achieve tangible gains for the employer, though in many such cases job enlargement can result in greater employee pressure and stress rather than job enrichment. The Ecco case is interesting in this context: when the Danish shoe manufacturer piloted a lean production system, the employees turned it down because the resulting job enlargement generated too much stress. Management supported their decision and the company reverted to its home-grown group working system which, although characterised by complete job rotation, gave employees greater control over day-to-day decision-making.

Certainly the extent to which teams enjoy control over the work environment is critical. Thus high road teamworking achieves flexibility but does so by enabling employees to take overall responsibility for the production of the product or service. Within the team this will involve significant latitude for autonomous scheduling and planning. However it will also lead teams into external problem solving and innovation through direct involvement with customers, suppliers and other parts of the supply chain, rupturing the organisational boundaries of 'classic' workgroups (Hague, den Hertog, Huzzard and Totterdill, 2003).

Extended teamworking is evident in Volvo Aero, Sweden, which manufactures jet engine components. The company integrated blue and white collar workers into teams which independently plan and carry out their work, taking responsibility for contacts with suppliers, programming of machines, production technology and quality assurance. They also determine the level of overtime to be worked and can allocate free time of up to one day. The organisation has built on its experiences from these production units, appointing 'methods owners' who have the responsibility for supporting the production units and encouraging technical development with the provision of in-depth expertise. Cross functional product teams have also been established.

Inter-organisational teamworking between customers and suppliers is likely to increase with the emergence of complex product networks facilitated by ICTs, involving frequent horizontal collaboration between employees at all levels. Extended teamworking of this sort offers a positive trajectory for quality of working life, offering scope for personal development through self-direction, building wider relationships and participation in both operational and strategic innovation. At this point teamworking begins to blend seamlessly with partnership and knowledge creation, becoming the locus for active involvement and participation for employees at all levels. Teamworking becomes a mode of operation within the organisation as a whole, embracing the types of workgroup described in the Mueller & Purcell definition cited above, but also creating much wider opportunities for dialogue, reflection, creativity, innovation and improvement by cutting across horizontal and vertical demarcations.

Individuals may therefore be involved in several teams dealing with different levels of activity, from day-today operations to strategic development issues. For example, in a hospital context a nurse could be involved in a specific ward or clinical team, a 'pathway' team designed to provide patients with integrated care across different functional boundaries, a development team concerned with issues relating to the nursing profession, and an organisation-wide clinical governance team. In the high road, the common factors which define such diverse teams will not be in terms of structure or membership but rather in the nature of practices relating to dialogue, decision making and accountability. High road teams, whether operational or developmental, will become arenas in which the knowledge, experience and creative potential of all participants are captured, and in which the force of the better argument – rather than the force of managerial prerogative – is the principal, determinant of outcomes (Gustavsen, 1992; Senge, 1990).

This new fluidity in team-based working is closely linked to increased pressures for creativity and innovation in the production of goods and services. The tayloristic separation of day-to-day operations and development functions has long been understood to extend the trial and error cycle in the introduction of new products and services, inhibiting flows of information between operational and developmental functions and preventing the tacit knowledge of operational employees from being utilised within the innovation process. Likewise operational staff have to deal with the consequences of poor fit between the design of new products or services and their actual delivery, often leading to repeated iterations in the development process.

Ecco confronted this problem head on. The work had traditionally been carried out on Taylorist production lines, all of which had 20 employees, each performing one simple task. Then the work was reorganised around autonomous groups consisting of six or seven employees, each able to carry out all the production tasks and take part in decision making. This resulted in increased productivity and employee satisfaction. Machinists are now able to discuss, challenge and modify the orders received from the designers and technicians, and are expected to generate practical guidance that will make production cheaper, easier and more attractive. In effect, they are debugging new designs before they are sent to subsidiary companies for manufacturing.

ABB Cewe, a Swedish manufacturer of electrical switchgear, took clear action to close the gap between design and production functions by relocating development engineers onto the shopfloor. A distance of 30 metres along the corridor, it was argued, was sufficient to prevent adequate flows of information and knowledge between the two areas of activity. Direct involvement of production employees in the development process has reduced lead times, reduced production difficulties and enriched jobs. Similar results were obtained when ABB LVS integrated activities such as marketing, order processing, assembling and testing into work of the teams.

Such initiatives which simultaneously challenge both horizontal and vertical demarcations remain rare, but provide a vivid illustration of the 'radical potential' of teamworking in building high road organisations.

Animating and sustaining organisational innovation

We have argued that the high road is a process and not a fixed point of arrival. It involves continuous learning, experimentation and reflection in each of the interdependent arenas described above. Many of the Hi-Res organisations have changed their methods of work organisation, in stages, over many years. At Ecco, for example, autonomous group working was first adopted in 1993 when the company's objective was to increase employee motivation. In 1996, when the company wanted to increase production flexibility, new technology was introduced and jobs were enlarged further making teams more self-sufficient. Four years later, jobs were changed again when the enterprise stopped mass production of shoes in Denmark and concentrated on developing and testing production methods for overseas manufacturers. This has resulted in an even more important role for a significant group of machinists who are now responsible for modifying designs and giving practical guidance on manufacturing techniques.

That the high road appears to be rarely achieved at the first attempt – and many organisations never achieve it at all - indicates that the process is a difficult one.

The design space

Change of the magnitude involved in creating a high road organisation is not easy. The characteristics of knowledge creation and distribution, partnership and participation, and job design and teamworking in any given case will reflect the context of the organisation and the process which led to its implementation. However the Hi-Res case study analysis confirms the findings of previous research that there are common issues and behaviours present wherever there is a real and sustained commitment to workplace innovation. The Hi-Res analysis points to the following design principles:

Recognising challenges in advance

Obstacles and setbacks are inevitable, but their impact on the change process can be minimised if they are anticipated and understood in advance. For example:

- the management style of the organisation may not be conducive to innovation, employee involvement or team culture;
- impediments to effective employee involvement or team operation may exist in the wider organisational structure;
- uncertainty surrounding change may cause antipathy and resistance amongst affected employees;
- there may be active resistance from those with vested interests in existing ways of working.

Changing the wider organisational structure

Knowledge creation, employee involvement and teamworking cannot operate effectively in unnecessarily hierarchical and functionally specialised organisational structures. Organisational redesign may be necessary to achieve:

- a reduction in hierarchy where certain layers are no longer necessary;
- a management role focused on coaching rather than policing;
- process redesign - teamworking may be effective only where teams are designed around customers or products rather than functions;
- reconstituted support systems - teams assume responsibility for support functions, or the functions are provided on a more accountable, responsive and flexible basis.

Developing team-based roles and responsibilities

High road change implies new roles and responsibilities for employees:

- jobs are based on team membership, multi-skilling and a product/service focus rather than on specific functional roles;
- agility is central to the way in which teams define their role: rapid and unexpected changes in pace, product or process are seen not as disruptive but as opportunities to acquire new competencies and experience;
- there is a sufficient degree of slack in working life to encourage and enable reflection and dialogue;
- problem solving, continuous improvement and innovation become an integral part of the job, which is supported by the necessary level of autonomy;
- teams are not leader-dependent, rather team members collectively acquire additional responsibilities in areas traditionally the domain of managers or supervisors;
- a key responsibility of team members is to share information, knowledge and experience, taking responsibility for each others' learning.

Reforming organisational systems and procedures

Even with the right organisational structure, new forms of work organisation will not be effective unless supportive systems and procedures are developed, for example:

- payment and appraisal must be geared towards the development of team-based culture and practice rather than individual reward;
- functional task-based training is inadequate and must be replaced by a commitment to multi-skilling and the self-efficacy skills required for teamwork and participation;
- trade unions can provide positive support within the framework of a partnership-based approach to industrial relations; this requires a wider acceptance of trade unions' ability to challenge management prerogative matched by a mutual commitment to constructive dialogue and shared knowledge.

Developing a new organisational culture and management style

The least tangible but most important and difficult change to achieve relates to culture and management style. For example:

- the development of a culture based on learning and innovation;
- the development of a high-trust management style;
- dialogue, within teams and between employees and management is valued and recognised as a valuable resource for improvement and innovation;
- decision-making is transparent and based on the force of the better argument rather than on management prerogative or 'the way things are done here'.

Conclusion

We have argued that work organisation is a reflexive process based on dialogue and negotiation, not a blueprint focussed on an end state. Running through the analysis of emerging forms of work organisation is a pervasive recognition of the need to develop and deploy the full competencies and creative potential of all employees, both in order to achieve sustained innovation in products, services and processes, and to make work a more rewarding experience. This presents the organisation with a need for learning and experimentation in a number of interdependent arenas relating to the stimulation of knowledge and creativity, workplace partnership and employee participation, and job enrichment and teamworking. These arenas offer the strategic and the operational potential for convergence between performance and quality of working life. However, while organisations need to draw extensively from external knowledge and experience, sustainable outcomes are those which have emerged through painstaking workforce dialogue, participation and testing based on an explicit commitment to reciprocity in the employment relationship.

The high road organisation needs to be well networked, able to draw on rich strands of thinking, research and practice from a wide range of sources. An abundance of learning resources, dialogue and opportunities for interaction are required to sustain change and this presents challenges for the EU, national governments, social partner organisations, development agencies and the research community. Chapter Seven will examine these challenges in depth and identifies the actions needed to overcome major obstacles to workplace innovation. Meanwhile Chapter Five sets the context for this discussion by examining the nature of these obstacles in greater depth.

Chapter Five

Obstacles and sustainability

Obstacles and sustainability

Introduction

There is no cosy fit between the external drivers for change and the internal arenas in which change is determined. Experimentation, reflection and learning are an inevitable part of change – and the obstacles encountered in this path are integral to the process of workplace innovation. However it is critical that obstacles are recognised and addressed; ignoring or delaying action may be tempting but is likely to undermine the sustainability of change.

Nevertheless both anecdotal and empirical evidence suggests that despite public funding, research and a plethora of change management guides, workplace innovation frequently achieves only limited success. Academics and practitioners now realise that managing and sustaining change is a complex process with inherent risks for both employees and the organisation as a whole. Over fifty years ago Lewin (1958) suggested that change could best be understood in terms of 'unfreezing, moving and refreezing'. Similar step or stage processes of change have more recently been proposed (Burnes, 1992 for example). However Dawson, (1994) Pettigrew (1987) and other researchers have contested these prescriptive models or recipes, claiming that organisational change is not as tidy or straightforward as some researchers and management consultants suggest.

This study's findings confirm those of research initiated by the European Commission's DG Employment and Social Affairs (Business Decisions Ltd, 2002): most organisations experience problems when trying to implement new forms of work organisation, and that organisational culture and resistance to change from all levels of employee are the underlying causes of many of these problems.

This Chapter discusses the obstacles or barriers which might be encountered during the process of workplace innovation. It illustrates how they can have a significant influence on the extent to which organisations achieve their change objectives. It also draws attention to some of the longer term implications for both employees and the sustainability of workplace innovation.

Inevitably particular types of workplace innovation such as knowledge management, partnership and participation, job redesign and teamworking are associated with their own specific obstacles. But it is clear that there are a number of generic issues common to most types of organisational change.

First, an organisational history of previous change initiatives that have either failed or attained only limited success can have implications for current attempts at workplace innovation. Second, most organisations encounter unanticipated difficulties during the process of workplace innovation. Senior managers often underestimate or are reluctant to dedicate the resources (in terms of financial investment and time) that are necessary for organisational change to be a success. Furthermore, in practice, senior management is not always committed to new forms of work

organisation. It also appears that many managers lack the skills and knowledge to facilitate organisational learning and change effectively.

Third, whilst employee resistance can represent one of the most significant barriers to success, it is clear that the implications of organisational change for the entire workforce can be overlooked by managers. Employees frequently express concern about lack of information and involvement in the change process. It would seem that many organisations fail to address the issues that would gain the support and commitment of the workforce.

The obstacles to implementing and sustaining change discussed in this Chapter are:

External obstacles
– External pressures
- Changes in the economic climate
- Changes in market demands
- Uncertainty of public support
- Changes in legislation
- Labour/skills shortages
- Public-policy frameworks

Internal obstacles:
– Effects of past change initiatives
– The process of workplace innovation
- Clarity of objectives
- Resources for organisational change
- Creating a readiness for change
- Communication and involvement
- Facilitating attitudinal changes
- Fragmentation of the workforce
- Management skills
- Support and training
- Reliance on external support
- New reward systems
- Timescale to realise the benefits
- Concern about the implications of change
- Job security remains a key concern
- Potential to feel undervalued
- Increased performance and responsibility
- Perceived loss of power and authority

Sustainability of change
- Organisational factors
- Skills
- Industrial relations
- Dependence on key personnel

External obstacles

Changes in the economic climate

Changes in the economic climate can cause havoc with workplace innovation by undermining the financial basis on which they rest. Cloetta Produktion, the Swedish confectionery manufacturer, achieved a great deal from its change initiative but is aware that its achievements could be wiped out by significant increases in the price of raw materials. Economic conditions may also create an unrealistic sense of urgency for change. At Tara Mines for example, the world price of zinc continued to drop significantly after the introduction of workplace partnership and teamworking practices. Faced with pressure to reduce production costs, management was forced to introduce changes more rapidly than had been originally planned by the partnership committee. Neither the workforce nor the new methods of work organisation were sufficiently prepared for the accelerated rate of change and Tara Mines failed to meet the objectives dictated by the parent company.

Changes in market demands

Evidence from the case studies indicates that the success of a change initiative is strongly influenced by the state of the market. Waterford Crystal claimed that favourable market conditions and a supportive external environment sustained its change process, expressing concern about the potential influence of a less favourable external environment on its sustainability.

When Cap Gemini and Ernst & Young merged, the new company changed the way it offered IT services in Sweden. But the new organisational structure had been constructed for boom times, and when the IT bubble burst in April 2000 the approach was seriously undermined.

Significant changes in market demand beyond the organisation's control had an impact on Kingspan, creating problems in sustaining change. Likewise Bausch and Lomb were aware that a fall in market demand could place pressure on the company to reduce costs with implications for the training and development budget, limiting opportunities to build the skills base on which sustained organisational innovation depends.

Whilst a decline in customer demand can affect the progress and success of organisational change, an increase in demand can also have a significant impact. AT SNS for example, the new production system was unable to cope with the sudden unexpected growth in the market. Newly recruited staff brought in to cope with the increased demand were inexperienced, affecting both performance and the ability to deliver goods on time. Fredricsons Trä, a Swedish importer and wholesaler of wood and wood based products, had a similar problem. Management found that the decentralisation process took much longer than expected because employees in certain functions, such as logistics, lacked the level of education needed to be able to cope with the new processes. Off-the-shelf training programmes were inappropriate because employees needed to be knowledgeable about the company's specific products. In short, these companies had not provided the supporting infrastructure required to build and sustain the skills associated with new forms of work organisation.

Uncertainty of public support

Support from public programmes or organisations was instrumental in the achievement of successful change in several of the case study organisations. Many however expressed concern that if support was withdrawn, companies would be less likely to modernise work organisation. (Indeed in the majority of EU countries there is only very limited public support for workplace

innovation). For example strong support for the principle of workplace partnership is demonstrated by enthusiastic endorsements from Irish employers and trade unions, and subsidised assistance through programmes such as *New Work Organisation in Ireland.* This has encouraged several employers to embark on the process of generating a new industrial relations climate as the basis for workplace innovation. One of these companies, Tegral, suggested that organisations might not be prepared to invest in such change without the type of publicly funded support which enabled them to employ external expertise. Likewise Dublin Fire Brigade expressed concern that a partnership approach to change might not survive if national interest and support declines.

Changes in legislation

Just as change in private sector companies is vulnerable to volatile markets, organisations working in the public sector can experience difficulties in sustaining change because of shifting policy priorities. The changing policy environment can be incompatible with internal change objectives. For example public sector initiatives designed to improve organisational efficiency and quality of working life for employees would certainly be threatened by privatisation and competitive tendering. Where regulatory structures are either weak or purely cost-driven, competitors can secure contracts on the basis of lower prices through a reduction in service standards. This is certainly seen as a threat by Renholdningsselskabet af 1898, one of Denmark's largest not-for-profit waste-handling companies which had introduced autonomous groups enabling employees to take on new tasks and responsibilities as a means of improving the quality of both services and working life.

Internal obstacles

Effects of past change initiatives

Research indicates that the scale of organisational change and the frequency with which new initiatives are introduced appear to be increasing (Buchanan, 1999). Perhaps most employees have experienced changes to working practice at some time during recent years. Many of the case studies describe how other change initiatives have preceded those described in the reports, with varying degrees of success. It is evident that a history of failed or partially successful initiatives could result in a negative attitude towards organisational change. In other words employees are likely to be influenced in their thinking about organisational change by their previous experiences. Indeed many employees become both sceptical and suspicious, seeing proposed changes as unworkable and driven only by management fashion. Managers therefore face real difficulty in gaining employees' commitment, convincing them of the benefits that workplace innovation might bring.

Atlas Aluminium for example had implemented a number of changes over recent years, all of which were only partially successful. The case study evidence suggests that management saw workplace partnership as a panacea able to overcome many of the major challenges facing the company. The workforce however was not optimistic that partnership would meet these (unrealistic) expectations. It was perceived simply as another change initiative in a long chain. At Bausch & Lomb, previous unsuccessful change initiatives had created scepticism amongst the workforce. Furthermore previous reductions in the workforce had generated fears of further job losses. Partnership was therefore perceived as a precursor to redundancies. Employees at Abrona, a Dutch not-for-profit service organisation providing services for people with learning difficulties, were unwilling to move towards self-managed teamworking because they were exhausted by the work required by a recent merger in which the current organisation had been created from two other institutions.

The process of workplace innovation

Previous Chapters have argued that change is an inherently messy process; most of the Hi-Res case studies tell stories of experimentation, reflection and learning, often involving temporary failure and the need to rethink the approach to change. Analysis of those experiences underlines several key issues:

Clarity of objectives

Many organisations and their employees are not adequately prepared for change. Objectives are not always clearly defined and the specific details of the process may not be adequately discussed beforehand. Consequently both managers and employees are often unsure about the intended final outcomes, resulting in confusion about new organisational structures and roles. The case study evidence frequently suggests that either management does not have a clear vision of where the organisation is heading, or that it fails to communicate the vision effectively. Not communicating the objectives of organisational change and not providing feedback about its progress appear to be a common failing.

Of course management and employees do not always share the same objectives. At Tara Mines, for example, there was a long history of adversarial relationships between management and trade unions, with which both parties were dissatisfied. They were anxious to find new, less confrontational methods of communicating and both parties readily accepted a partnership approach to changing the organisation. However it became apparent that management and employees had divergent aspirations relating to the outcomes of change. Management was intent on saving costs, an objective determined by the shareholders of the parent company. Employees on the other hand were interested in protecting or increasing their earnings. Furthermore they were concerned about job security and feared that management might be looking to reduce the workforce as a means of attaining their cost reduction objectives. This conflict of interests had a significant impact on the progress of the partnership in the early stages. Reconciling such differences inevitably involves long and patient dialogue.

At a Swedish railway company the main focus of the change was also on cost reduction. Financial indicators were central to the management of the initiative - despite the introduction of a balanced scorecard system which should also have focussed attention on employee development and the creation of attractive workplaces.

Conceptual models of change relating to knowledge, partnership and teamworking (such as that outlined in Chapter One) tend to argue that new ways of working represent an entirely different organisational philosophy, often emphasising continuous learning and innovation; in practice both management and employees tend to perceive change as both finite and focused on a specific objective. Both parties remain too narrow in their vision and appear not to recognise that the introduction of knowledge, partnership and teamworking is merely the starting point for sustained workplace change. This carries the danger that their full potential is unlikely to be realised, from either an organisational or an employee perspective.

Moreover it also runs the risk of innovation decay: without continuing momentum past achievements in organisational and cultural change can be easily eroded. Labofa, a Danish manufacturer of office furniture, found that autonomous work groups needed to be continuously refreshed and challenged if they were not to stagnate. This required constant investment to avoid innovation decay.

Chapter One argues that work organisation is a reflexive process. Initial objectives associated with organisational change are not fixed but will be subject to reflection and re-evaluation as learning and experience grow during the process of workplace innovation. Initial achievements may generate new awareness of the wider possibilities for innovation; in short the high road may be achieved by a series of reflexive steps, each gradually building knowledge and expanding the view of the horizon.

Resources for organisational change

Managers are not always aware of the resources that workplace innovation typically demands in terms of finance, time and effort. Alternatively they may simply fail to commit sufficient priority to the process. Innovation may take a longer time than originally envisaged, training may be more complex and may involve more people, and the change process itself may start to become open-ended, requiring a steady input of resources.

ECI, a Dutch publishing company introduced a mail order system to increase the supply of its products. Teleworking was identified as the most effective means of processing mail orders. Overhead costs could be reduced if employees worked directly from home. Furthermore, a home working policy might better suit workers with family commitments. However management did not accurately estimate the costs required to install new technology into employees' homes. Neither did they consider the logistics or costs of servicing and repairing geographically dispersed technology.

Time can represent a further obstacle to change. Organisations may not be prepared for, or will not commit, the time required for successful workplace innovation. SIFA found it difficult to manage the changes and to maintain the previous levels of productivity during the transition. At Atlas Aluminium, whilst there was support for partnership throughout the organisation, management representatives of the steering committee found it difficult to allocate time to attend meetings. Without management representation it was difficult to sustain the momentum of the group. Furthermore, as illustrated below, perceived lack of management support can increase the problem of gaining employee commitment to workplace innovation.

Creating a readiness to change

Both researchers and practitioners generally acknowledge that an organisation's success, now and into the future, is partly dependent on its ability continuously to change and develop. However research suggests that many employees tire of constant change, especially if they have little say in the process (see Chapter One). Initiative fatigue is increasingly cited as a problem in sustaining the momentum for change.

The case study reports consistently show that significant cultural changes are necessary if employees are to accept continuous change as a key feature of working life. Management in many organisations wanted to bring about behavioural and attitudinal changes from the shop floor through to senior management, Change needs to be accepted as an opportunity for individual and team development rather than as a threat. In practice companies such as RTE carried a history of bureaucratic thinking in which employees expressed apathy and cynicism towards change even though management recognised the need for workplace innovation. Ducati also found it difficult to change workers' attitudes. Dow acknowledged that after a series of change initiatives in the past employees wanted some stability. Although the company could not provide this, it encouraged

employees to accept the change to self-managed teams voluntarily and did not try to force them to do so.

Case study organisations, including Dow, demonstrate that it is impossible to introduce radical change without it having a significant impact on employees; management has to be realistic about this and seek ways of gaining workers' support. If common change problems are to be avoided significant behavioural and attitudinal changes are needed. The case study evidence shows clearly that it is important to develop the systems, support mechanisms and culture through which employees at all levels of the company welcome and become involved in continuous workplace innovation.

There is wide acceptance in principle of the need for employee involvement, effective communication, training and support. However it is also clear that there is a frequent discrepancy between management intentions and reality, with many organisations failing to address the issues most likely to gain employee commitment to organisational change.

Communication and involvement

If organisational change is to succeed, employees need to be involved from the inception. The benefits of effective communication and employee involvement are widely recognised. For over fifty years, academics and practitioners have proposed 'participative management' as a vehicle for change. Researchers (for example Coch and French, 1948; Vroom, 1964; Kotter and Schlesinger, 1979) claim that participation facilitates the communication of information about the nature of the proposed change and why it has come about, which tends to reduce resistance. The same research underlines the value of employee inclusion in the planning and execution of organisational change. Both practitioners and researchers speak about employee 'ownership' of change as a means of increasing motivation and commitment. However as this research and other studies have shown, there appears to be a low correlation between the existence of research on effective approaches to change and how managers conduct change initiatives in practice.

Many organisations initially failed to involve employees in the change process and did not consult them about decisions that could affect them. Because employees were not always clear about the objectives of change their subsequent commitment to it was weakened. Employees at Heineken felt that management had come with pre-conceived ideas about the new organisational structure and that their own contributions would be disregarded.

Evidence from Hoge shows that it is not only frontline employees who feel excluded. Middle managers were not involved and subsequently could not appreciate the relevance of the project, which they failed to support. Perceived lack of commitment from middle and junior management inevitably conveys damaging messages to the rest of the workforce.

It was also found that whilst some organisations take the time to explain the objectives of workplace innovation (often involving elaborate presentations) employees were not always aware of how change could affect their own positions. Furthermore employees receive little feedback about the progress of change. Researchers (Cooper, 1998, for example) suggest that uncertainty about the future can have a significant impact on stress levels and it is not unusual to find that absenteeism increases in the short term.

One of the principal characteristics of workplace partnership and involvement is that it provides employees with an opportunity to express views and ideas and thus contribute to workplace innovation. However some employers do not encourage workforce and trade union representation early enough, which has an impact on how partnership structures and practices are perceived within the workforce. In other cases there may be a tension between the direct involvement of employees and the formal role of representative bodies. For example a Dutch public services company carried out an elaborate participation exercise involving all employees in the redesign of work processes. However the outcomes could not be implemented without the permission of the works council which, management subsequently realised, should have been involved at a much earlier stage.

At East Midlands Electricity, some members of the management-employee partnership forum claimed that they had little influence over the change process. Important issues were not felt to be debated properly; employee representatives perceived the forum as no more than a 'sounding board' for managers to promote ideas that might otherwise be rejected.

Workplace partnership structures and their relationship to the wider workforce can also be contentious. Some organisations found that partnership forums or steering committees are perceived as elite groups. Employees not elected as members can feel excluded from dialogue surrounding organisational innovation. This was the case at Honeywell-Measurex where the partnership forum struggled to decide the extent to which discussion during its meetings should be communicated to the workforce. Often ideas are rejected after extensive discussion and it was seen as impractical and misleading to involve employees at an early stage. Yet whilst partnership represents an opportunity to increase employee involvement, organisations should also be aware that it can isolate employees not directly involved. Well structured communication practices can play a key role in addressing this problem.

Similarly there is evidence that not everyone in the organisation is encouraged to participate in knowledge management practices. In some cases there is a tendency for only those with 'certified knowledge' (educational degrees) to be included. Blue-collar workers were effectively prevented from participating in new forms of knowledge management at Skanska Sweden because they did not have access to the computers required to access the company intranet. Companies failing to capture the tacit knowledge and experience of less skilled employees are failing to maximise the full potential of the entire workforce, with potential consequences for both productivity and quality of working life.

Finally some companies found it difficult to disseminate employee involvement across the whole organisation. Pilot schemes introduced into parts of the company can make employees elsewhere feel excluded, leading to the suggestion that management are favouring parts of the workforce over others. At Mammut Work Wear, divisions arose between the pilot group and machinists not included in the first phase of change. This can be explained partly by the considerable interest which the pilot group attracted, but also because the break with taylorism necessitated a new way of calculating productivity. Against traditional measurements, the pilot group appeared to be far less efficient than conventional production line methods, leading to widespread allegations of failure by other employees. However the pilot group were performing better in terms of the new criteria against which they were being measured. Research evidence has consistently shown that if effective communication is lacking, employees tend to rely on gossip and rumours as sources of information. These are frequently inaccurate and do little to allay the concerns of the workforce.

When PTT wanted to move to teamworking, it organised training sessions for all employees including visits to other organisations with team-based structures. Departments could only then move towards teamworking if at least 80% of employees agreed in a secret ballot. After this, pilot teams were set up. When these proved successful there was little difficulty in rolling teamworking out more widely. Adequate involvement of all staff before the pilot process begins can therefore be an important factor in subsequent dissemination.

Facilitating attitudinal changes

New organisational cultures demand behavioural changes and new ways of thinking about work. An objective for many organisations is for employees to take more responsibility for their work and to understand their role in the work process as a whole. Employees will be more committed to organisational success if they appreciate their own part in achieving it. However whilst organisations have high expectations of employees, they often fail to provide appropriate information about the nature of the business as a whole.

The Irish manufacturer of contact lenses, Bausch and Lomb, encountered problems when it moved towards creating a world class manufacturing environment involving just-in-time and continuous improvement methods. Employees lacked knowledge about the overall nature of the enterprise. Business and financial literacy were placed at the heart of the change process, and all employees were encouraged to understand the key business ratios that underpin the company's performance. Financial and related business information is readily available to all employees and training is provided to enhance understanding. This has created a wider sensitivity to the external demands placed on the company. East Midlands Electricity also found it necessary to educate employees in business issues by adopting an open book policy, sharing business and market data with the workforce on an unprecedented scale.

Members of partnership forums or steering groups may well experience difficulties in adjusting to new methods of communication. Managers do not always find it easy to listen to the employees' point of view and to accept that all members of the group have an equal voice. Conversely employees do not always find it easy to challenge management's views. On occasions communication between the different stakeholder groups breaks down, with detrimental effects on employee morale and the progress of change. External consultants or facilitators can prove useful in such cases. At Fredricsons Trä, management obtained the services of a psychologist and a management consultant to help solve the conflicts between blue and white collar workers.

Improve dialogue and communication are central to new forms of work organisation, not just in relation to change but to everyday working practices. Employees should be encouraged to express ideas and concerns, but it can be hard to overcome the reticence and lack of communicative competence fostered by traditional work practices. In some organisations, such as SIFA, new approaches to communication met with particular resistance from older workers.

In many of the case study companies members of steering committees or partnership forums received communication and negotiation skills training. This proved invaluable to some members, enabling them to articulate their views more confidently to management. Training also enhances management's ability to listen to workforce concerns. Where resources are available such training is often extended to the entire workforce with consequent benefits across the organisation. However this is costly and organisations without the necessary resources are unable to extend training beyond the partnership group. Employees who are not involved may therefore find the new methods of communication difficult.

Scanglobe developed a method of animating dialogue between employees and management at the start in the change process. With some coaching from external consultants, employees produced a number of short videos about opportunities for improving work and efficiency in the production process. The videos were presented to management and formed the starting point for setting joint goals and planning workplace innovation.

Whilst the foregoing discussion suggests that management is not always fully supportive of organisational change and workforces are frequently unprepared, some employees remain persistently unwilling to face change. Tegral found that a minority of employees were happy with the status quo and were opposed to change. These individuals included supervisory personnel whose style was not conducive to a more empowered workforce, an issue discussed in more detail later in this Chapter. The partnership forum monitored the potential influence of these employees and countered their views. It also tried to accommodate individuals not wishing to change where it would not undermine core objectives.

The longer employees work under one system or follow a particular set of procedures, the more they appear to be attached to the 'old' ways. The influences of previous cultures and tayloristic ideologies are difficult to escape. At Mammut Work Wear, for example, this was the greatest obstacle to change.

Fragmentation of the workforce

Over time the high level of autonomy in self managed teams may lead to the formation of 'little islands'. Team members can focus efforts on the achievement of team objectives and overlook their contribution to the organisation as a whole. At Arriva Bus Company, management found that bus drivers became excessively concerned with the performance of their own team at the expense of their other colleagues. Some teams work more quickly and effectively than others in the same department or organisation. At Heineken this had the effect of encouraging the slower groups to improve their performance, but it can be a risk if the more effective groups move too far ahead of the others. To overcome this problem, a Dutch financial services company encouraged functional relationships with members of other teams on specific projects. Some organisations have also taken measures to ensure that rewards are based on the performance of the company rather than that of the individual or team.

At NKT Cables, self-managed teams have experienced difficulties because the shift system rotates staff between teams. This means that the membership of teams changed constantly, so that it was hard for team members to work together as a team rather than as a collection of individuals.

Management skills

Because of the many sources of resistance to change, and the need for organisations to adapt rapidly to changing social, political, economic and technological conditions, management of change has become a crucial issue. Numerous research findings (Burnes, 1996 for example) show that change management requires particular skills, which can contribute significantly to its success. A clear relationship has been demonstrated between management style and employees' behavioural and attitudinal responses to change. However many managers lack the necessary skills and relatively few organisations actively address this issue. Consequently employees can be critical of workplace innovation strategies, blaming their dissatisfaction on their immediate boss.

Support and training

For workplace innovation to succeed, employees at all levels need to receive appropriate levels of support and training.

Many companies, such as Granorolo, found that a higher level of skill was required to complete the new jobs. The case studies show that management recognise the need for new skills training and generally employees are trained to operate new machinery and technology. Some companies, however, trained only a percentage of the workforce whom they subsequently relied on to train colleagues. It was shown that mistakes were made in some companies that were costly to rectify because employees were inadequately trained. For example several case study companies including Cederroth International, Ecco and Autoliv identified problems caused by the failure to train everyone in teamwork principles before its introduction.

Whilst companies should not discriminate between employees on the basis of age, it is not unusual to find that older workers are reluctant to be trained especially in new technologies. Some companies such as SIFA failed to recognise that older employees might find training in new skills more difficult than their younger colleagues.

Reliance on external support

Reliance on external support can support or impede workplace innovation. Consultants can bring new ideas and facilitation skills to animate dialogue, reflection and learning, but all stakeholders in the company need to share ownership of the process and the outcome. Consultants should only be used to resource workplace *innovation*, not attempt to *transfer* practice from elsewhere. At worst, consultants commodify knowledge into a linear implementation package which denies the potential for organisational learning or innovation. Employees and managers alike can feel detached or alienated from a process which, although seemingly rational and evidence-based, denies them influence or control. For this reason consultancy also runs the risk of creating dependency on the external 'expert'.

New reward systems

Approaches to reward and remuneration must reflect the wider objectives of the organisation and the nature of the work system itself. Existing methods of reward will be examined critically during the process of workplace innovation. However the case study evidence reveals a tendency to overlook the significance of reward systems in introducing new forms of work organisation. Many companies continued to reward employees for their individual efforts, with seriously detrimental effects on overall organisational performance and the success of workplace innovation.

Akzo Nobel recognised the need to adapt the reward and salary system to reflect changing roles and functions. It was proposed that a new system be developed over a three-year experimental period. However, the promise that all employees would, in time, gain a rise in salary could not be fulfilled because of a lack of financial resources. After the three years, the unions were unwilling to co-operate further and the outstanding issue slowed down the change process. At Gispen a new bonus structure for employees was developed after organisational changes had been implemented, leading to a number of problems. The case study suggests that if management had addressed this issue sooner the motivation of employees to support the change process might have been greater.

Timescale to realise the benefits

Both managers and employees can underestimate how long it can take for the benefits of change to be realised. Case study evidence demonstrates that while many companies anticipated lead times in excess of two years at the outset, they had actually expected to see some measurable results sooner and became frustrated with the lack of immediate progress. Change can be disruptive in the short term, and the resulting pain may lead to unrealistic hopes of an early return. When problems are encountered companies begin to question whether, in reality, organisational change has the capacity to deliver the anticipated benefits. At Cloetta Produktion management and employees became dispirited when rapid results were not forthcoming, and were less willing to give their active support to the new production system.

At Tegral, the management team needed reassurance when results were not forthcoming and had to realise that a significant incubation period was necessary to allow the new culture to become embedded in the organisation. Musgrove found that a partnership-based approach to change can be very demanding and that it is necessary to consolidate successes before embarking on further innovation. Meath County Council learnt that there is a need to align the pace of change with the capacity of the organisation to absorb it.

Organisations can become so engrossed in immediate challenges that they do not take time out to anticipate potential problems. For example unanticipated difficulties when new technology is installed can slow down or bring new production processes to a halt, increasing delivery times and customer complaints. Some of the case study companies admitted that in the early days they moved backwards rather than forwards. Others identified and targeted potential early successes, however small, as a means of sustaining motivation and commitment.

Concern about the implications of change

Resistance to change from all levels of the organisation poses a major obstacle to successful workplace innovation. For over fifty years, since the early work of Coch and French (1946), academic researchers have investigated employee resistance to change, while extensive management texts and training courses focus on methods of overcoming it. Most of the Hi-Res case studies make some references to problems associated with employee resistance.

NKT Cables said that the greatest obstacle to the introduction of autonomous working groups was the scepticism and opposition of managers and the workforce. This may have been because no-one in the organisation had any experience of such group work at the outset. It took eight years from the setting up of the first pilot to the point where everyone worked in groups. Cloetta Produktion had had a long tradition of family ownership and an authoritarian management style which made change unfamiliar. Employees adopted an attitude of 'wait and see' rather than actively supporting the new ways of working.

The previous section has shown that lack of commitment to change can be attributed to the ways in which it is addressed.

However additional reasons emerged to show why employees, management and trade unions might lack commitment to change and why sometimes they openly resist it. Employees at all organisational levels are concerned about the implications of change for their own jobs. However individuals differ in their ability to cope with change, to face the unknown, to deal with uncertainty. Workplace innovation, which requires people to think and behave in different ways, can challenge

an individual's self-conception. We each have ideas about our abilities and our competencies. One response to change may thus be self-doubt and self questioning – 'can I handle this?' Some people have a low tolerance for ambiguity and uncertainty. The anxiety they suffer may lead them to oppose even potentially beneficial changes. If change is perceived as a threat to an individual's sense of security, they may be reluctant to embrace the new organisational culture and there is a tendency to resort to more familiar methods of working (Sharpe, 2002). The case studies describe the uncertainty expressed by some employees who were unsure about how organisational change might affect their jobs. For example at ICA Kvantum, a Swedish supermarket, almost half the staff left when changes in work organisation increased employees' responsibilities.

Job security remains a key concern

Over the last decade or so, organisations have reduced their overhead costs through restructuring, downsizing and outsourcing some of their more peripheral activities, with significant implications for job security. The early Twenty First Century is a period of continuing, arguably permanent uncertainty with frequent news of job losses, often on a large scale. Inevitably the threat of redundancy is often at the forefront of employees' concerns.

Front line employees were worried that if new technologies or new work practices increased the speed of production, the employer would be able to reduce the size of the workforce. This was the case at Bausch & Lomb. Some companies such as Blue Circle Cement allayed employees' concerns by signing employment security agreements which undertook to use compulsory redundancy only as a very last resort. Everything possible would be done to ensure that an individual could be redeployed in the same organisation, though not necessarily in the same job. Scottish Power guaranteed to give employees at least a year's notice of any plant closures and made training and development available to all so that anyone who wanted to leave would be in a stronger position in the labour market. Waterford Crystal promised its employees that they would be continuously trained in the latest, cutting-edge technology, helping both their internal and their external career mobility.

Potential to feel undervalued

When work is organised by self managed teams, some functions or production processes become redundant. Employees who perform such functions are almost inevitably resistant to change. At the chemicals manufacturer Dow, and Pope Cable & Wire, for example, some staff resisted the concept of self managed teams for this reason. In other companies that introduced teamworking, employees felt that if they passed on their skills to colleagues, their contribution to the company would no longer be valued and that it would be easier to replace them. This was certainly an obstacle to change at Thomassen and Drijver Verblifa. If such employees feel vulnerable they find ways of trying to protect their positions. They may be reluctant to share knowledge and pass on skills to other members of the workforce. The Dow case study emphasises the need to assure employees in this position that they will not lose their jobs or will be offered new ones; likewise Pope Cable & Wire retrained their 'redundant' workers so that they could take on new roles.

Some of the differences between older and younger workers, in terms of their ability to learn new skills, were discussed earlier in this report. Older employees expressed more concern than their younger colleagues about their ability to adapt and cope with major changes to working practices.

Increased performance and responsibility

While workplace innovation has the potential to increase involvement and satisfaction, it can often increase the level of responsibility employees must take for their work. Not all employees embraced this. Teamworking was frequently perceived as something that required extra energy. These types of changes also signify a change in the way relationships, such as those between colleagues and different stakeholder groups are perceived. In some organisations such as Abrona self-management had not yet become the norm, with teams still needing central control and support. But in other organisations such as Philips Lighting employees were more motivated because their jobs had become more interesting and challenging.

Initiatives that have made measurements of output possible, both in terms of quantity and quality, were sometimes perceived as a threat. They were associated with the intensification of work, often implying the threat of new methods of controlling the workforce. As suggested earlier, partnership could be met with a degree of scepticism when it paved the way for the introduction of more demanding working methods. It was sometimes regarded as a tool which management could use to their advantage to push through changes that might otherwise be rejected by the workforce. Some employees were suspicious of management's motives for entering into more participative styles of organisation, questioning the sincerity of their commitment to building a better relationship between themselves and their employees.

Perceived loss of power and authority

Trade union representatives, supervisors and management can each be resistant to organisational change if it is perceived as a threat to their power and authority.

Some trade union officials were reluctant to accept employee participation or teamworking. They were concerned that if decisions to change were made by team members, steering committees or partnership groups, trade union officials could be excluded from the negotiating process. This was the case at Bristol City Council. Changes introduced at RTE created inter-union tensions resulting from the perceived loss of power by some individuals. In organisations with established partnership practices such as BorgWarner, where union officials and management are seen to be 'on the same side', officials can be subject to the kind of antagonism from the shopfloor previously reserved for management.

Senior management sometimes assumes that supervisors or team leaders will automatically adopt new styles of managing. In their study of teamworking in an engineering company, Buchanan and Preston (1992) argue that in practice supervisory styles remain unchanged. The organisational objective was to change the role from 'policeman' to that of 'coach'. Yet the relationship between foreman and the shop floor continued to be based on low trust and high intervention. Similarly Watson and Rosborough (1997) highlight the tensions faced by team leaders due to lack of appropriate management support. Although team leaders were encouraged to behave in ways consistent with teamworking they were also faced with demanding production and financial targets which encouraged them to revert to a command and control style of leadership. Mueller and Purcell (1992) in their study of European automotive engine plants found that there had been much experimentation with the role of elected team spokesman. Supervisors who felt that their authority was being challenged by the changes in leadership roles experienced the most difficulty in adjusting to these new conditions.

Hi-Res case study evidence supports these findings. For example a Dutch construction company learned that changing from the role of policeman to coach required significant adjustments in competence and attitude. Because they were inadequately prepared, team leaders found it difficult to make the transition and reverted to previous supervisory styles of leadership. At Mammut Work Wear the supervisor did not want to work in the new way and eventually left the company.

Middle managers can be equally concerned about the implications of change for their positions. They believe correctly that new forms of work organisation enable employees on lower grades to fulfil some of their tasks, and senior managers might decide that some layers of management are no longer necessary. One trade union contributor to a Hi-Res workshop likened middle management to a barrier reef, standing between the forces for innovation and the day-to-day work practices of the majority of employees (UK Work Organisation Network, 2002). Some, such as Thomassen and Drijver Verblifa are reluctant to devolve responsibility for issues such as quality control to employees on production lines. Some Akzo Nobel managers did not initially believe that maintenance tasks could be carried out safely by operators in semi-autonomous work groups, and had to be shown that this was possible.

It is also apparent that senior management can perceive change as a threat and can be equally resistant. Employee participation and team-based organisation exposes their decisions to challenge from informed and experienced employees at all levels of the organisation. Actors from some of the smaller case study organisations expressed frustration at the problems they have in gaining senior management support for more radical forms of organisational change. Employees at the Ministry of Transport and Communications (Netherlands) for example felt that senior management did not fully support workplace innovation and this influenced their attitude towards change. It was also suggested that senior managers are not always aware of the complexity of workplace innovation and the time that it takes to achieve results. The case study of Carlsberg's bottling plant, where it took four years to move fully to self-managed teams, demonstrates that lack of support from top management makes it difficult to maintain the momentum of the change process.

Sustainability of change

Having discussed obstacles directly associated with workplace innovation, we now turn to the organisational problems encountered in trying to sustain change.

Organisational factors

New forms of work organisation tend to require high and continuously increasing skill levels, a problem for organisations which had not anticipated the extent of training required or that that the need for training continues as work systems develop. Likewise when recruiting it can be difficult to find applicants with the necessary skills. Other internal obstacles to sustainability include the misconception that change is a discrete event that will come to an end; a gradual reversion to adversarial industrial relations; innovation decay when key personnel who have led the change process leave the organisation.

Skills

Most of the case study organisations found that new forms of work organisation demand higher levels of skill. Gargnäs Elteknik realised that while the skills of their staff had been adequate to cope with new practices introduced in the 1990s, an increase in competition in 2000 meant that

'enthusiasm' was not enough and that skill levels were simply too low to deal with the new circumstances. Heineken also found that new methods of working were beyond the skills of existing employees.

In an ideal world all employees would receive appropriate training when new ways of working are adopted. Typically when a pilot project is set up, all the staff involved do receive appropriate training. However as new forms of work organisation are disseminated across the workplace, employers may think it unnecessary or impracticable to train everyone involved. Yet this lack of training can become a significant impediment to future progress.

Some companies discovered that forms of work organisation based on multi-skilling did not succeed as well as expected. This was sometimes, though not invariably, because lack of time and resources made it difficult to equip employees with the full range of skills needed. Volvo-Aero confronted this a problem after establishing teams containing blue- and white-collar workers who were expected to be fully flexible across a whole range of tasks, including business management and supplier contact. The blue-collar workers were flexible across traditional vocational work and regarded the acquisition of white-collar skills as a natural development. But certification arrangements for skilled machine operation required in-depth knowledge and regular utilisation, which white-collar workers could not easily acquire. In some cases employees were also unwilling to take on these tasks.

The Granorolo case study, for example, suggests that recruiting new employees with the wider range of skills associated with new forms of work organisation skills can be difficult in labour markets structured to reflect traditional tayloristic skill demands. The danger is that less skilled workers can gradually cause a reversion to previous ways of working unless addressed by remedial training in the company.

At the Ministry of Transport and Communications (Netherlands) it was found that some employees did not 'fit in' with the new innovative office systems. But the kind of change that results in the loss of older workers thought not to possess the necessary skills or the right attitude to change can have unforeseen consequences. East Midlands Electricity believed that new recruits were not as loyal to the company as longer-serving employees. Although older employees might be more resistant to change, taking longer to learn new skills than their younger colleagues, they remained loyal to the organisation.

New working practices such as autonomous team working are not a once-and-for-all fix but require continuous development to reach their full potential. In sustainable team-based organisations employees are not just trained when the process is first introduced but are enabled to develop their skills further as they become more confident about pushing the boundaries of teamworking forward. Anord Control Systems for example has provided continuous training for all teams and team leaders within the organisation.

In the longer term the success of workplace innovation is affected by the need to retain employees with the necessary skills and competencies. Training in the use of new technology, for example, can be costly to implement; moreover employers run the risk of losing the best trainees to competitors as soon as they are qualified. Younger, more highly qualified employees increasingly perceive the training and experience they acquire in jobs as a stepping stone to develop their own careers, moving on within a relatively short period of time. The key task for an employer in this context is to find ways of making best use of the talents of young knowledge workers for the short

time in which they remain in the job. A high quality of working life and opportunities for personal development through work tasks are likely to be the key components of success (Knell, 2001).

Industrial relations

The sustainability of organisational change can be affected if pay issues or other grievances arise during the process. Workplace innovation may have to be put on hold whilst these are dealt with. In some of the Irish case studies members of the partnership forums found it difficult to switch between new styles of dialogue and the traditional styles of bargaining. There were occasions when management and unions were no longer willing to co-operate and negotiations between the two parties became confrontational. At Waterford Crystal there was a reversion to traditional collective bargaining; employees found it difficult to cope with the new culture. The advice from some companies (SIFA for example) is that organisations should not attempt to integrate industrial relations issues into partnership projects, though elsewhere (perhaps in countries with different collective bargaining traditions) there is evidence of greater integration of the two agendas. Indeed collective bargaining may be seen as a key vehicle for organisational innovation (Oehlke, 2001).

Dependence on key personnel

Over-dependence on individuals engaged in workplace innovation often results in concerns about the durability of organisational change. If key actors within an organisation leave it can create difficulty in sustaining momentum and enthusiasm, a problem experienced by Meath County Council for example. Rabobank referred to potential problems that can arise as a result of illness amongst employees who carry out essential functions and the effect this can have on the quality of the service delivered to the customer. On the other hand new forms of work organisation often blur the demarcations between jobs, allowing other team members to cover the tasks of absent colleagues, at least for short periods.

Conclusions

Change is messy and difficult, especially when it is as far reaching as that described in many of the case studies. Not surprisingly, given the antipathy and unpreparedness for change demonstrated by many individuals and organisations, the case studies show that there is a wide range of obstacles to sustainable workplace innovation. Organisational change frequently achieves only limited success, perhaps because these obstacles are rarely recognised and addressed in good time.

Externally, changes in the economic climate may sabotage change efforts by undermining the financial basis on which they rest while changes in the market, such as problems faced by telecommunications organisations in 2000, can cause severe problems too. Changes in political trends and new legislation may also impact on organisational plans. However organisations which have already streamlined their operations and are focused on working efficiently will be better placed to face such challenges than their more sluggish competitors.

Internally the culture of the workplace and resistance to change are the source of many problems. It is important to identify and address the main sources of resistance, affirming new practices as 'the way we do things round here'. Team based working is not just a means of producing goods and services and partnership is not merely a method of conducting industrial relations. Both have more radical consequences in that they invite front-line workers to have a greater input and to exercise more responsibility than more traditional ways of doing things. Teamworking and partnership also

challenge existing hierarchies and access to knowledge. In short, change as a process is often much more open-ended, unpredictable and unmanageable than managers anticipate. 'Change management' itself may be an unrealisable aspiration in a process characterised by experimentation, reflection and learning rather than by linear rationality.

Case study companies found that resistance to change needs to be handled sensitively. Staff should be reassured that they will not lose their jobs, and will be provided with the training and support they need to undertake their new roles successfully. The involvement of all workers in creative dialogue about new working practices helps to gain employee commitment and may prevent management from making costly mistakes. Organisations should learn as much as possible from their experiences of earlier change initiatives but should not allow previous failures to undermine the credibility of proposed workplace innovation. Apathy and cynicism are real forces, and need to be challenged directly if workplace innovation is to stand a chance of success.

On the basis of evidence from the case studies, senior management has a particularly important role in workplace innovation. On the high road senior managers transcend short-term perspectives to develop longer-term visions. They provide the culture and context in which employees accept more responsibility for the formulation and ownership of business objectives based on win-win outcomes. Establishing an open-book approach to information about the nature of the business, its long term objectives and how it is performing is vital. Senior managers must give change their full backing, providing the resources required to see the process through – including their own time.

Chapter Six

Towards a
win-win approach?

Towards a
win-win approach?

So does it work?

So far this report has examined why organisations move towards the high road, explored an emerging view of what the high road might look like, and identified some of the problems its travellers meet on their journey. Perhaps the most important conclusion so far lies in the 'high road' metaphor itself: it is a road, not a summit. The high road implies a way of travelling, involving a recognition that the journey itself is what matters and that there will never be an end point. In short there is no 'best practice': rather the high road is about the way knowledge is created and distributed, about how employees at all levels can influence their work environment both through representative structures and through day-to-day participation, about the enlargement and enrichment of jobs, and about people working together in teams able to cut across traditional demarcations and boundaries.

But is there any evidence that these forms of workplace innovation produce positive results? On the basis of the Hi-Res analysis we would argue that the answer is 'yes', as the following snapshots show:

- An increase in net profit. Several organisations, including Föreningssparbanken and NCC reported a strong correlation between new forms of leadership, empowerment and profitability.
- Increased turnover resulting from business growth. At Autoliv it increased by 800% over a ten year period.
- Higher quality of products. For example there was a reduction in discards and fewer complaints at Cloetta Produktion.
- An ability to be more responsive to market demands. Mammut Work Wear is now able to respond to customers who want faster deliveries, smaller batch sizes and greater variation between product types.
- Greater customer satisfaction. The clients of a Danish waste handling operation are more satisfied now that they have a good service delivered by more autonomous employees able to offer advice on environmental matters and who can make agreements directly rather than having to refer everything to a headquarters. Xerox found that for every 1% increase in customer satisfaction, customer loyalty increased by 0.5%.
- The survival of the company in a volatile market: "There is no doubt in my mind that without the partnership this plant would have closed" (trade union convenor, BorgWarner).
- Improved industrial relations negotiating processes at Emhart Fastening Teknologies.
- Gaining competitiveness through culture change at PTT Post.
- A higher degree of trust between management and employees at Blue Circle.
- Continuous improvement became part of the company culture at Ducati Motor Holdings, the Italian motor cycle manufacturer.
- In these and the majority of the other case study organisations, enhanced quality of working life through greater control over the work environment and/or more opportunities to develop and use competencies and creative potential to the full.

However we must also conclude that the evidence remains fragmented and incomplete:

- From a research perspective, Chapter Two summarises a growing body of evidence which demonstrates the benefits of new forms of work organisation for business and organisational performance as well as for quality of working life. However the lack of commonly shared definitions and terminology relating to new forms of work organisation significantly hinders comparison.
- The Hi-Res project has shown that it is difficult to find exemplary 'high road' organisations. Almost all the case studies reveal high road practices co-existing with those both of the low road and of traditional forms of work organisation and culture as yet unchallenged. The high road typically remains an aspiration rather than an accomplishment. However these case study examples were chosen because, in aspiring to the high road, workplace innovation in these organisations generates important reflections and insights into the nature of the journey itself.
- The case study evidence also shows that, contrary to some management wisdom, only a few organisations appear to use predetermined performance indicators in evaluating the success of workplace innovation. Even where such indicators do exist they are likely to be affected by a range of other variables, and it is often hard to attribute improvements to the effects of specific workplace interventions. Several actors within the case studies spoke of a 'wake-up call' or a 'moment of truth' sparked by a particular incident or period of reflection: in short a realisation that existing levels of organisational competence and agility were simply not sufficient to cope with sustained changes, uncertainty or opportunity in the external environment. The changes which result from such realisations often involve open-ended dialogue, culture change and forms of workplace innovation with long payback periods, and are not easily amenable to 'hard' evaluation. Rather they can only be evaluated by studying the long-term sustainability and performance of the organisation across several indicators. This, of course, makes the task of writing the current Chapter much harder. It also suggests the need for more longitudinal studies of workplace innovation, designed to understand the conditions under which new forms of work organisation are capable of enduring impact.

All the case study organisations experienced real obstacles to change including failures, reversals, intransigent barriers and cultural blockages; yet all achieved success in at least some areas. Although these successes were often partial and qualified, they have a greater significance because their achievement often raised the aspirations of the key actors in the organisation, pointing the way to the next stage in the journey. Moreover almost all of the case study evidence points to some degree of convergence between enhanced performance and improved quality of working life. Critically these are not separate achievements: one is achieved through the other.

The remainder of this Chapter takes a sample of outcomes, some specific and measurable, others less tangible but nonetheless considered by the case study actors to have a significant impact on the competence and sustainability of their organisations:

Measurables: productivity, quality, cost

Intangible gains: knowledge, innovation, technological effectiveness and working lives

What are the achievements?

Chapter Three shows that the journey to the high road begins from different starting points. For some organisations workplace innovation is motivated by short term survival, but this experience gradually raises aspirations and opens insights into the prospects for more profound change. Other organisations begin by responding to a growing awareness that workplace innovation is necessary to address increasingly vocal demands from customers, or to address emerging opportunities or threats in the market. For a third group workplace innovation is part of a strategic vision of the type of organisational competence and agility needed to prosper in an increasingly uncertain environment.

In each group, outcomes combine a mixture of measurable and intangible results:

Measurables: productivity, quality, cost

In Europe, studies carried out in France (Caroli and Van Reenan, 1999), Germany (Lay, Shapira and Wegel, 1999), the Netherlands (TNO, 1999), Sweden (NUTEK, 1996) and the UK (Culley, 1999), together with a survey conducted across 10 European countries (European Foundation for the Improvement of Living & Working Conditions, 1998) found evidence of significantly higher rates of productivity in enterprises using new forms of work organisation. The greatest productivity benefits were achieved by companies that integrated new practices into new work 'systems'. In referring to new work practices, a recent OECD (2001) report found that in many cases these involved a move towards a higher degree of labour-management co-operation, flatter management structures, increased recourse to team-working, and a shift to payment systems based on individual or team performance.

American studies paint a similar picture. A study of US workplaces (Huselid, 1995) found that those that made the greatest use of new work practices to build employee capabilities and motivation enjoyed the highest rate of increase in sales turnover. Another study found higher than average performance in unionised firms with new work practices, concluding that a greater employee voice in decision-making is what seems to matter most for productivity (Black & Lynch, undated WP no. 6210). An Australian study (Crockett, 2000) also found a positive relationship between workplace reform and productivity, with workplace reform identified as formal training, semi-autonomous groups, income bonus schemes, quality circles or teambuilding, staff appraisal, TQM, computer integrated management, skills audits and just-in-time systems.

In the case study companies, productivity almost invariably rose when new working practices were adopted, although it often it took some time to achieve this. Companies which introduced self-managed teams did particularly well. MalacoLeaf increased productivity by 15-20%, Volvo Aero increased productivity by 5% and Cederroth International increased productivity by 25% initially and by 3.6% a year after that. These companies cited other benefits too, including increased job satisfaction. Likewise greater versatility and responsiveness in the production system at Ecco improved both productivity and quality of working life.

Lags in productivity growth in many organisations can be explained by lack of investment in new forms of work organisation because traditional approaches are ill-suited to exploit the potential of new, more complex and versatile technologies. For example Danish companies that invested both in new technologies and new forms of work organisation achieved an annual growth in labour productivity nearly twice that of companies that invested only in physical equipment (Danish Ministry of Business and Industry, 1996). U.S. research which focussed on information technology and workplace organisation found that new work practices are positively co-related with the

performance of firms only when they are combined with heavy investments in either human capital or ICT (Black & Lynch, undated WP no. 7479).

Improved quality was another common benefit of new approaches to work. Esbjerg County Hospital's move to teamworking on a surgical ward had resulted in a better quality of care for patients, leading to earlier discharge. Interpay, a bank clearing operation, found that the quality of work improved when it moved to teamworking, and the organisation as a whole became more flexible and client focused. BorgWarner reduced its internal rejects by 50% and its warranty costs by 80% when it adopted partnership practices and teamworking. The earlier detection of errors by introducing more transparent structures resulted in better quality and less waste at Gargnas Elteknik.

Costs were reduced quite dramatically in some organisations as a result of workplace innovation. Moreover when costs fell there were usually other advantages. This contrasts favourably with situations where savings are achieved simply as a result of cost-cutting initiatives, which are unlikely to give rise to other benefits. Ducati Motor Holdings, which designs, builds and distributes high quality motor cycles reduced indirect manufacturing from 19% to 8% of product costs. It had introduced lean production methods but the systems were designed by the workers so the negative aspects of such approaches were avoided. Turnover also tripled over a five-year period. The Basicnet Group, an Italian sportswear manufacturer, reduced costs to its franchisees by 20% after a new IT business system was introduced. This move to internet-based technology has changed the jobs of many employees and reduced delivery times by 10 days. Teamworking at Cederroth International reduced costs through lower stock levels, which in turn freed both capital and floor space.

Intangible gains: knowledge, innovation, technological effectiveness and working lives

Workplace change can provide the capacity for long-term innovation and growth for both individuals and organisations. Improved dialogue and new opportunities for involvement enhance employees' acceptance of organisational change, enabling them to become more innovative and to generate new ideas. Informed decisions can be made when information flows freely, when knowledge is shared and information is exchanged efficiently. The key lies in the ability to translate ideas into products and services: when successful the innovation cycle becomes faster moving. Researchers in Finland (Government of Finland, 1996), France (Greenan N. and Guellec, 1996) and Germany (Lay, Shapira and Wegel, 1999) found that enterprises using new forms of work organisation were much more likely to introduce innovative new products and services than traditional workplaces.

The ability to improve an organisation's capacity for innovation has become a major challenge. Organisational competence in problem solving and renewal can have a number of dimensions, including:
• the distribution of knowledge and information;
• the ability to use this knowledge and information constantly to generate new ideas;
• the ability to translate these new ideas into products or services.

Shared understanding between management, trade unions and employees is an important precondition for the negotiation of win-win approaches to organisational innovation. Organisations like Blue Circle Cement which adopt an open book policy are more likely to secure trust and motivation than those who drip-feed information. Trade unions and employees need a clear understanding of both the organisation's objectives and the external environment if a realistic

framework for gainsharing is to be agreed in return for flexibility and commitment. Likewise managers need a clear understanding of employee's concerns. While representative structures such as partnership forums or works councils provide an important means of achieving this, should provide a day-to-day context for direct dialogue between managers and employees. Several of the case studies demonstrate how this can work in practice.

A number of the case studies illustrate the value of employee knowledge combined with the intelligent use of technology in product development and improvement. At Mammut Work Wear, for example, the introduction of more flexible sewing machines coupled with a move to teamworking meant that workers became involved in all phases of production, from design to contact with sub-contractors. Now the company draws on its operators' knowledge when designing and developing new models, enabling it to become an agile organisation with a motivated workforce. The company also enjoys an absence rate of less than 1%. Similar developments can be found at Ecco. Cannon Engineering's flexible work structure facilitated employee decision making without the need for referral through the management structure - employees were encouraged both to contribute ideas and take responsibility for them. When Cannon was commissioned to produce 150 motor racing engines rapidly for approval by a sports governing body, it enabled the client to have direct access to its shop floor workers to develop the engines. Several design modifications were made on the basis of their input during the course of production. A Dutch public services organisation found that enabling employees to take more responsibility and exercise their initiative in resolving problems, managers spent less time on firefighting and were able to allocate the time to more strategic matters.

In Denmark, manufacturing companies that had invested both in new technology and new forms of work organisation believed that they had achieved a greater ability to comply with specific customer demands (Danish Ministry of Business and Industry, 1996). The implementation of ICT provides a particular opportunity for sharing knowledge on and between different organisational levels, and also between the company and its environment. Skanska Sweden significantly improved staff access to knowledge and information when it developed new working methods based on the sharing of information between projects via a company intranet. Similar gains were achieved when TietoEnator provided staff with continuous access to knowledge from their desktop computers. Such an enhanced technological infrastructure offers a strong platform for organisational development. Workplace innovation has the potential to evolve through a continuous interplay between adjustments and adaptations to technology and new ways of working and learning.

Inter-organisational networking offers further possibilities for sharing knowledge and collaborating in research and development, with significant advantages for innovation and continuous improvement. Learning from practical interactions between assemblers and suppliers can be particularly powerful. Ducati moved to a system whereby a smaller number of companies supply sub-assemblies, reducing the number of firms with which the organisation has to deal. The reduced number of sub-assemblers enables closer co-operation in areas such as research and development, product innovation and quality. Ducati also established an 'engine technological district' where it co-operates with organisations which are not direct competitors on research and development, supply procedures, quality control and training.

In the course of workplace innovation, jobs have been redesigned in many of the case study organisations. Consequently employees have become multi-skilled and carry out a greater variety of tasks. Multi-skilling may mean that employees rotate jobs within a team, cover other jobs during absence and holiday leave and move to other functions, often at their own discretion. Among case study companies such as Autoliv, individuals and teams take on responsibilities for planning, quality,

co-ordination and improvement. In some cases it can also enable teamworkers to undertake modest maintenance and repair tasks rather than holding up the line to wait for a mechanic to do the job. All these changes require employees to be flexible both in terms of their skills and attitudes. Critically however, with increased involvement in decision making employees feel that they have more control over how they manage their own work, with consequent increases in job satisfaction. Higher levels of experience and knowledge created by this day-to-day autonomy also give them a stronger, more informed voice in future change processes.

Overall, from an employee perspective these benefits have facilitated significant improvements in the physical and psychological working environment, with positive effects on job satisfaction and morale. From an organisational perspective there is a better utilisation of human resources since employees are generally more flexible. The higher levels of job satisfaction have resulted in increased productivity, a reduction in absenteeism and a greater commitment to organisational success. Absence fell from 11% to 4% at Cederroth International, and to 1% at Mammut Work Wear and 2% at BorgWarner.

As a consequence employees in many of the case study companies no longer spend their working day on boring, repetitive tasks; work is more interesting and more rewarding. Jobs in companies like Mammut had often been physically demanding and resulted in industrial injuries; workplace innovation had succeeded in redesigning jobs to avoid both physical strain and monotony. Likewise at NKT Cables employees are reported to be more satisfied because their jobs are more interesting. R 98, the waste collection business, also reported increased job satisfaction, while Blue Circle said that more interesting work had led to lower levels of employee turnover.

Carlsberg's redesigned jobs were more attractive to younger workers. A number of the case study reports indicate that labour retention can also be improved through organisational change. At Cederroth International labour turnover fell from 15% to 2% and at BorgWarner it fell to 0.5%

Workplace innovation can increase employees' skills and knowledge, as well as confidence and self-esteem. At Anord, for example, many employees became skilled at formulating arguments clearly and have overcome their initial reticence at meetings. In the longer term, as a result of the wider range of skills and experience gained from new forms of work organisation, some employees are better placed to apply for promotion to roles which would previously have been closed to them, thus increasing their earning potential.

In some organisations the industrial relations negotiating process had improved and problems were more likely to be resolved at an earlier stage. Trust between managers and unions developed (see for example Tara Mines and Musgrave Supervalu Centra). Industrial disputes were less frequent. Wage negotiations that previously used to take months were resolved in hours. A positive and significant correlation between new practices and wage rates has also been found.

Conclusions

The introduction of new forms of work organisation has clear benefits for employers and employees. Indeed considerable evidence has been found for the possibilities of convergence between improvements in organisational performance and quality of working life. Achieving such a convergence invariably involves a combination of all of the following elements:

- working practices which support knowledge creation, capture and distribution throughout the organisation;
- workplace partnership and employee participation, both through representative structures and in day-to-day working life;
- job redesign involving the enlargement and enrichment of tasks, combined with individual and collective control over the work environment;
- team-based practices throughout the organisation providing opportunities for job rotation and innovation within a supportive culture.

Research evidence from Europe, the US and Australia shows a positive impact on productivity, sales turnover, innovation, managing change and growth, and the quality of working life. The case study evidence, too, shows that organisations adopting new practices achieved some if not all of their objectives.

In the short term companies wanted to increase productivity by improving production procedures through increased flexibility, lower stock levels and better quality. In practice, productivity almost invariably rose when new working practices were adopted, costs were reduced dramatically by some organisations, and improved quality was common. Companies also increased their innovative capacity by sharing knowledge and by establishing working practices such as teamworking which involve steady incremental improvement.

Jobs were also redesigned, enabling workers to acquire new skills, carry out new tasks, and exercise greater responsibility. Work became more interesting, leading to higher levels of job satisfaction, better performance and lower absence. Case study employers attributed some of the most significant benefits of change to the training and development needed to support new forms of work organisation, increasing employees' skills and knowledge, and enabling them to participate more effectively.

The final Chapter returns to the issue of dissemination. As we have argued, the high road addresses some of the key aspirations held by European policy makers and social partners. At the same time the gap between high road practice and common practice in European workplaces appears to be vast. This poses serious challenges.

Chapter Seven

Challenges for European Policy Makers and Social Partners

Challenges for European Policy Makers and Social Partners

Public policy measures and workplace innovation

As Chapter Two shows, evidence suggests that the spread of high road organisational innovation is limited in Europe. This can be explained by a number of mutually reinforcing factors including:

- low levels of awareness of innovative practice and its benefits amongst managers, social partners and business support organisations;
- poor access to evidence-based methods and resources capable of supporting organisational learning and innovation;
- lack of knowledge-based business services and other publicly provided forms of support;
- the failure of vocational education and training to provide knowledge and skills relevant to new forms of work organisation.

We have argued that this amounts to a missed opportunity for economic and social development, undermining European goals for competitiveness and employment. Actions by public policy makers and social partners are of proven value in addressing these problems through, for example:

- the provision of knowledge-based services and other publicly provided forms of support as a means of raising awareness and resourcing workplace innovation;

- the creation of opportunities for networking and peer exchange between companies as a means of learning through shared experience;

- the capture and dissemination of knowledge and experience from workplaces across Europe to help understand emerging trends and to inform learning and dialogue;

- the widespread provision of support for action research to pilot innovative approaches to change, especially in new contexts;

- the creation of development coalitions at regional, national and transnational levels to close the gaps between key actors and stakeholders with an interest in work organisation;

- the provision of access to training capable of building the competencies associated with new forms of work organisation.

In recent years a number of exemplary initiatives have been developed to address these issues in some member states; the New Work Organisation in Ireland Programme (Savage, 1999; Sharpe and Totterdill, 1999) and the Finnish Workplace Development Programme are amongst several frequently quoted examples (Business Decisions Limited, 2000). Typically these programmes combine several of the elements listed above, involving close co-operation between public policy

makers and social partners in both their design and delivery. An increasing body of evidence demonstrates the effectiveness of such targeted intervention, not only in supporting change in the individual workplace but in raising awareness and disseminating knowledge more widely.

Targeted intervention to support workplace innovation has been highly effective for many of the Hi-Res case study organisations. There are several interesting examples, notably from Denmark, Ireland and Sweden. In Denmark, Ecco secured EU Brite-Euram funding for its project to develop a flexible production system for moulded footwear. A principal aim was to achieve a technical design capable of providing qualified and motivated employees with jobs which were as interesting and healthy as possible. Partners in the project included leading machine and system suppliers, while the Danish Technological Institute played a key role in enabling the optimal use of human resources both in designing the new system and in the day-to-day running of the resulting system.

Some organisations have been involved a series of supported projects, each building on the success of previous initiatives. In 1989, the Danish company Mammut Work Wear participated in a pilot project to develop work organisation as part of a joint initiative led by the machinists' trade union and the clothing and textiles employers' federation. In 1991 it took part in the Brite-Euram programme, aiming to develop sewing machines designed for teamwork. In the second half of the 1990s Mammut worked with a Greek enterprise to increase employee participation and encourage continuous improvement, supported by the EU's ADAPT programme.

Another initiative, Project Job Swap, involved three Danish organisations – Carlsberg, Bang & Olufsen and Grundfos. Employees swapped jobs for a week in order to deepen their understanding of teamworking. The project was supported by the European Social Fund and led by the Danish Technological Institute.

Case study organisations also benefited from support and intervention at national, regional and sectoral levels. The introduction of autonomous group working at MalacoLeaf was prompted by a 1992 Danish Parliament action plan to halve monotonous, repetitive work before 2000. Esbjerg County Hospital developed teamworking in a surgical ward with funding from a partnership initiative instigated by the employers' organisation, the association of Danish County Councils, the Danish Trade Union for Public Employees, the Danish Nurses Organisation and the Junior Hospital Doctors' Association. Similarly support for workplace partnership from the Irish government resulted in large numbers of enterprises establishing partnership agreements in which management and unions work together to move the organisation forward.

The New Work Organisation in Ireland Programme co-ordinated by the Irish Productivity Centre (IPC) was supported by the social partners and provided training and facilitation to develop partnership-based approaches to workplace innovation. Most of the work of the programme involved setting up partnership structures which enabled management, trades unions and employees to confront challenges on a joint basis. Honeywell-Measurex, Anord, Sifa and Tegral are amongst the case study companies to benefit from the Programme.

In Sweden a number of organisations took part in the MERITUM project to promote workplace innovation. Nine universities and research institutes in six European countries took part in the project, supported by the European Commission, the OECD, the Swedish Council for Work Life Research, NUTEK, the Swedish Ministry of Trade and Industry and the Swedish Public Relations Association. Case study organisations taking part in MERITUM included FÖreningssparbanken, a bank and Telia, a telecommunications company, who set out to measure the impact of human

capital on their businesses. NCC, a construction company, used the concept of the psychological contract to improve performance. Another participant, Xerox, Sweden, has systematically worked to increase understanding of the importance of its intangible assets as performance drivers and has established an elaborate performance management and measurement system.

Gaps in the public policy framework

Despite the evidence of successful intervention, a high level of fragmentation can be found in public policy and business support frameworks across Europe. In particular:

- There are too few spaces in which those with expertise in work organisation come together to compare and consolidate knowledge. Rather, in many areas of business support there are a wide range of institutions each engaged in relatively isolated activity, often leading to an excess of competing models and approaches. Clearly this confuses employers and weakens the momentum of change. There is a need for the active brokerage and synthesising of knowledge.

- Knowledge about work organisation is often reduced to a consultant's commodity or a recipe, yet as we have argued there is ample evidence to show that this rarely produces sustainable change. More sophisticated tools and resources are needed to overcome obstacles to workplace innovation and ensure effective change.

- It is well understood that the integration of research and practice is weak in much of Europe. Universities are unlikely to achieve the task of bridging this gap on their own. Intermediate institutions which link research knowledge with business practice are common in some parts of Europe but not in others. New types of organisation may therefore be needed to support and disseminate evidence-based approaches to workplace innovation.

- In EU and national programmes alike there is often little active management of outcomes to ensure the widespread distribution of new knowledge or innovative practice. Individual projects or initiatives, however successful in their own terms, are never enough. The need is to ensure that publicly funded activities contribute to a managed process of cumulative and collective learning, reducing duplication and enhancing their combined impact.

- There are also too few spaces in which companies can come together to share experiences and identify common needs. Business support organisations typically focus on individual casework, missing the need to resource and sustain change through shared learning and peer exchange. Employer learning networks are thus relatively rare in many parts of the EU and there is a need for measures to animate and support exchanges of knowledge and experience over extended periods.

Challenges

The modernisation of work organisation in Europe cannot be achieved by a few simple policy measures. Rather it poses far reaching challenges for individuals and institutions alike:

- For the individual – seeking opportunities for acquiring and developing the technical and non-technical skills associated with new forms of work organisation.

- For employers and employees – accepting that change is inevitable, messy and uncertain, and that it requires considerable learning and experimentation. However it also offers real scope for 'win-win' outcomes.

- For trades unions and employers organisations – broadening their roles as proactive, knowledge-rich sources of animation and support for the modernisation of work organisation.

- For intermediate bodies – such as universities, regional development agencies and business support organisations – creating capacity and expertise in the field of work organisation and playing a proactive role in distributing knowledge, establishing new resources and building networks.

While member states have an important role to play, attention must also be focused at EU level. European policy makers and social partners also need to understand the nature of workplace innovation and its wider implications for economic and social goals. In particular they need to develop a framework in which activity at the national level is animated and resourced. Critically such a framework can translate the diversity of European experience – in the workplace, at the level of organisational theory and at the policy level – into a common resource for learning and innovation. However despite the publication of the Partnership for a New Organisation of Work Green Paper as far back as 1997 there is a significant policy development task ahead if Europe is to realise the full potential offered by new forms of work organisation. This suggests the need for several policy priorities, notably:

- creating a climate of awareness and concern amongst policy makers and social partners in Member States;

- building and resourcing capacity in member states through, for example, the establishment of new centres or institutes, the creation of new national policy frameworks, learning from policy experience in other countries, establishing development coalitions between actors, and building accessible databases of knowledge and experience;

- ensuring that existing resources (such as the European Social Fund) are targeted effectively to support the modernisation of work organisation;

- acting as a broker to maximise exchange of knowledge and experience across the EU;

- identifying fast-track strategies to support the modernisation of work organisation in applicant countries.

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List of Tables and Plates