TNO-report

Defining the High Road of Work Organisation as a Resource for Policy Makers and Social Partners. Work package 1 Literature Review. (Hi-Res project – Growth Programme)

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TNO Work and Employment (formerly NIA TNO) is a service organization in the areas of innovation of work, organization and technology, and employment research.

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1. Introduction

1.1 Goal of the report

The HIRES-project has as a goal to make a significant contribution to the European knowledge base relating to the emergence of new forms of work organisation. The European Commission wants to have more solid ground on 'new forms of work organisations' to promote the development and dissemination of new forms of work organisation. The project must identify the nature of the workplace-level changes which characterise new forms of work organisation in Europe. More sound knowledge on this subject of new work organisation will in turn help:

- industrial employers to identify the benefits of change and the nature of leading edge practice;
- social partner organisations to identify appropriate responses to changing forms of work, including the provision of support for change where necessary;
- public policy makers (at EU, national and regional level, including universities and research institutes) to identify the policy frameworks, proactive measures and business services required to animate and sustain desirable change.

As such, the HIRES-project contributes to the targets of the Competitiveness and Sustainable Growth Programme by helping to promote awareness, development and dissemination of the types of work organisation required in the volatile global markets of the 21st Century, and propose relevant schemes for implementation.

The first task in this project (Work Package 1) is a literature review. The goal of this report is to produce a detailed analysis of European literature and research relating to the 'high road' of innovation, identifying (a) drivers for change; (b) characteristics of change; (c) benefits of change; (d) obstacles to change; (e) dangers of change. Literature and research will be sourced from across the EU. This analysis will provide the framework for the subsequent interrogation of case studies (Work Package 2) and for the structure of the website resource. The participants take their own country as starting point and gather literature which is part of the debate on in their own countries. Literature review in this way is not limited to country itself, but will include international (US, German etc) literature as well.

1.2 Outline of the report

This report has the following outline:

- In the second chapter of this report, the framework for analysis is put forward.
- In the third chapter, a detailed analysis is made of the central elements for the high road of innovation.
- In the final chapters, the main conclusions are formulated.

2. Framework for the analysis

2.1 Introduction

This chapter describes the context in which the shift or development towards new forms of work organisations take place. The first paragraph deals with the policy context in which the European Union is interested in new forms of work. The second paragraph looks at the elements of importance in defining the high road to innovation.

2.2 Policy review

2.2.1 The economic drive

The HIRES-project aims to build the knowledge base required to support the development and dissemination of new forms of work organisation in industry (and services). It grows from the concern of its partners to build the new organisational competencies which employers need to survive in an environment which requires continuous innovation and agility. The proposal builds on discussions within European Work Organisation Network (EWON), created by DGV to animate dialogue and collaboration relating to workplace innovation. EWON and other RTD thematic networks will therefore play an important role in strengthening and disseminating project outcomes.

The drivers of competitive advantage have become increasingly complex. Competition from low-cost economies, the progressive reduction of trade barriers, the compression of time and space – including access to geographically remote markets, and the rapid obsolescence of existing technologies and work practices, pose a major problem of transformation for European enterprises especially SMEs. The growing centrality of services is also transforming the nature of competitive advantage – not just in the rise of new sectors such as the creative industries but also the increasing dependence of the 'traditional' economy on ICTs, RTD and the new generation of financial services.

As Key Action 1 of the Growth Programme argues, there is a need for new methodologies and tools to support the emergence of innovative strategies both at enterprise level and in the wider economy, especially relating to SMEs. The innovation capacity of industry needs to be strengthened to enable local economic structures to adapt to the new economy. This involves a more global approach to the acquisition of knowledge, to the identification of opportunities and to the creation of strategic alliances. New and increasingly a-spatial forms of 'industrial district' are required to build an effective system of innovation if SMEs are to realise their employment creation potential .

In increasingly competitive global markets there is continuous pressure to deliver faster and better products and services at lower prices. But quality, speed and flexibility will, in the long term, not be enough to create growth and employment. They have become "entrance factors" (Porter 1985) in the market place: conditions which must be met simply in order to stay in the game. Yet these limited objectives remain the dominant concern of most of our managers and policy makers. This perspective must now change.

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 our competitors. This 'high road' of workplace innovation and competitiveness means the continual reinvention of products and services using our rich European potential of knowledge, skills and experience in a more imaginative and effective way. Traditional ways of organising workplaces and traditional styles of management, including the 'low road' of cost-driven change cannot achieve this

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 company. But there are no blueprints. Each company must learn to adapt organisational structures, skills and cultures in ways which reflect their individual circumstances and potential.

However the spread of new forms of work organisation has been constrained by a number of factors:

- *A poor knowledge base.* Research is fragmented, and there are too few bridges between academics and practitioners. Change agents have limited awareness of and access to 'evidence-based' approaches to work organisation. There are few mechanisms for ensuring collective and cumulative learning about emerging approaches to work organisation.
- *There is limited capacity in the field.* Too few agencies, programmes and initiatives concerned with work organisation exist across Europe as a whole; those that do exist are often isolated from each other and there is little sharing of expertise and experience.
- *Public policy is equally fragmented.* Several parts of Europe lack a national policy framework or infrastructure relating to the development and dissemination of new forms of work organisation.
- *Dissemination is weak.* There are few focussed attempts to raise awareness of the role of work organisation in achieving competitiveness, or to raise the standard of organisational change attempted by companies.

This project will create a new knowledge resource for practitioners, policy makers and researchers designed to promote the development and dissemination of new forms of work organisation throughout Europe, thereby contributing to the achievement of EU objectives at several different levels:

2.2.2 The political context

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. This project will provide practitioners and policy makers with a clear, evidence-based account of how that balance can be achieved in practice.

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:

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

In contrast the emergent European model of work organisation:

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

The Lissabon, Nice and Lulea-summits have further stressed the need to achieve these goals set out.

The new article 2.1 of the European Social Fund makes specific reference to "innovation and adaptability in work organisation" and the "anticipation of changes in employment". However concern has been expressed by the EWON group that many ESF-supported projects are insufficiently informed by an awareness of work organisation and its significance for EU objectives. This project will provide clear guidance for national ESF units and project promoters on the significance of the high road of work organisation and its implications for practical action.

In particular there is recognition of the need to promote a 'high road' of organisational change, driven by an innovation-based approach to competitiveness rather than a one-dimensional model principally focussed on cost reduction (the 'low road'). However it is also recognised that there are severe obstacles preventing the spread of innovative practices to enterprises across Europe. Drawing on the work of the European Work & Technology Consortium (created by DGV between 1995-

1998), the European Foundation's EPOC (Employee Participation and Organisational Change) research and other sources, these obstacles can be summarised as:

- 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, resourcing and sustaining workplace change.
- The inappropriate or inadequate nature of regulatory frameworks and policy programmes.

2.2.3 The European Research Area

The European Council has stressed on several occasions in recent years the importance of sustained research and technological development for growth and employment. It will look further into this issue at the Special European Council in Lisbon in March entitled "Employment, economic reform and social cohesion - Towards a Europe of innovation and knowledge". The European Parliament, for its part, has often drawn attention to the need for Europe to increase investment in science and technology.

In particular ERA foresees the tackling of science/society issues on a European scale, by encouraging:

- greater coherence of foresight exercises and socio-economic intelligence at national and European levels;
- establishment of a platform for exchange;
- development of statistical indicators and harmonisation of data and methodologies on a European scale.

The need to address these obstacles is also reflected in the aims and activities of the new European Work Organisation Network (EWON) created and managed by DGV. This proposal has been designed to support EWON (plus other European Networks and Actions) in achieving these objectives through the creation of a shared knowledge resource. Such a resource will provide a clear guide to the emergence of a European paradigm of work organisations, including drivers for change, characteristics of change and obstacles to change. As such it will provide an important tool for policy makers, social partner organisations and those involved in animating and guiding change in the workplace.

2.3 Defining the high road

From the current debates, most of the examples about the high road to innovation, point to the following six (organisational) solutions:

1. workplace partnership, dialogue and organisational change
2. the team-based organisation
3. knowledge management, innovation and creativity

4. employment in the knowledge-driven economy
5. organisational factors in ICT design and implementation
6. inter organisational structures, virtual teams etc.

Ad 1. The high road to innovation must be a participative one. Only through the collaboration between employer and his/her workforce can innovation be enhanced. Organisational change is a necessity in the current economic setting. But such change can only be achieved by letting employees have their say in the changes. We have long passed the time that employers were supposed to 'know it all'. Only by motivating the employees to help change the company can employers hope to have their companies adapt to the ever changing environment. This collaboration can be seen in many forms such as workplace partnerships at the lowest levels in the companies, but also in co-operative relationships between unions and employers at the highest levels in the company. Employee stock options schemes can also be a way to organise such a partnership.

Ad 2. Team-based organisations have been an approach which was developed more than four decades ago. Team-based organisations are organisations in which the core tasks are organised around small groups of employees which have a large degree of decision latitude on issues such as production planning, staffing, job rotation etc. Organisational innovation is enhanced with such measures. This self determination helps higher management to focus on other important issues such as product innovation (Dhondt e.a., 1996).

Ad 3. In our knowledge intensive society, we cannot rely on a small group of workers to help companies remain innovative. It is necessary to use the knowledge of all employees. Teams are an important means for this. But equally important are measures to assure the possibility to store knowledge and knowledge sources and to make such knowledge available to all employees.

Ad 4. All European economies have seen an important growth in services and service related jobs. Knowledge intensive jobs are a prime factor in most of these service sectors. Countries have to find ways in which they can support this knowledge intensity.

Ad 5. ICT is an important means for companies to innovate products and processes. But it is clear that informatisation of organisational processes cannot be executed in a neutral way. It is necessary to know in which way organisational factors play a role in ICT design and implementation. ICT can be bent in ways which are detrimental to innovation. To achieve innovation and organisational performance, one must try to achieve a careful fit between organisation and the information technology.

Ad 6. A last element which has to be taken into account when looking at the high road to innovation is the influence of supply relations between organisations. A company cannot rely on its own strength to compete in this new economic environ-

ment. Strong ties with other companies are needed to succeed and to innovate. How such ‘bonds’ are translated at the shop floor is not always very clear to managers. Trust between companies must also have trusting relations between workers of different companies. In some cases, employees need to be able to work in environments in which their counterparts are only ‘virtual’ companions on the road. Virtual teams are an important means in innovation.

In our literature analysis we want to identify the core elements of the change process to achieve these solutions. If we want to help companies use these separate solutions on the high road to innovation, it is necessary for to show the following:

- Which are the drivers within companies for change,
- What are the characteristics of change ;
- What are the benefits of such changes (sustainable growth, social benefits etc);
- Are there obstacles to change (labour market structure etc.).
- And possible, there are dangers to this change.

3. Results of the literature review

3.1 Introduction

The literature review will be structured by the five features of change developed in the previous chapter. We will analyse each of the six solutions in this manner. In each paragraph, literature relevant for that topic will be summarised. First we will start with a short overall overview of this literature to pinpoint possible lapses in the amount and quality of this literature. The main goal remains to identify the central elements for the high road of innovation. In the conclusion to this chapter, we will give an assessment of the crosscutting themes. The outcome of this chapter will be the basis of the framework for analysing the case studies (see chapter 4). In this literature review, we will refer to the annex by using the numbers of the sources analysed.

3.2 General overview

For the literature review more than 100 books, articles and other sources of literature are reviewed (see annex 1 for detailed accounts of this literature). Each of the partners in the project has conducted a review of the current literature in their possession and has sifted out the most relevant literature for the review. For each source, a short summary was made and a first analysis of the source was done using the approach described in 3.1. The literature was limited to sources from the last decade. Literature originates mostly from European countries but also from the United States. The quality of the literature is also quite broad with several historical and regional accounts of the high road, theoretical approaches, some survey results and some research to distinguish separate issues. This last type of literature is somewhat underrepresented in the sources collected by the network.

3.2.1 Quantitative review of the organisational solutions

In the table (3.2.1) a schematic view is presented of the reviewed literature. In the rows of the table (1) drivers, (2) characteristics, (3) benefits, (4) obstacles to and (5) dangers of change are distinguished and in the columns the crosscutting themes: (a) workplace partnership, dialogue and organisational change (b) the team-based organisation (c) knowledge management, innovation and creativity (d) employment in the knowledge-driven economy (e) organisational factors in ICT design and implementation (f) inter organisational structures, virtual teams etc.. A seventh category was added because it appeared that many features of change deal with other factors. For drivers of change very often factors like performance, economic growth, improved competitiveness were listed and for benefits in particular factors like improved competitiveness, flexibility, better quality etc. Therefore this new category was added.

Table 3.2.1. Schematic view of literature review The numbers in the table refer to the number of each reviewed piece of literature (see annex 1 for details).

	a. workplace partnership, dialogue and organisational change	b. the team-bas organisation	c. knowledge management, innovation and creativity	d. employment the knowledge-driven economy	e. organisational factors in ICT design and implementation	f. inter organisational structures, virtu teams etc.	g. Other factors increased competition, globalisation, finacial effects, effieciency etc
1. Drivers for growth (change due to sustainable growth demands)	30,43,52,71		8,22,23,25,26,37,41,55,61,106,107,110,115	58,70,73	41,51,108,117,118,119	2, 55,107,109,110,111,112,113,114,116	10,11,12,13,19,20,21,22,23,24,25,26,27,28,29,31,32,44,46,47,48,49,50,53,54,56,59,60,61,62,63,65,66,68,69,72,107
2. Characteristics of change (macro level)	13,22,23,25,26,49,50,52,55,57,58,59,63,65,67,68,71	1,15,17,18,19,20,21,23,24,25,26,27,43,44,54,55,59,60,62,63,71	2,8,10,11, 12,23,27,54,63,72,106,110,11,118	28,29,55,58,64,69,70	51,117,119	14,43,61,63,66,106,108,112,113,114,115,116	41,64,109
3. Benefits of change (sustainable growth, social benefits etc)	23,25,26,28,56,57,58,63,67,68	1,54,61,72	12,23,26,37,54,56,62,106,107,108,110,112,113,116,117	19,58,69,114	12,115	14,106,108,117,118	14,17,18,19,20,21,22,24,25,26,27,28,30,32,41,43,44,46,47,48,52,53,56,59,60,611,62,64,65,106,109,111,112,113,114,116,119
4. Obstacles of change (labour market structure etc.)	20,23,49,52,57,58,61,67,68	23,54	53,54,115	69,70,117,118		107,109,112	44,50,51,59,61,63,72,106,110,113,114,117,119
5. Dangers of change	49,51,57,67		37,54	69,,58,70,120			31,43,47,51,56,63,108,112,113,114,115,117,118

A quick glance at the table shows that not for every single combination the same amount of literature is found and reviewed. Not all reviewed articles are to be found back in the table because not always the abstracts gave enough information to do so.

3.2.2 Quantity of literature of the different features of change

Drivers, characteristics and benefits of change are covered in the majority of the literature reviewed, but, as is visible, we can find less literature about obstacles to and dangers of change. The literature is mostly interested in the current changes, less in trying to find out why such changes are brought about. When it comes to the thematic categories it is also clear that not all themes are equally covered. For instance, characteristics of change of team based organisation are frequently investigated, but little attention is directed to drivers for change to such teams. We can also see that drivers for change to knowledge management and benefits of such changes are dealt with in the literature. Another remark which can make is that our approach appears to be to narrow in some respects. For that reason, we have included the "other factors" category, which will be dealt with separately. Looking at the table it is clear that most of the literature looks at drivers for change and the benefits of change, but doesn't always link it to the content. This somehow indicates that research and writing is somewhat too much oriented at processual matters. The link between organisational form and processes is not close enough. In the specific subparagraphs we will deal with the themes in more detail.

3.3 Workplace partnership, dialogue and organisational change

3.3.1 Drivers for change and implementation

In the reviewed literature, the drivers for workplace partnership and organisational change can be classified in according to the following factors:

Motivational drivers:
- To improve industrial relations. (30)
- New management philosophies. (57/2)
- The transition from 'hard' economic factors towards 'soft' factors including core competencies, speed to market, knowledge and innovation, reputation and service. (57/2) (58) (63)

Performance drivers:
- To achieving competitive advantages and sustainable growth with an acceptable quality of working life. (56)
- To increase competitive advantages.(57/1) (63)

Contingency factors:
- Market maturity as well as increased competition and fragmentation of markets. Customer demand for smaller quantities of customised products. (57/2) (58) (63)
- Prise based competition from low wage countries. (63)
- Need to reduce costs. (63)

Technological drivers:
- Dramatic innovations in ICT. New process and product techniques. (57/2) (63)

Organisational factors:
- Exposure from pressure form other parts of the supply chain; out of date working practices. (63)

Our first assessment shows that no one factor is seen as the main driver for change to workplace partnership. In most literature, there is a tendency to point at contingency factors. "It are factors in the external environment which push companies to change.". To some degree, we can see that the literature takes the drivers for change too much for granted. The authors only state external factors as a reason to change to such intra- and inter organisation collaboration, but do not acknowledge the importance of showing how specific the factors which are needed to come about to such change. In our case studies, we will need to look at these drivers in more dept.

3.3.2 Characteristics of change

The characteristics of change have been described in paragraph 2.3. Our question is here which kind of change method or change process can be distinguished in the literature?

Use of company strategy
- Following a high road strategy that emphasizes variety, service and quality. (27)
- Organisations were trying to 'add value' by: Improving quality; Providing innovative products and services; Customer service; Responsiveness (72)

Use of personnel management methods
- The introduction of family friendly policies and the potential for employee development and improved employability. (57)

Use of technology
- Having a technology that requires high levels of skill. (27)

Use of training
- Using such human resource practices as high levels of training and innovative pay systems. (27)
- Other characteristics include the employee skill development, changes in job design and challenges to traditional demarcations and hierarchies. (58)

Intended organisational design
- Other characteristics include changes in job design. (58)
- Multi-tasking and increased job responsibilities. Job influence. (71)
- Effective high-performance work systems require in their design three basic components: opportunity for substantive participation in decisions, appropriate incentives and training and selections policies that guarantee an appropriately trained, skilled workforce. (28)

Use of dialogue, participation or consensus making techniques, futuring
- Participation, focus on personal competences and learning through a dialogue. Trying to create a win-win situation for employees and employers. Organisational change in Denmark followed the Scandinavian model meaning that change should be based on a shared consensus of both employees and employers (50)
- Greater employee involvement in change. There has been a shift from indirect communication with employees through collective channels to direct communication with employees as individuals. Unions have also pushed for greater direct participation for their members to enhance quality of working life (QWL). (57)
- The basis of changes is formed by creating a shared understanding. The enterprises display a high rate of innovation and have been successful in introducing new forms of work organisation and in managing the resultant changes. A focus on future success. (58)

Culture approaches
- 'High-trust' is a characteristic of organisational culture that was sought both by HR practitioners and those advocating Japanese management philosophy during the 1980s. (58/2)
- Roles and responsibilities had also changes with the top three ideas being: putting forward new ideas; decide own work scheduling; allocation of own work and monitoring quality. (72)

Product, marketing approaches
- Partnership in the workplace, collaboration and networking among enterprises, competitive advantage through innovation of products and processes and operating in the emerging virtual economy. (63)

Involvement of politics
- The policy-oriented perspective is also relevant. Regional concentration of networking agents specialising in complementary activities (production, technology and know-how transfer, social and political cohesion) in the same sector. (112)

Ad hoc
- The results indicate that there is considerable activity taking place … much of it happening without being structured in a partnership agreement. The survey results go some way to systematically documenting partnership/involvement activities and arrangements, and in turn confirm the anecdotal evidence on the subject. (75)

This list shows that very different techniques were used to bring about the change. To some extend, change processes are not consciously brought about. This is a recognition of the fact that 'managed change' is to some extent a contradiction (Clemmer (1995), cited by Mintzberg, 1998). Changes sometimes arise without no clear plan. The issue for workplace partnership is quite clear to the authors. In (68), a clustering is made of fifteen principals of partnership into four main principals:
- good treatment of employees now and in the future,
- empowerment,
- employee rights and benefits,
- employee responsibilities.

These four principals are a good summary of the goals of workplace partnership change found in the other literature. The methods to achieve workplace partnerships are quite diverse. This is also a recognition of the fact that workplace partnerships are not always a controlled change. Partnerships need the agreement of at least two partners, which may require more than a blueprint of the required partnership.

3.3.3 Benefits of such changes (sustainable growth, social benefits)

The literature is somewhat more elaborate on this subject. Some sources give a precise description of the amount of performance improvement achieved. These sources

see workplace partnership as the primary factor for such benefits. Although we have divided the different benefits according to competitive benefits and quality of working life benefits, most sources see both benefits achieved at the same time. Workplace partnerships are not only oriented at one benefit.

Competitive benefits
- 77% of organisations said there market competition had increased over the previous three years. 61.5% said that they were attempting to 'add value' to their products and services. (72)
- Increase in profits, increased turnover (58/2).
- Product quality; market responsiveness; flexibility (112).
- The results of the study confirm a strong association between partnership and performance. (52)

Quality of working life benefits
- Employee turnover was a quarter of the industry average. (57)
- Doubling of the size of the workforce. Also, employee support for partnership is demonstrated through high employee satisfaction, and low levels of turnover an labour absenteeism. (58/2)
- High level of skills and know-how; social cohesion; labour market cohesion. (112)

3.3.4 Obstacles to change

The literature distinguishes several sources which can obstruct the change to workplace partnerships. Some of these obstacles can be outside of the power of those in the company. Some personnel characteristics make it very difficult to achieve some kind of partnership. In many cases, management does under invests time and money to bring about the required change. But the main obstacle to change appears to be the absence of good methods for such changes. Our case study research can be a good source to give some more insight into change methods. This conclusion is in line with our conclusion that the characteristics of the change process is only rudimentarily described in most of the sources.

Obstacles outside the company
- Institutional framework (44)
- Trends of emphasis on deregulation, hire and fire and combining low skills with low wages. (57)

Characteristics of personnel
- Part-time, shift and administrative staff can receive less training and communication (57)
- Workforce resistance, barrier between the practical knowledge of workers and the scientific knowledge of designers, difficulties in committing all employees to the changes and not enough staff available for development projects. (63)

Management priorities

- Changes often require a lot of time and effort, enterprises are not always willing to invest this. (59)

Bad or insufficient methods

- Difficulty to involve employees on a large scale and with profound impact. Because of lack of involvement of employees the innovative changes remain dominated by the employers and the higher management without taking the opinions of employees into consideration. (50)
- Failure to gain and sustain employee involvement. Failure to recognise the factors that motivate diverse workers. (57)
- The top three obstacles to change were highlighted as being: lack of planning time, uncertainty about the consequences of change, lack of Human Resources. (72)
- Gap in management literature on the connection between strategic planning and organisational development and how strategy implementation links the two. (81)
- Difficult to compare different new forms of work (NFWO's) and therefore the progress resulted from changes is hardly measurable.(56)
- Enterprises often have difficulties in implementing the new forms of work organisations associated with partnerships. (58/1)
- Obstacles to organisational change highlighted include: the pace of change and the need for continuous improvement implied by intensified competition. In non partnership companies it is noted that the traditional dichotomy between management and labour is not compatible with the development of high-value-added production systems. HRM practice is illustrated as being 'littered with examples of high failure rates' because they have not offered substantive improvements in the work organisation and labour management systems. (58/2)

3.3.5 Dangers to this change

Workplace partnership has a positive sound to it. But is it all as nice as the theorists say? Three main dangers can be seen. A first danger to the partnership, but also to the possible positive outcomes of this partnership, is a strategic one. Some manager try to misuse the change for other goals. Of course, goals can change over time, but short term change of priorities can reduce the benefits of a partnership. A second danger is the under investment in the means to keep the momentum going. Workplace partnerships require a continuous attention. A last danger is that such partnerships can lead to some unintended consequences such as intensification of work. It is important in the case studies to keep an open eye for such results.

Change as a Trojan horse

- The misuse of the means for other management priorities such as cutting labour costs. (58/2)

- Opportunistic behaviours and information leakage when co-operation between productive agents is not mediated by institutional and social actors, e.g. technology centres and business associations; long-term organisational and technological lock-in. (112)

Under investment
- The decay over time of the level of training at high performance work organizations. (37)
- Occupational health and safety systems are not up to date for organisational changes. Higher risks for workers are possible and also visible in some countries. (61)

Unforeseen consequences
- The challenge to both managerial skill and hierarchy, and the 'unsettling' experience for some workers who make the transition to new forms of work organisation. New working practices may also quickly reveal shortcomings in the skills base of the workforce. (58/2)
- Increase of stress among employees because of involvement in all the steps of the change process. (63)
- Do new forms of work organisation lead to intensification, redundancies or negative impacts upon roles particularly undertaken by women? (72)
- Excessive de-structuring of local productive districts. (109)

3.3.6 Conclusion: the change process of workplace partnerships

From this analysis, it is clear that there doesn't really exist an important body of knowledge on how to achieve such workplace partnerships. Too much different methods and lack of proven methods can make possible users of workplace partnerships more weary. It is therefore quite clear that a more structured approach is required to develop change methods for workplace partnerships.

3.4 The team-based organisation

3.4.1 Drivers for change and implementation

Teamwork is one of main topics in the literature about the high road. It is therefore striking that we find very little about the drivers for change to teamwork.

Motivational drivers
- Social changes in work organization that give employees a better view of the entire production process and more responsibility appear to underlie the most important innovations. (30)

Contingency factors
- Improving flexibility and competitiveness in a fast changing environment. (54)
- Pressure from cheap imports, consumer demand for high design and increased choice of styles, quality issues and the need for quick response. (67)

Technological drivers
- Technological developments such as EPOS and the need for quick response. (67)

Our analysis shows that the literature only scarcely deals with drivers for change to team work. Also here, there is a tendency to point at contingency factors.

3.4.2 Characteristics of change

The following table shows which kind of change method or change process can be distinguished in the literature.

Use of personnel management methods
- The Danish case study also demonstrated high levels of worker autonomy and responsibility including decision relating to hours of work, how many team members will be employed, assessment of results and calculation of bonuses. (67)

Use of training
- The collected papers describe a number of change characteristics. Not surprisingly, the Scandinavian case studies demonstrated a very high commitment to training (19 weeks of training in the Danish case). (67)

Intended organisational design
- Job design determines team size and reward systems.

Use of dialogue, participation or consensus making techniques, futuring
- Through co-ordination among the team members as a result of their ability to self-regulate work, eliminate bottlenecks, resolve conflicts, help one another solve problems and make improvements in the production process. (1)
- Change to teamwork according to the 'Scandinavian model': voluntary membership, group selects own members and group leader, mixed qualifications, skill dependent rewards and a large autonomy. (60)
- The British case study showed that the change process was enabled by the presence of a 'change champion' and also that they had attempted to involved the whole company in the project. (67)

The methods to achieve teamwork are quite diverse, but seem to point in the direction of 'planned change' methods.

3.4.3 Benefits of such changes (sustainable growth, social benefits)

The benefits of teamwork distinguished in the literature are listed in the following table.

Competitive benefits

- Semi autonomous group working, business units and divisions which reflect key market segments or production processes (lean production), new reward systems. Greater job widening, job enrichment, competence development and delegated participation lead to better competitiveness.(21)
- Teams: Higher quality, lower costs, & responsiveness to retailers. Modules also perform better than bundles in reducing work-in-process inventory & throughput time. (1)
- An enhanced rate of innovation of processes and products combined with improved innovative capacities of semi autonomous work groups. (54)
- Efforts by workers are dependent on equilibrium between organisational and remunerative policies. As such, these choices determine the organisational performance. (15)
- Better quality of services and processes, reduction of unnecessary costs, improved customer relationships, improved operating efficiency. (24)
- Economic effects (higher productivity through higher labour efficiency). (60)
- Many benefits are sited including: Quicker throughput, Reduced work in progress, Improved quality, Time spent on checking quality reduced by 50%. (67)

Quality of working life benefits

- Better industrial relations and quality of working life. (24)
- Improved attendance as indicator of an improvement of the quality of working life. (60)
- Other benefits for workers include fairer payment systems, access to new skills and the ability to see the completion of the entire product.(67)
- Team production is preferred because of the fact that it is ‘better’ for workers, when it comes to income, job security and autonomy. (43)

Our conclusion is in line with workplace partnership. The literature is somewhat more elaborate on this subject. Some sources give a precise description of the amount of performance improvement achieved. Most authors do however point at competitive advantages, but social advantages are always included into the reasoning.

3.4.4 Obstacles to change

The literature identifies several obstacles to the teamwork change process.

Obstacles outside the company

- "Anglo-American" institutional systems, which are not readily permeable to collaborative production in its various modes. "Exclusionary" forms of decision-making are shown to dominate the postures of establishments towards the handling of change. (13)

Management priorities, methods

- If innovation is motivated by improved productivity/competitiveness worse results on QWL are seen than if it is motivated by improving the QWL itself. Short term orientation on e.g. stock market demands lead to less attention at QWL and the possible positive effects of QWL on company performance.(21)
- Workforce resistance to change', time pressure, using temporary staff generates pressures. (23)
- Too much attention paid to technical end economic factors and no consideration for social factors. (30)
- Reasons for failure cited in the report include: no commitment – goals ill-defined and are contradictory to the needs of the employees (67)

Bad or insufficient methods

- The range of decision making rights of employees is limited, the management to a large extend wants to control the membership of the work teams. (23)
- Reasons for failure cited in the report include: Lack of systematic tools and methods – lack of employee participation; Failure to address social and cultural aspects of change (67)
- To ensure that the approach is more widely adopted it is suggested that organisations need to demonstrate greater trust, permit greater participation and autonomy over work. (68)

In most cases, obstacles can be found in the poor management priorities and in the absence of good methods for such changes. Our case study research can be a good source to give some more insight into change methods.

3.4.5 Dangers to this change

The following dangers are pointed out with the introduction of teamwork:

Change as a Trojan horse/Under investment

- In many companies the role of semi autonomous work groups in innovation processes is unclear. Insufficient use of the innovative capacities of semi autonomous work groups. (54)
- Innovations that are primarily motivated by the need to improve performance and competitiveness have a tendency to impact negatively on QWL or have no relationship. (21)

Unforeseen consequences

- Team working – central to QWL initiatives – can result in intensification, and may not provide results if it focuses on the 'softer' side.(58)
- Purely cost-cutting and flexibility enhancing innovation strategies decrease the demand for labour and therefore lead to more unemployment.(19)
- Major changes have lead to an intensification in the pace and complexity of work. (21)
- In team concept extra stress has been reported (23)
- Some of the fastest workers sometimes lose out economically with the introduced of daily pay rates, however, low performers seemed to improved both their earnings and performances within a team structure. Some people , and supervisors and middle managers in particular can feel threatened by change and the perceived threat to their status (p72) (67)

Most of the danger with teamwork is that it can lead to some unintended consequences such as intensification of work. It is important in the case studies to keep an open eye for such results.

3.4.6 Conclusion: the change process of team based organisations

Most of the literature appears to be more interested with the benefits of team based organisations, rather than describing the change process itself. As with workplace partnerships, there exist too much different methods and lack of proven methods to achieve good models of team work.

3.5 Knowledge management, innovation and creativity

3.5.1 Drivers for change and implementation

In the reviewed literature, the drivers for change to knowledge management can be classified in according to the following factors:

Motivational drivers

- Intra-firm special efforts to build up learning mechanisms; management of external knowledge-sources; introduction of knowledge-management strategies and tools (110)

Contingency factors

- Globalisation: pressures of the emergence of the global knowledge economy, and recognition of knowledge as a key and intangible asset are making the effective management of knowledge a priority. (10)
- Increased competition. (11)

Technological drivers

- The paper focuses on the fact that organisations need to be 'smart', i.e. knowledge-driven, inter-networked, dynamically adaptive to new organisational forms

and practices, learning as well as agile in their ability to create and exploit the opportunities offered by the digital technologies. Micro level of business practices oriented to fit the knowledge-based economy. (115)

Organisational factors
- Learning-oriented organisational forms and practices. (115)

This review shows only limited amount of factors, such as was found in the previous chapters. Again, a lot of stress is put on contingency as if knowledge management wouldn't be a conscious decision by management. We still need to develop a good insight into these drivers.

3.5.2 Characteristics of change

The following table shows which kind of change method or change process is distinguished in the literature.

Use of company strategy
- Management and leadership play a critical role in establishing the multi-level context for the effective assimilation of knowledge management practice. (11)

Use of technology
- Knowledge management; adding human and organisational dimensions to the design, selection and implementation of new technologies (10)
- Implementation of new technologies. (11)

Use of dialogue, participation or consensus making techniques, futuring
- Making use of the available knowledge by involving employees in the change process. A participatory approach is used to work on organisational development so that a dialogue between employees becomes the motor for innovation in the work organisation.(49)

Intended organisational design
- Knowledge sharing processes enhanced through sociotechical systems design. Adding human and organisational dimensions to the design. (11)

3.5.3 Benefits of such changes (sustainable growth, social benefits)

The benefits of knowledge management distinguished in the literature are listed in the following table.

Competitive benefits
- Effective assimilation of knowledge. (11)

- Better implementation of knowledge management systems. Knowledge is the organizational asset that enables sustainable competitive advantage in hyper competitive environments. (12)
- Enhanced knowledge production in the firm; innovation; new flexible organisational solutions at the firms level . (110)

Surprisingly, only competitive benefits are discovered in the researched literature. In the case studies, we must broaden the subject to the possible benefits of knowledge management for workers.

3.5.4 Obstacles to change

The literature identifies mainly methodological obstacles to the knowledge management change process.

Bad or insufficient methods/ terminology
- Unclear definitions and classifications: misbalance information-knowledge appropriate to a company or industry. This leads to misfit between technologies and goals of knowledge management. Only information can be stored. Knowledge storage is not possible, but knowledge intensive systems can exist. (10)
- Focussing solely on intra-firm network of knowledge flows. (110)
- Poor knowledge base of practitioners and managers, skill shortage when considering organisational new practices and solutions. (115)

3.5.5 Dangers to this change

We could only identify one danger as a consequence of the change to knowledge management.

Unforeseen consequences
- Tight selection of unfitted organisation, especially when considering SMEs 'classical' weaknesses (skill shortage and scarcity of financial resources supporting organisational renewal). (115)

3.5.6 Conclusion: the change process of knowledge management

Knowledge management is clearly one of the organisational solutions on the High Road to innovation. Strangely enough, our project group has only analysed very little sources on this subject. This is quite understandable in this sense that most of the literature on knowledge management remains theoretical in nature. Real life case studies have only rarely been analysed.

3.6 Employment in the knowledge-driven economy

3.6.1 Drivers for change and implementation

In the reviewed literature, the drivers for a change to a knowledge driven economy can be classified in according to the following factors:

Contingency factors
- The strength and the coherence of local innovations systems, particularly in terms of enhanced communication and learning mechanisms, are major factors of attraction of new agents and of networking mechanisms among incumbents and entrants. (106)

Local strategies
- Recombination of SMEs' tacit know-how with codified knowledge owned by consultants, research and technology institutes, financial markets. (114)

Ad hoc
- Endogenous growth via the entry of new firms, employment growth, increasing innovative capacity of local firms, virtuous self reinforcing growth (114)

3.6.2 Characteristics of change

The following table shows which kind of change method or change process is distinguished in the literature.

Use of personnel management methods
- 'Built to last' sees a world dominated by stable and often large companies that recognise starts from the basis that knowledge is the principal source of competitive advantage and can only be achieved by offering comprehensive remuneration packages to retain individuals in whom knowledge is vested.(69)

Use of technology
- The concentration of higher level of technological knowledge in well defined region-specific and industry-specific economic spaces. (106)
- Competitive advantage in 'staying ahead of the game'. An assumption of the Wired World is that ICTs will provide benefit for quality of business, social life, both for individuals and communities. (69)

Use of training
- The report (p.29) quotes Clegg and Clark (1998) who argue that incremental organisational change is now replaced by discontinuous change, which again challenges the underpinning logic of many approaches in change management. Occupational shifts and qualitative changes in work are also highlighted as being characteristics of the changing nature of work.(69)

- The development of individual competencies needs to occur in people who have been disaffected by traditional working practices. (69)

Use of dialogue, participation or consensus making techniques, futuring

- The 'Wired World' scenario is built upon the development of trust-based communications networks underpinned by strong personal and business networks. (69)

Involvement of politics

- Focussing on Italian evidence from traditional sectors and large plants productions, the paper shows that the development of local clusters is based most of all on the organisation of consolidated SMEs' tacit know-how, which benefits from the recombination of such tacit competence with more formalised knowledge owned by actors belonging to the financial and research fields. This 'networks of networks' give place to virtuous self reinforcing growth. Local clustering of SMEs and knowledge-intensive business services. (114)

The methods to achieve a knowledge drive economy are somewhat more diverse than what we have found in the previous paragraphs. Training and technology are quoted somewhat more. New is the importance of politics for the development of knowledge economies.

3.6.3 Benefits of such changes (sustainable growth, social benefits)

The few benefits of change to a knowledge driven economy are distinguished in the literature are listed in the following table.

Competitive benefits

- Increased customer satisfaction. (69)

Quality of working life benefits

- Greater employee satisfaction. (69)
- Reduced labour turnover through incentives to retain knowledge. (69)

3.6.4 Obstacles to change

Little benefits are distinguished, but there are more obstacles to such a change listed in the literature.

Obstacles outside the company

- Social inequality could constrain national creativity and the emergence of Britain as a knowledge economy. (70)

Characteristics of personnel

- Without sufficient supply of high skilled labour the growth process may face supply constraints. (51)
- For individuals, physical or psychological barriers should not hamper access to ICTs. (69)

Management priorities
- The process of translating the myriad of messages about the need for change is highlighted as being an obstacle for some enterprises. The DTI themselves need to understand the potential scope and nature of change itself. Disseminating information on new forms of work organisation is, therefore, a considerable challenge. (69)

Bad or insufficient methods/terminology
- Weak learning and interaction mechanisms. (106)

Policy environment
- The findings suggest that predictions about the New Economy are unlikely to materialise unless an appropriate policy environment is in place, notably as regards employment and human capital development policies. (51)
- Without proper governmental support the gap between technological development and the development of the work organisation increases. (51)

3.6.5 Dangers to this change

Most of the dangers to a knowledge driven economy have to do with unforeseen consequences.

Change as a Trojan horse
- The development of secure and efficient electronic commerce is a key feature of Wired World – the danger is that the commercial opportunities could be monopolised by larger firms. (69)

Unforeseen consequences
- Lock-in. (114)
- Lack of employment security. (69)
- Of course, rapid change can incur social exclusion and the report recommends the full participation of the UK Social Exclusion Unit in the debate.(69)

3.6.6 Conclusion: the change process of knowledge driven economies

There is only very little literature investigated by the network on this subject. It will be also somewhat problematic in the case studies to research this subject since this subject is at a higher level to investigate than at the company level.

3.7 Organisational factors in ICT design and implementation

3.7.1 Drivers for change and implementation

In the reviewed literature, the drivers for ICT design and implementation change can be classified in according to the following factors:

Contingency factors
- Demographics, including an ageing population and the increasing number of single households. (70)
- The change to service and information based economy. (70)
- Rise of non-standard employment. (70)

Technological drivers
- New communication and information technologies. (108)
- Intertwining effect of organisational and technological change, i.e. the decentralisation of activities and the related specialisation of production, is enhanced by new communication technologies, and the introduction of ICTs is favoured by network-oriented organisational change. (109)

As is clear from this table, most of the drivers are related to contingent factors.

3.7.2 Characteristics of change

The following table shows which kind of change method or change process is distinguished in the literature.

Use of technology
- ICTs are major factors of innovation in the organisation and implementation of corporate activities(117)
- In this context digital technologies play key role in favouring interaction and knowledge exchange within the firm and between the firm and partners, in turn enhancing the innovative activity of the firm. The introduction of ICTs a the firm level enhances the opportunities to access, accumulate and re-combine both internal and external knowledge bases. (118)

Intended organisational design
- Organisational change and renewal. (120)
- At the micro-level the introduction of innovation in the technology needs a proper organisational context to effectively adopt the new technology; organisational and behavioural changes are eventually to be introduced to achieve superior business performances. (119)

Use of dialogue, participation or consensus making techniques, futuring

- Personal communication; social learning; organisational change and renewal. (120)
- If new communication technologies account for several opportunities to gain efficiency and expand markets, vis-à-vis interaction remains crucial in that it enhances frequent trustworthy relations which endorse the exchange of tacit know-how, of competencies, experiences, best practices and opportunities to introduce organisational and technological change. (120)

Involvement of politics

- Social embedded technology policy favours the introduction of cumulative waves of technological change; the focus is especially concentrated on cluster-oriented national technology policy. (120)
- Recursive and often informal interactions build up the social cohesion of (local) economic systems and at the same time they create the proper environment for the development of strategies and policies oriented to the introduction of innovation. (120)

3.7.3 Benefits of such changes (sustainable growth, social benefits)

In contrast to the previous chapters, the literature also points out to several organisational benefits of ICT design and implementation.

Competitive benefits

- Enhanced innovation in products and organisation . (118)

Organisational benefits

- When considering the relationship between the introduction of new technologies and the organisational change, and their relationship with growth and innovation, main results of this paper are that 1) new communication technologies produce significant improvements in the growth of the firm through the renewal in the form of organisation and in the organisational behaviour of the firm, and that 2) the more complex the technology introduced, the more complex the organisational behaviour and the greater the achievements in the growth process of the firm. (119)
- Improvements in R&D and learning activities building up internal networks between complementary functions; introduction of cumulative innovations in production and organisational technologies and practices (in other words, the introduction of ICTs ensure the introduction of complementary technological and behavioural changes in the management of production and organisation of corporate activities); improvements in the building up of change management practices. (117)
- Enhanced interaction and networking both intra- and inter-firms; knowledge exchange and production; innovation in organisation. (118)
- Effective introduction and use of new technologies; organisation-oriented technological change. (120)

3.7.4 Obstacles to change

The literature identifies mainly obstacles in the methods to implement ICT design.

Obstacles outside the company

- Local factor markets structure (low labour mobility, sticky financial markets). (114)

Management priorities

- Management – too often demands employee compliance rather encouraging personal creativity. In addition, there must be high-trust cultures in both the corporate environment and the broader society. (70)

Bad or insufficient methods/terminology

- The introduction of technological change per se, without taking into account demand factors (e.g., level of competencies, structure of the organisation both at the firm and the regional level) and more generally the social dimension of innovation. (120)
- Not all work can be improved by technological innovations (like work at shops, hotels, restaurants etc.). These types of work cannot changes to the same extend as technology develops. (53)
- The mere investment in IT capital product does not assure per se innovation and growth in the firms' performance. (119)
- Performance issues relating to organisation form, depend much on the performance and inter working of technology, infrastructure, and working practice.(2)
- Weak internal cohesion and interaction between functions; skill shortage; organisational and information stickiness (117)

3.7.5 Dangers to this change

The dangers of ICT design lie mainly in several unforeseen consequences:

Unforeseen consequences

- Rapid performance improvements in ICTs will generate potentially revolutionary and disruptive changes in a number of corporate functions, including transactions, distribution, technological development and strategy. Important implications in terms of the changing nature of professional networks, co-evolution of technology (including the ICTs) and organisational practices, and the management of change in increasingly complex systems are pointed out. (117)
- Globalisation – international division of labour with greater global segregation; Socio-economic inequalities – Britain could be characterised by polarisations in cultural, educational and material living standards. (70)
- Social exclusion (70)

- The increasing specialisation in skills and labour may cause, especially in the case of technological clubs, higher and higher wages levels in turn reducing positive effect on factor productivity; polarisation of labour market. (108)
- The growing polarisation in labour markets, when the societal framework is not taken into account to introducing innovation (120)

3.7.6 Conclusion: the change process of ICT design and implementation

The main problem with ICT design change lies with the lack of sufficient good methods to implement such changes.

3.8 Inter organisational structures, virtual teams etc.

3.8.1 Drivers for change and implementation

In the reviewed literature, the drivers for inter organisational structures can be classified in according to the following factors:

Contingency factors

- Institutional and technological communication channels: i.e.: mobility of human resources; user-producer relationships; large firms-small firms coexistence; market entry-exit; academic and R&D infrastructure; new communication and information technologies; urban and metropolitan agglomeration; professional and industrial clubs. (107)

Technological drivers

- Drivers for change are sometimes to be found in these factors. Like Antonelli & Marchionatti (1998) argue that the intertwining effect of organisational and technological change is enhanced by new ICT's and this is favoured by network oriented organisational change. Also other sources state networking as a driver (Montgomery 1995, Britto,1998).
- Declining cost of information technology, increased complexity of the product mix and demands for perfect quality goods and on time delivery (JIT) so that competitiveness improves. (29)
- IT-solutions make just-in-time practices in much of manufacturing and continuous replenishment practices in retail trade possible. (29)
- Network-oriented organisational solutions are proper choices for firms to fit the technological environment in which firms operate; networks are adaptive and fitting responses to the kind of technological structure and competition firms are involved in. (116)

Product characteristics

- Increasing complexity of the product mix lead to the need for workplace practices that improve the problem-solving capabilities of the workforce. (29)

As is consistent with the other organisational solutions, the drivers for such changes are mainly seen in the 'untouchable' environment. We need to be conscious of the other factors which have been limited investigated.

3.8.2 Characteristics of change

The following table shows how the change process to inter organisational collaboration is a conscious one. This is in contradiction with was found in the previous paragraph. It is clear that collaboration with other companies require conscious efforts by management.

Use of company strategy

- Internalisation of production externalities via production co-operation, sub-contracting relations (113)
- Internal networking among different sources and producers of knowledge bases, e.g. the different departments of the firm (111)
- The core activity of the firms is shifting towards the corporate production and organisation of new knowledge. It concentrates on internal relationships and interdependencies among different and yet complementary blocs of competencies and capabilities. The organisation of such competencies and capabilities, and the resulting internal network, is key in explaining market advantage and the growth of the firm. (111)
- It clarifies production interdependencies among local clusters of specialised firms and hence highlights that close co-operation between complementary firms is key factor explaining high rates of innovation and growth within industrial district. Agglomeration provides the technical conditions for a recursive exchange of complementary know-how and artefact-embedded knowledge among local firms. (113)

Use of personnel management methods

- High employee commitment is needed for success. (14)
- Increased employee involvement in high performance work systems and rethinking the role of front line workers. (29)

Involvement of politics

- The institutional context of local economic systems provide communication opportunities to access, accumulate and recombine technological knowledge. (107)

3.8.3 Benefits of such changes (sustainable growth, social benefits)

Benefits of such changes are evenly distributed to competitive and quality of working life.

Competitive benefits
- Increased flexibility, cutting costs. (14)
- With increased employee involvement it is possible to increase revenues and profits and earn "information rents" (competitive advantages) regardless of whether productivity improves and unit labour costs decline. Furthermore the opportunities to solve problems increase which leads to higher plant performances.(29)
- Improving competitiveness by responding faster to environmental changes than the competition. (49)

Quality of working life benefits
- Increased communication and decision making by front-line workers, provides them with the skills, incentives and opportunities to solve problems, and enables them to intervene in the production process which improves plant performance on multiple dimensions. (29)
- Trustworthy exchange and absorption of different and yet interdependent knowledge-bases. (107)
- Improving the quality of working life by involving employees in the change processes. (49)

3.8.4 Obstacles to change

There are quite a few obstacles to change identified in the literature. This is understandable since inter organisational collaboration is difficult. Most of the problems lied in insufficient methods.

Obstacles outside the company
- Infrastructure endowments. (113)
- Intra-industry local competition may induce weak co-operative mechanisms. (112)

Characteristics of personnel
- Local labour market structure. (113)
- Skill shortage. (117)

Management priorities
- Time to see a return on investment is quite long which can hamper motivation to execute such a change.(14)
- Sticky organisational structure. (117)

Bad or insufficient methods/terminology
- The gap in the organisational structure, and more precisely the lack in adjusting the organisation of production chain in a networked-oriented way. (109)

- The path dependency of the competitive model (firms are 'irreversibly' used to organisational and productive models which were successful in the past but may need renewal at present). (113)
- Underestimation of vis-à-vis and personal communication. (118)

3.8.5 Dangers to this change

The literature does not distinguish a lot of dangers.

Change as a Trojan horse
- Horizontal and vertical risks of information leakage and opportunistic behaviour due to mono-sectoral industrial structure. (107)

Unforeseen consequences
- Further organisational de-structuring and weakening of opportunities of interactions. (117)

3.8.6 Conclusion: the change process of networked organisations

From this analysis, it is clear that there doesn't really exist an important body of knowledge on how to achieve such inter organisational networks. A lack of methods is at the forefront of this analysis.

4. Conclusions and framework for the case studies

The main results of this review are to be concluded by the question: what are central elements for the high road of innovation? We want to know how the change strategy must look alike to get onto this high road of innovation. We have analysed the literature which was detected by the partners in the network. This literature review is needed to deliver an analytical model for the case studies. It gives a state of the art overview of the current thinking or knowledge on the subject. With the Hires-project, we must enhance this knowledge. A quick overview of the central results can point out which subjects need to be tackled in these case studies.

4.1 Which are the drivers for change?

In table 4.1 we can see that the literature stresses contingency factors. This means that most authors presume that change is unintentional and forced upon the companies. This is also clear from the technological factors which are stressed in the literature. The question is if this result is the consequence of limited research models and methods used. In our case studies, we must carefully investigate this subject. If change to the high road is inevitable as the literature suggests, then the room for manoeuvre is rather small. If, on the contrary, change can be created within companies, then such change becomes a policy issue. It is our hypothesis that the latter is the case.

Table 4.1 Number of sources for drivers of change to a high road for innovation.

DRIVERS	Number of sources
Motivational drivers	5
Performance drivers	2
Contingency factors	12
Local strategies	1
Technological drivers	9
Organisational factors	2
Product characteristics	1
Ad hoc	1

4.2 What are the characteristics of change?

Table 4 shows which methods have been deployed in bringing the organisational solutions about in the investigated companies. Somewhat to our surprise, and in contradiction with the result from table 4.1, change is ‘engineered’ in the companies. In most cases, participatory approaches are used. But we can also see that strategic and top-down approaches remain common. For the case studies, these are subjects which should be investigated: is change a top-down or bottom-up process (or mixed); and what means is the most successful.

Table 4.2 Number of sources for characteristics of change to a high road for innovation.

CHARACTERISTICS	Number of sources
Use of company strategy	7
Use of personnel management methods	5
Use of technology	7
Use of training	5
Intended organisational design	7
Use of dialogue, participation or consensus making techniques, futuring	10
Culture approaches	2
Product, marketing approaches	1
Involvement of politics	5
Ad hoc	1

4.3 What are the benefits of such changes?

Table 4.3 shows which kind of benefits can be obtained by choosing high road-solutions. The literature is somewhat more prone to investigate competitive benefits. Since we are using an innovation perspective in our project, this is of course an important subject for us too. But we should also be keen to look at the upside for workers and for the organisation.

Table 4.3 Number of sources for benefits of change to a high road for innovation.

BENEFITS	Number of sources
Competitive benefits	19
Quality of working life benefits	12
Organisational benefits	4

4.4 Are there obstacles to change?

Table 4.4 gives an overview of several obstacles to change. Interesting is the fact that in most sources, bad or insufficient methods are pinpointed as obstacles to a successful change. This is somewhat in line with paragraph 4.2 in which no one method was found as dominant for the changes. There exists a severe lack of good insight into the change process. This is of course one of the reasons why the Hires-project is required. We must therefore be very sensitive to the methods and the way these methods are qualified by the companies. Only in such a manner can other companies learn from the experiences of the case studies.

Table 4.4 Number of sources for obstacles to change to a high road for innovation.

OBSTACLES	Number of sources
Obstacles outside the company	7
Characteristics of personnel	6
Management priorities	9
Bad or insufficient methods/terminology	21
Policy environment	2

4.5 What are the dangers of these changes?

A separate subject is the fact that we must not be blind to possible negative sides to High Road-solutions. Table 4.5 makes clear that the literature shows unforeseen consequences of such organisational measures. Only by taking such consequences into account is it possible to develop strategies and methods which can be profitable to largest amount of companies and workers.

Table 4.5 Number of sources for danger of change to a high road for innovation.

DANGERS	Number of sources
Change as a Trojan horse	6
Under investment	2
Unforeseen consequences	19

Annex 1 – Literature list

(see separate document for numbered literature list per Institute)