

# 13 Interplay of technological and organisational innovations: the case of eWork diffusion in the New Member States

*Does eWork help to open new development paths? Lessons from various EU projects*

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## Abstract

*This chapter focuses on some dimensions of the distribution of eWork in selected New Member States (NMS) and in the EU-15 countries. The introduction outlines various cycles of the transformation process in the Central and East European (CEE) region, and locates the eEconomy in this process. Our approach is to provide an analysis of the distribution of eWork and to present the aspects of demand and supply from a labour process perspectives. The authors interpret eWork not as a new tool of working facilitated or enabled by ICT, but as an organisational innovation. Due to this interpretation, the recommendations formulated for both policymakers and researchers call attention not only to the complexity of changes required by the successful implementation of eWork, but also to the often neglected social-organisational and cultural contexts of these changes. In this perspective, the importance of different production paradigms and their national variations should be stressed. For example, more flexibility in manpower and skill use related to post-Fordist forms of work organisation - supposing the existence of an adequate ICT level at the firms - may speed up the distribution of various forms of eWork. At the same time, the dominance of the Fordist type of work organisation may slow down the speed of implementing eWork even in firms that are equipped with an excellent quality of ICT equipment. In stressing the organisational innovation character of eWork, we have to mention that more efforts should be made - among both practitioners and researchers - to better understand and overcome the socio-cultural and economic barriers (e.g. industrial-age management culture) to the flexible use of manpower and knowledge. In this relation, we have to call attention to the significant role of networking in 'project-type work' and the related patterns of knowledge conversion that have taken place in the labour process.*

## 13.1 Introduction: the various cycles of the transformation process

### 13.1.1 Cycles of 'destruction' and 're-construction' in the post-socialist economies

In the social sciences, the early 1990s were a period of studying the so-called 'transformation economies', which visibly enriched the literature with numerous volumes on the political, economic and social changes that took place in Central and Eastern Europe

(CEE).<sup>1</sup> In this decade, the theoretical concept of 'path-dependency' helped social scientists to refute the 'institutional vacuum' view which overlooked the importance of the varied social-economic and cultural history of these countries. The 'path-dependency' approach provides a better understanding of the variety of development trajectories in the post-socialist economies in the Central European region and calls attention to the evolutionary character of socio-economic and technological development.<sup>2</sup> The explanatory strength of this approach was helpful in understanding the 'destruction' of the state-socialist political and economic regime, and the 'reconstruction' of the market economy and the democratic political institutions in the post-socialist economies. Using this view, we could understand - among other things - the uneven development of post-socialist firms and management. In this relation, we have to note that privatisation, market competition and foreign direct investments (FDI) based investment policies were the main drivers of economic development and modernisation in the CEE countries, but 'social filters' (labour relations systems, educational and training institutions, regional development agencies, etc.) also played a significant role, since it was through them that the various social actors (owners, managers, the state, workers and their interest representative associations, etc.) experienced and 'digested' the changes. Differences in the 'absorptive capacities' related to these changes may explain the differing speeds and paths of the transformation process in the countries of Central and Eastern Europe. For example, at the end of the 1990s, especially from 2001 onwards, incoming FDI started to decline in Hungary, as was also the case in Poland and the Czech Republic, whereas the foreign capital export from these countries began to increase, especially from Hungary (see Appendix 1). In addition, the composition of FDI changed dramatically: in the share of FDI, manufacturing investment was increasingly replaced by services and trades. Experts dealing with the FDI-based development model have recently warned that 'the reserves of once-successful attractive factors were exhausted. Investors' interest turned to other investment targets. Under the conditions that pertained, the capital absorption capacity of the country may also have become saturated. The decline on both the demand and the supply side is interpreted here as an end of a period of capital attraction. To revive the capital inflows will require the establishment and strengthening of new attraction features.' (Szanyi, 2003).

### 13.1.2 The 'creative' cycle of the transformation process

In the first cycle of the transformation process - which lasted until the second half of the 1990s -, the key motives of FDI were 'market seeking' and 'efficiency seeking', while in the new cycle 'knowledge seeking' is the main motive and the key driver of the FDI-based

<sup>1</sup> By using the term 'transformation' instead of 'transition', we intend to refute the thesis of 'instant capitalism' in the post-socialist economies of the Central European region, because this view underestimates the importance of time for social learning processes in creating market economy institutions in these countries.

<sup>2</sup> 'Path-dependent emergence of a new, post-socialist form of capitalism calls for a complex evolutionary interpretation of this great transformation, as opposed to the 'big bang' view which, as the metaphor itself suggests, forgot something historical was there before' (Chavance, 1995).

economic growth in the post-socialist New Member States (NMS) (Makó, 2003).<sup>3</sup> In the 'creative cycle' of the transformation process, the position of the CEE countries in the global economy (and first of all in the EU market) can only be maintained and/or improved if they take part in the exchange of goods with products/services containing higher added value. In other words, they have to attract strategic functions and services of the multinational corporations (MNCs) instead of low value-added operations which still dominate the manufacturing and service landscape of these economies.<sup>4</sup>

In the new period of the transformation process the main drivers are - among others - the intensified global competition and the increased profit expectation derived from the dominance of the financial markets. These pressures force economic actors to implement cost-cutting management practices and other forms of organisational innovations (e.g. new working practices like telework, etc.) in the economy in general, and in the SME sector in particular.<sup>5</sup> These are achieved by - among other things - the use of ICT in the process of delocalisation of various business services. ICT is opening up or facilitating radical changes in management methods and work organisation, especially in the service sector. However, the impacts of ICT-based changes on work organisation do not diffuse equally either in the economy or in society.<sup>6</sup> In this relation, we may detect a visible gap

<sup>3</sup> The notions of New Member States (NMS) and Central and Eastern European countries are overlapping and cover different subgroups of countries: NMS comprise the Baltic republics of Estonia, Lithuania, Latvia; the Mediterranean countries of Malta and Cyprus; and the Central European (CE) countries of the Czech Republic, Hungary, Poland, Slovakia and Slovenia. These countries joined the EU in May 2004 (Bulgaria and Romania are expected to join in 2007, while Turkey's accession is under analysis and political assessment). In our analysis we are focusing on the CEE region, and most notably, on the Czech, Hungarian and Polish economies, which have been most thoroughly researched and analysed by international comparative projects as well as being the largest of the NMS.

<sup>4</sup> The position of Central European countries in the 'knowledge-based economy' is surprisingly good. For example, according to the OECD 2001 report, the role of the ICT sector is extremely significant in Hungary: '... in Ireland (35 percent of the manufacturing trade), Korea (32 percent) and in the Netherlands, Japan, Hungary and Mexico, where it represented one quarter of the total manufacturing trade in 1999' and '... international scientific co-operation in science and technology is also relatively high in Hungary, Poland and the Czech Republic' (OECD, 2001).

<sup>5</sup> During the first cycle of the transformation process, the SME sector was an extremely important employment generator in the CEE region and especially in Hungary. The SMEs employed the great majority of laid-off or dismissed personnel of the restructured/privatised state-owned enterprises and public sector. To maintain this important employment stabilisation function of the sector, it will be of crucial importance for SMEs to improve their position in the globalised economy using the opportunities opened up by the extensive use of ICT.

<sup>6</sup> According to the results of a recent survey comparing the development of the information economy and society among New Members' States, it is necessary to mention that in the case of the information economy (measured by the share in output, employment and export of the sectors producing ICT equipments and services) Hungary belongs with the most developed countries, together with Malta and Estonia. However, in the case of indicators of information society (e.g. number of PCs per households, Internet access at home, etc.) Hungary belongs among the less developed countries (cf. Gáspár, 2004). However, even in the case of information society, households have heterogeneous positions. For example, the preliminary results of the 'Regional-IST' project (2001-2004), comparing the distribution of ICT equipment by region (Baden-Württemberg, Catalonia, Portugal, Piedmont and Hungary) indicates the following patterns: only 34 percent of Hungarian households compared with 61 percent of

in the use of *eWork* between large firms and the smaller ones (SMEs). The empirical experiences call attention to - in addition to well-known factors such as the price of ICT equipment or income structures of the population, lack of content development, etc. - the often undervalued influence of the organisational and cultural factors which limit the distribution and use of *eWork* in the economy. Adopting this approach, this chapter interprets *eWork* as a form of organisational innovation and stresses the importance of a labour process analysis. Stressing the key role of organisational and cultural factors in the diffusion of *eWork*, we intend to focus on the SME sector. This does not mean that implementation of *eWork* in large firms is not shaped by these factors, but the role of organisational innovations and the related organisational learning processes in large firms are widely investigated and known for decades in the management literature.<sup>7</sup> By contrast with this extensive knowledge of *eWork* diffusion in large firms, we have often only fragmented, case study based (anecdotal) experiences on the SME sector.

Organisational innovations have crucial importance for firms' capability to solve significant organisational problems more efficiently. There is no consensus in the academic community on the interaction between organisational and technological innovations. However, we share those views according to which ICTs are not external factors, but develop within the social and organisational practices of the firms (institutions). In spite of the abundant empirical works on organisational innovation, consensus on the classification of organisational innovations is still lacking. Among the attempts to develop a typology of organisational innovations based on the depth of organisational change, we found Schienstock's classification (2004) the most suitable for our analyses. Instead of distinguishing between isolated or piecemeal versus integrated (holistic) forms of organisational innovations (Alasoini, 2003), he suggests making a distinction between various types of organisational innovations according to the changes in the core components of organisation and according to the relationships between these core elements (we will describe the content of this classification in detail when interpreting telework diffusion, in Section 13.3).

The present chapter is structured around two main issues. The first one deals with the *delocalisation* of business services from the demand side perspective of employers, while the second one addresses the preconditions of the successful implementation of telework. In identifying the degree of involvement of some of the NMS (Czech Republic, Hungary and Poland) in the process of delocalisation, we may construct a 'proximity indicator' which expresses the position of these economies in the new (creative) cycle of their economic development. The countries' attractiveness in practising business service functions indicates the followings: the three CE economies occupy a leading position in high value-added business service exemplified by software development and support. However, this favourable ranking among the top ten destinations is fragile. Fragility here refers on the one hand to the asymmetric positions of medium and large sized firms in compari-

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households in Baden-Württemberg have a PC and home Internet use is 14 percent versus 47 percent of households. The share of regular Internet users in Hungary is 20 percent compared to 30 percent in the other three regions. However, there are no differences in the share of *eShopping* among the Internet users in the five regions surveyed. Similarly, the level of mobile phone penetration is extremely high (65.7 percent to 83.2 percent) in the regions investigated. (cf. Regional-IST project - IST-2001-33199).

<sup>7</sup> For some examples, see Brown & Duguid, 1991; Koike & Inoki, 1990.

son with the micro- and small companies and on the other to significant sectoral discrepancies (e.g. the relatively weaker position of the manufacturing sector than that of the business and financial services).

To better understand the various characteristics of business service delocalisation, the next section presents a typology of work delocalisation, identifies the position of three CE countries in the process of work delocalisation, assesses the reasons for choice of locations and indicates the role of size in the use of ICT-related services.

## 13.2 Work delocalisation: the attractiveness of the CE region (demand side perspective)

### 13.2.1 The typology of work delocalisation: the case of generic business functions

In the EMERGENCE project (see Appendix 3), work delocalisation (*eWork*)<sup>8</sup> is broadly defined as 'any information work that is carried out away from an establishment and managed from that establishment using information technology and a telecommunications link for receipt or delivery of the work'. In classifying work delocalisation, the following two distinctions were made, firstly the *legal distinction* between work carried out within the organisation (i.e. by employees, usually covered by employment contract) and outsourced work, normally carried out under a service supply contract. The second dimension of *eWork* made a distinction between work carried out by a group or collective of workers on shared 'office' premises and work carried out individually and away from 'office' premises. Table 13.1 illustrates the typology of *eWork* or work delocalisation using ICT.

**Table 13.1** Typology of work delocalisation

| Type of workplace                            | Contractual or legal  |  |
|--|---|--|
|  | Internal employees  | Outsourced   |
| Individualised (away from 'office' premises) | Employed telehomeworkers<br>Mobile employees  | Freelance <i>eWorkers</i> or mobile workers (= ' <i>eLancers</i> ')                                    |
| Collective (on shared 'office' premises)     | Remote back-offices/call centres<br>Employees working in telecottages or other third party premises | Specialist business service supply companies<br>Outsourced call centres (= <i>eService suppliers</i> ) |

Source: Huws & O'Regan, 2001: 15

The employers' survey - which covered 7268 employers in 18 European countries, the 15 EU Member States plus the Czech Republic, Hungary and Poland - and 62 company case

<sup>8</sup> Work delocalisation is of course a broader term than *eWork*, but in what follows we shall use the former term in a narrower sense covering only the ICT-facilitated work delocalisation.

studies carried out in 54 NUTS1 EU regions<sup>9</sup> examined *eWork* through the delocalisation of the following seven generic business functions:

- customer service, including information supply, counselling and advice;
- sales (telemarketing and mobile sales);
- data processing, typing and other forms of data input;
- software development, maintenance and support;
- accounting, debt collection and other financial services;
- human resource management and training;
- design, editorial and other forms of creative or content-generating work including research and development.

### 13.2.2 Demand for *eWork* in Europe: the relatively good position of the CE countries

Using the broad definition of work delocalisation presented in the previous section (Huws & O'Regan, 2001), we can say that almost every second (49 percent) employer interviewed in the 18-country employers' survey is already practising some form of *eWork*. Comparing national variations in the distribution of *eWork*, several distinctive types were identified, for instance Sweden, Finland and the Netherlands - the advanced high-tech economies - had high levels of *eWork* by employees, whilst Central and Southern Europe had high levels of '*eOutsourcing*'. These latter countries are highly attractive for work delocalisation, which involves strong demand for micro- and small firms. The availability of ICT in these countries has enabled these firms to combine the traditional forms of subcontracting with *eSubcontracting*. However, the diffusion of *eWork* is higher in large firms than in small ones.

On comparing the locations involved in remote work, employers (i.e. the demand side) mentioned the following ten top 'destinations' for *eWork* relocation (see Table 13.2).

Comparing the two columns in Table 13.2, we can say that the Czech Republic and Poland in both absolute and relative terms and Hungary in absolute terms are among the top ten most favoured destinations for *eWork* for companies across the EU.

From among the seven generic business functions identified by the EMERGENCE project it is possible to single out the most attractive destinations for software development and support. The following three categories of countries should be distinguished: (1) the three NMS: Poland, the Czech Republic and Hungary; (2) the capital regions or highly developed urban zones with strong business sectors, like Brussels, London, Lombardy, Northern-Westphalia, and the Madrid Region; and (3) the so-called 'secondary regions', which are also developed and represent attractive top locations for software development and maintenance (e.g. Emilia-Romagna in Italy, North-East Spain, Southern Spain and the Bremen region in Germany).

<sup>9</sup> With regard to this, we have to call attention to the problem of the EU NUTS1 level regions, which were the basis for classifying locations. NUTS1 regions are large and in the case of the smaller countries (e.g. Denmark, Ireland, Luxemburg, Portugal) they constitute a whole country. In the case of the candidate countries, due to problems of the data compatibility, locations were coded at the national level only, despite the relatively large size of Poland. The case studies' sample is structured as follows: 27 trans-regional and 24 cross-border relocations (eight of which were transcontinental cases), in addition, the sample includes three 'mixed cases' (i.e. involving both cross-border and trans-regional relocation).

**Table 13.2** Top ten 'destinations'\* for eWork (absolute and per capita)

| Absolute                      | Per capita                        |
|-------------------------------|-----------------------------------|
| Poland                        | Region Bruxelles (Belgium)        |
| Czech Republic                | Bremen (Germany)                  |
| London (UK)                   | Noord-Nederland (The Netherlands) |
| Baden-Württemberg (Germany)   | Czech Republic                    |
| Nordrhein-Westfalen (Germany) | Poland                            |
| Noreste (Spain)               | Hamburg (Germany)                 |
| Comunidad de Madrid (Spain)   | London (UK)                       |
| Lombardia (Italy)             | Berlin (Germany)                  |
| Hungary                       | Luxemburg                         |
| Bayern (Germany)              | Sur (Spain)                       |

\* In the EMERGENCE 18-country employers' survey, we made distinction between source and destination countries. By source country we meant a country from which a business function was relocated into another region, country or continent. The destination country indicates the country to which the above mentioned business functions were relocated (these are sometimes referred to as 'host-countries').

Source: Huws & O'Regan, 2001: 52

Table 13.3 displays the top ten locations for 'software development and maintenance'.

**Table 13.3** Top ten destinations for software development and support (in absolute terms)

|                               |
|-------------------------------|
| Poland                        |
| Czech Republic                |
| Noreste (Spain)               |
| Nordrhein-Westfalia (Germany) |
| London (UKI)                  |
| Comunidad de Madrid (Spain)   |
| Lombardia (Italy)             |
| Hungary                       |
| United States                 |
| Nord Est (Italy)              |

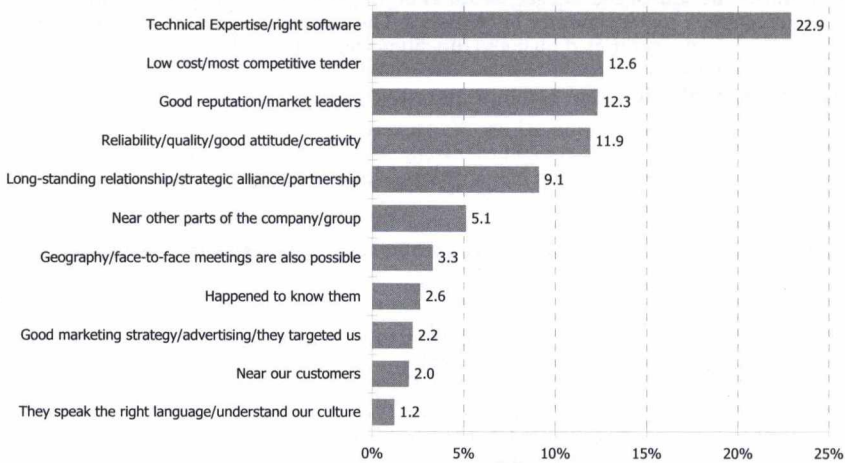
Source: EMERGENCE European Employer Survey, 2000 (IES/NOP). Weighted figures, establishments with >50 employees in EU-15 plus three Candidate Countries. Huws & O'Regan, 2001: 62

In relation to the reasons for choice of location, contrary to the widely held stereotyped views, 'low cost or most competitive tender' comes only second after 'technical expertise'<sup>10</sup> followed by 'good reputation/market leaders', while 'reliability/quality/good

<sup>10</sup> In relation to the examination of reasons for the choice of destination of work relocation, it is worth noting that according to the representative of Association of IT Entrepreneurs, Hungarian software or IT experts are not more expensive compared to the Indians. One hour wage cost in Hungary is 25 US dollars which is identical to the Indian cost. In comparison, the hour wage rate in the US 100-150 US dollars (Kováts, 2004: 11-5.)

attitude/creativity' ranks fourth on the list.<sup>11</sup> The next position was occupied by 'long-standing relationship/strategic alliance/partnership', which draws attention to the 'evolutionary' rather than 'revolutionary' character of business service relocation.

This picture sketched above regarding the various characteristics of the distribution of *eWork* concerns medium-sized and large business organisations. Unfortunately, due to the substantial budget cut of the original project proposal, the EMERGENCE project could not cover the important segment of micro- and small firms from a demand-side perspective, in spite of the fact that without exception these firms dominate the organisational morphology of the national economies surveyed in this project.<sup>12</sup> However, the size of the firm matters more in the NMS than in the EU-15 countries. These differences represent a source of asymmetrical participation of business organisations of various size categories in the emerging *e*Economy. The next section briefly outlines the position of the SME sector in the use of *eWork*.



Source: EMERGENCE European Employer Survey, 2000 (IES/NOP). Weighted figures; base = 4,154. Respondents who obtained *eServices* from another region were asked why they chose that region or supplier and were able to select several reasons for each instance of relocation. Percentages are based on the total number of reasons. Huws, 2003: 53

**Figure 13.1** Reasons for choice of outsourcer for *eServices* - the demand-side perspective

- 11 In this context a comparison can be made with the results of a study of outsourcing of call centres activities from Scotland to India. Here, the most important motives mentioned was 'reduced costs/increased profitability' and 'availability of educated staff/labour pool/skills' was only given secondary importance. The third most important reasons cited were the 'repetitive work/routine operations/outbound, cold calling'. See in detail Taylor & Bain (2003: 55).
- 12 The share of micro and small firms in the ICT sector is 95 percent in the CEE countries. In the case of Hungary, firms employing more than 20 persons represent less than 2 percent of all enterprises. In addition, it is necessary to mention that, in the ICT sector, 250-300 firms operate currently in the software industry sub-sector. Evaluating the growth potential of the ICT market in the CEE countries, the rate of ICT market growth is several times higher than in the EU-15 countries.



### 13.2.3 Size matters more in the New Member Countries than in the EU-15

On the basis of the analysis of bivariate relationships between *eWork* and the characteristics of the firms, such as the number of employees (Makó & Keszi, 2003), we can say that this type of work is more likely to be used in large firms than in the small ones, and is more likely to be practised in the business and financial service sector than in the public one.

Table 13.4 shows the distribution of *eWork* by company size, and the following interesting contrast was found between the EU-15 and the three NMS: the distribution of *eWork* within the EU-15 countries is rather balanced between the firms employing 50-200 persons (41.7 percent) and those employing more than 200 persons (44.4 percent). At the same time, in the three NMS, larger companies have greater *eWork* distribution (71.9 percent) in comparison to the smaller ones (64.5 percent). On the whole, the dominant pattern is that the larger the size of the firm, the greater the practice of *eWork*, but we can find significant differences among the former socialist economies. Following this concise overview of the distribution of *eWork* in the NMS, the next section examines the distribution of telework within small and medium-size firms in five, so-called 'strong' regions in Europe.

**Table 13.4** Distribution of *eWork* by size of the firm, percentage

| Size of firm            | Region/country      | Use of <i>eWork</i> |      |       |
|-------------------------|---------------------|---------------------|------|-------|
|                         |                     | No                  | Yes  | Total |
| 50-200 employees        | EU-15               | 58.3                | 41.7 | 100.0 |
|                         | 3 New Member States | 35.8                | 64.5 | 100.0 |
|                         | Czech Republic      | 26.3                | 73.7 | 100.0 |
|                         | Hungary             | 45.2                | 54.8 | 100.0 |
|                         | Poland              | 35.7                | 64.3 | 100.0 |
|                         | Total               | 54.2                | 45.8 | 100.0 |
| More than 200 employees | EU-15               | 55.6                | 44.4 | 100.0 |
|                         | 3 New Member States | 28.1                | 71.9 | 100.0 |
|                         | Czech Republic      | 17.8                | 82.2 | 100.0 |
|                         | Hungary             | 24.3                | 75.7 | 100.0 |
|                         | Poland              | 32.1                | 67.9 | 100.0 |
|                         | Total               | 50.4                | 49.6 | 100.0 |

Source: EMERGENCE European Employer Survey, 2000 (EIS/NOP), percentage of establishments with >50 employees in EU-15 plus Czech Republic, Hungary and Poland. Weighted base: 7,305. Makó & Keszi, 2003: 16

### 13.3 An attempt to interpret telework as a form of organisational innovation. The SME sector in a comparative perspective

The eGap research project aimed at understanding the implementation practices of telework in five 'strong' regions in Europe, namely: Tampere region (Finland), Rhône-Alpes

region (France), Central Transdanubian region (Hungary), Emilia Romagna (Italy) and Greater West London Wedge (United Kingdom) (see Appendix 2). The international eGap team combined three types of research tools, involving both quantitative (e.g. survey method) and qualitative techniques (e.g. interviews) as well as desktop research. The issues examined in the project were based on the following themes:

- preparation for implementation of telework;
- operational practices;
- enablers and inhibitors related to the introduction of telework;
- the social context of telework;
- output and impacts of telework.

From among the issues outlined, we intend to stress that the quality of the ICT used in the SME sector is important, but it does not directly influence the implementation practices of telework (see Appendix 2). Besides the quality of ICT infrastructure, the eGap project also aimed to identify and assess the roles of various social-organisational factors which influence the implementation of telework in the SME sector. In operationalising the socio-organisational dimensions of telework, we used such indicators as participation in project-type work, patterns of supervision, responsibility of employees in work, and the production paradigm, which was constructed by combining the last two indicators.

The participation of SMEs in network-type co-operation may facilitate the implementation of telework. However, the intensity of the networking of the firm *per se* or the number of individual ties established by the firms surveyed represent only an early cycle of networking. Contrary to generally held views, strong ties reflected in the extent of project-type co-operation, instead of weak ties, create favourable preconditions for the diffusion of telework in general and especially in the SME sector. It is interesting to note, for example, that the Hungarian firms surveyed in the eGap project had the most intensive individual participation in networking activities - two thirds of them co-operated with more than ten companies - while project-type work organisation was almost non-existent among them. Contrary to Hungarian experiences, in the Finnish and British regions, where weak-ties-based networking was prevalent to a lesser extent, project-type work was deeply integrated into the everyday working experiences of the SMEs.

In analysing empirical data collected from the survey of more than 1,700 small and medium-size firms in the five regions investigated, we classified them according to the pattern of supervision (direct versus indirect) and to the autonomy of employees in work. Direct or closed supervision characterised the Italian (73 percent), Hungarian (72 percent) and the French (53 percent) SMEs, while in the Finnish and British firms indirect managerial control was practised in the form of 'teamwork'. Similarly, greater autonomy in work was identified in the firms operating in the Tampere and Greater West London Wedge regions than in the other three regions (Emilia Romagna, Central Transdanubia and Rhône-Alpes) where employees had rather limited autonomy in their work. Combining

the dimensions of 'supervision' and 'responsibility in work', we may construct the following types of production paradigm (models of work organisations)<sup>13</sup> (see Table 13.5).

**Table 13.5** Production paradigm used in the analysis of the distribution of telework

| Type of supervision     | Responsibility in work      |                             |
|-------------------------|-----------------------------|-----------------------------|
|                         | Limited                     | Extended                    |
| Direct/closed           | Fordist model               | Transitional or neo-Fordist |
| Indirect (via teamwork) | Transitional or neo-Fordist | Flexible or post-Fordist    |

Source: Makó, Melles & Keszi, 2004

Using the categories of production paradigms, we can say that the highest rate of telework is typically found in regions where the SMEs made use of the post-Fordist (flexible) or neo-Fordist (transitional) production paradigm. A low distribution rate of telework was found in the firms using Fordist type working arrangements. Comparing the five regions surveyed, we can say that the Fordist and neo-Fordist type work organisation is dominant in the SMEs operating in the Emilia Romagna (90 percent) and the Central Transdanubian (89 percent) regions. Post-Fordist work organisation used by SMEs is most frequent in the Tampere region (43 percent), followed by firms operating in the Greater West London Wedge region (35 percent). The SMEs in the Rhône-Alpes region have an intermediary position between the two groups of regions mentioned earlier. Table 13.6 identifies the distribution of production paradigms in SMEs by the five regions investigated in the eGap project.

Concerning the relation between the share of telework and the dominant production paradigm, we may stress the following: the highest rate of telework in SMEs was found in the regions where 'neo-Fordist' or 'post-Fordist' work organisation was dominant, i.e. in the regions of Tampere and the Greater West London Wedge. The lowest rates of telework were identified in such regions as Central Transdanubia and Emilia Romagna where in the labour process Fordist-type work organisation is dominant and the share of Post-Fordist work organisation is residual.

In our interpretation, telework is not only a new individual form of work based on the use of ICT, but it also represents an organisational innovation.

<sup>13</sup> In developing production paradigms, beside the well-known concept of 'Fordism', we made a distinction between neo- and post-Fordist patterns of work organisation. In the first case, changes in the work do not modify radically the content of work and the degree of autonomy remains limited. In the second case, the work is characterised by high involvement of employees in the design, organisation and supervision of work (see in detail Makó (2005)).

**Table 13.6** Production paradigms in the eGap regions surveyed, percentage

| Regions   | Share of firms using the following production paradigm |                            |                           |
|---|--|----------------------------|---------------------------|
|   | Fordist  | Neo-Fordist (transitional) | Post-Fordist ('flexible') |
| Emilia Romagna (telework: 17.6%) <sup>1</sup>       | 65   | 25                         | 10                        |
| Central Transdanubia (telework: 15.9%) <sup>2</sup> | 65   | 24                         | 11                        |
| Greater West London Wedge (telework: 45.9%)         | 34   | 31                         | 35                        |
| Rhône-Alpes (telework: 68.7%)                       | 43   | 28                         | 29                        |
| Tampere (telework: 52.1%)                           | 23   | 34                         | 43                        |

<sup>1</sup> The share of telework indicates the opportunity to telework, which was measured by the simultaneous presence of distance work and ICT use in this work. The indicators are based on the calculation of Roland Keszi, used in his Ph.D. Dissertation on Telework. (October 2004). The average rate of telework concerning the five regions participating in the eGap project was 39.7%. (eGap, EU 5th Framework [2002-2004] - EU-IST-2001-35179)

<sup>2</sup> In this regard, it is worth noting that the latest European Working Conditions Survey (2001) supported our results that employees in the New Member States have considerably less control over work and organisation of tasks or over working time than in the EU-15 countries. On the other hand, support from colleagues is more readily available in the new member countries than their EU-15 counterparts. (European Foundation for the Improvement of Living and Working Conditions, 2003: 4).

Source: Makó, Melles & Keszi, 2004: 34

It is worth mentioning here that the differences in Internet use among the SMEs investigated in the eGap project were visibly smaller than the differences in their employed production paradigms.<sup>14</sup> When evaluating telework as an organisational innovation, we have to give a brief typology which reflects the extent or the depth of the organisational changes.<sup>15</sup> From among the various classification attempts of organisational innovations, in this chapter we adopt the typology elaborated by Schienstock (2004: 17-18). This multi-dimensional classification overcomes the rather simplistic distinctions of isolated (piecemeal) versus integrated (holistic) forms of organisational innovations. His approach

<sup>14</sup> In every ten firms, at least seven or nine firms are using the Internet and we found the same pattern concerning eCommunication (email). By contrast, in the case of production paradigms, at one extreme of the scale firms from Tampere and Greater London Wedge regions could be found, where more than three or four out of ten firms applied flexible (post-Fordist) production paradigms. Emilia-Romagna and Central Transdanubia represented the other extreme of the scale, where only one in ten SMEs relied on the post-Fordist type of production paradigm. See in detail, Makó, Keszi, Melles & Tamási (2004: 9).

<sup>15</sup> Among the recent analyses on organisational innovations, the following mainstream approaches were distinguished: (1) organisational design approaches focusing on the relations between structural characteristics and capacity of organisation to innovate; (2) streams of organisational learning focusing on the process of both individual and organisational knowledge creation; (3) approaches emphasising the process of change/adaptation reflecting in the new organisational form (cf. Lam, 2004). Adapting the third school of organisational innovation, we intend to examine the typology of organisational innovation based on the depth of organisational changes elaborated by Schienstock (2004).

distinguishes not only changes affecting core elements of an organisation (e.g. power distribution) and changes affecting their interrelationships (e.g. organisational profile), but also their interactions. The various types of organisational innovation are summarised in Table 13.7.

**Table 13.7** Various types of organisational innovations

| Interrelationships between core components | Core components  |   |
|--|--|---|
|  | Unchanged  | Changed   |
| Unchanged                                  | Incremental innovation (e.g. job rotation, job enlargement)      | Modular innovation (e.g. transfunctional design team, self-organising working groups) |
| Changed                                    | Architectural innovation (e.g. flat hierarchies, profit centres) | Radical innovation (e.g. virtual organisation)  |

Source: Schienstock, 2004: 18

‘Incremental’ organisational innovations do not modify either the core elements or their relationships; these types of changes are illustrated by the individual job level changes, such as job rotation, job enlargement and job enrichment. These changes do not extend the individual boundaries of the job. The ‘modular’ version of innovation modifies the existing core arrangement of an organisation without changing the patterns of relationships between the core elements. For instance, in the case of transfunctional design or planning teams, members are recruited from different units of the firm and a new core element is created within the organisation without changing the power patterns within the firm. In the case of the ‘architectural’ organisational innovation - flat organisation -, knowledge management and organisation of working activities within the firm are organised in a new, decentralised way. Finally, ‘radical’ innovation indicates visible changes both in the core elements and in their relationships within the firm. Virtual organisations or ‘project-based firms’ (PBF) (Whitley, 2004) represent this type of organisational innovation.

A good example of this was illustrated by the so-called ‘Internet-based broker firm’ case study in the EMERGENCE project. This type of project-based firm connects small firms and individual freelancers with expertise and motivation to supply the work needed for the successful realisation of the project. These Internet-based broker firms accomplish the outsourced project by consolidating a large number of suppliers into one database and then - by using the efficiency of the Internet - they ‘broker’ (intermediate) the suppliers’ services to clients for a small commission. In doing so, they have created a virtual marketplace for buying and selling digital work. The originality of this emerging organisational solution enabled by ICT is that it opens up the outsourcing perspective - which is limited in the ‘old economy’ to clusters of medium and large firms - for groups of micro- and small firms. Some of these intermediaries belonging to the category of micro- and small firms have already achieved sufficient scale to become important players in the development and expansion of eWork globally (Makó & Keszi, 2003: 35-8). This improved position of micro- and small firms, firms which combine ICT use with such radical organisational

innovations as 'Internet-based brokering', offers them a better chance to compete in the global market of *eWork* and to overcome the aforementioned size barrier (see Subsection 13.2.3).

In our interpretation, telework may belong to both 'incremental' and 'modular' innovation. In the first case, neither the core elements nor the interrelationships between them change, in other words the content of jobs remains the same and only the location is modified by using ICT. In the second case, the relationships between the core elements of the organisation do not shift fundamentally (e.g. power relations or patterns of employment between owners/managers and employees remain the same), but within the core elements, significant changes are taking place. For example, the successful implementation of telework - as we noted earlier concerning the relation between the production paradigm and the diffusion of telework - requires significant modifications both in the form of supervision (e.g. replacing direct supervision over subordinates by indirect or output-centred forms of control) and in the structure of tasks and communication in the labour process. These changes presuppose not only individual but also organisational learning, underlying the importance of the shift in working culture necessary for the successful implementation of telework. Stressing the importance of the organisational learning process, it is worth mentioning the necessary extra time needed to modify the working culture of the industrial age production paradigm and to reshape the traditional patterns of social relations of teleworkers outside the sphere of work, too (e.g. changes in the patterns of family and also in local community participation).

### 13.4 Concluding remarks: challenges for policymakers and researchers

The new path of development in the economies of the CE region represents a shift from FDI driven modernisation of manufacturing to growth generated by higher value added products and services. The new cycle of the transformation process should be based not only on the deeper integration into the international division of labour, but also on the supply of higher value-added products and services. In this regard, it is worth mentioning the findings from the EMERGENCE project (2000-2003) on the relatively favourable position of the three NMS - Poland, Czech Republic and Hungary - in the process of delocalisation of generic business services (e.g. software development and maintenance, creative activities).

The attractiveness of these economies is limited mainly to the sector of medium and large firms in spite of the fact that the overwhelming majority of firms belong to the category of micro- and small firms, which have a rather weak position in the emerging knowledge economy in the CE region. As we have noted earlier, the 'size category' matters more in the economies of the NMS than in the EU-15. Similarly, innovative activities in the micro-, small and even in the medium-sized firms are significantly less important than in large firms. In this respect, we have to draw attention to the generally 'innovation-unfriendly economic environment' in the NMS, where central and local governments rarely support the creation of science parks with lands and infrastructure, where the innovation supporting risk capital activity is almost absent, and where, in addition, the share of R&D in GDP is significantly lower than in the EU-15 countries. For example, the share of R&D in GDP in Hungary was only 0.92 percent in 2003, while Hungary's GDP per capita was only 50 percent of the EU-15 average. In addition, even before EU member-

ship, R&D activities were charged with 25 percent VAT. To get a real picture of the size of the recent government initiative (2004) to support the creation of 'regional university knowledge centres', the total annual budget of this government initiative is 1.5 billion HUF, while the Richter Gedeon pharmaceutical firm spends 7.5 billion HUF per year for research and development activities.

To overcome the asymmetric position existing between large and small firms' participation in the *e*Economy of the CEE region, important policy re-orientation is needed. Here, besides the traditional individual firm-centred support policy, we also have to mention the network-generating support schemes. Unfortunately, in the post-socialist economies of the CEE region, network development initiatives or even 'network-awareness' among the social and economic actors are underdeveloped.<sup>16</sup> In addition, it would be necessary to create not only 'best practices' or a list of 'benchmarking' cases to help the diffusion of networking of SMEs, but also to support the development of the national lead sectors or products, which would speed up the collective learning process of various social and economic actors (e.g. Nokia's benchmarking role in Finland).

Experiences identifying both the facilitators and the inhibitors of such new forms of work as 'telework' indicate the following: the social and economic actors involved in the diffusion of telework or other kind of new working practice (e.g. Internet-based broker firms) often underestimate the need to change the existing organisational culture. In other words, representatives of the government and owners/managers in the SME sector do not take account of the organisational learning process necessary for the successful implementation of telework. International projects like the 18-country EMERGENCE project on the relocation of generic business functions and eGap project carried out in 'five strong regions' of Europe drew attention to the importance of production paradigms and the increasing role of 'project-based firms' (PBF) (Whitley, 2004) in facilitating or inhibiting the implementation of new forms of work. According to these results, the presence of the post-Fordist (flexible) production paradigm and strong ties-based networking in the case of project-type work speed up the diffusion of telework. In the view of policymakers, telework is a new and individual form of work enabled by the use of ICT. Accordingly, government support relates to the creation of a new legal environment and to financial help to individual entrepreneurs (e.g. by offering subsidies to buy ICT equipment, organising ICT training courses for future teleworkers and giving wage subsidies for a certain period of time), but no visible efforts have been made to help entrepreneurs cope with various forms of organisational innovation (e.g. 'incremental' or 'modular' innovations) related to the relocation of business services or to the implementation of telework. More government efforts - both at national and regional levels - would be necessary to stimulate networking activities within the SME sector and between SMEs and large firms by developing 'project-type co-operation'.

This briefly-presented new policy approach calls for value-added partnerships based on interactions between business, educational-research communities and governments (Triple Helix) in order to identify the changing and fragile elements of the development

<sup>16</sup> In Hungary, for the tender to develop network-type co-operation, organised by the Ministry of Economy and Transport, in 2003, only 2.4 percent of small and medium-sized firms made applications. Among them, only 1.5 percent were successful, representing only 4.8 percent of the resources devoted to develop network activities in the SME sector within the total budget targeting the development of the SME sector (Csák, 2004: 3).

opportunities and to help develop a better match between the demand and supply of the necessary skills and knowledge. This type of partnership of social and economic actors is often referred to as a 'strategic' partnership and is characterised by the continuous search of new paths of development which requires '... new forms of coordinating various innovation activities,... vision creation and discursive coordination as key elements of the new steering form of the transformation process' (Schienstock, 2004: 92).

In addition to renewing policy co-ordination, we also have to call attention to the challenges social scientists have to face when dealing with the diverse aspects of the new stage of development in the transformation economies of the NMS. To better understand the various elements of flexibility in both manpower and knowledge use, it would be advisable to integrate the dimension of the 'labour process' into our approach to a much greater extent in the future. Thus, the task structure and the ICT-related task structure may be better understood and evaluated if we pay special attention to the process of knowledge creation, transfer, etc., using tools such as the SECI-spiral (Nonaka, 1994). By identifying and characterising the conversion of various forms of knowledge (e.g. interactions between tacit and explicit knowledge), we may better understand the ICT-related task-structure and more realistically locate and improve the position of SMEs in different sectors of the economy (software and business and professional services).

In this respect, it is worth mentioning the experience of the ICT professional profile tested in the interactive media sector (within the framework of the STILE project),<sup>17</sup> where we 're-discovered' - in the case of web-developing activities - the same patterns of entrepreneurship development paths as in the old economy. A large number of micro-firms display what is called 'garage mentality' and prefer the 'low-road' version of development. The core aim of these entrepreneurs is to survive and keep employment - mainly as family-business - in the context of the fast changing economic and technological environment. Firms that have the ambition to produce high-quality, high-value added services - e.g. in the interactive media sector - represent the 'high-road' of development which may be contrasted with the 'garage mentality' mentioned above. These firms, establishing project-type co-operation, may become important national or even international actors. Due to the lack of empirical evidence on 'project-based firm' activities in the CE regions, the small and medium-sized firms in the New Economy sectors (e.g. interactive media) usually copy the internationally available - mainly American - patterns of organising these activities. These patterns, however, were created and used in a rather different socio-economic and cultural context. Our knowledge is limited on the labour processes of project-based firms. To overcome this knowledge deficiency, we have to focus our future research activity on the variety of 'project-based firms' with differing outputs and goals, characterised by fluidity or stability of knowledge use and development, having hetero-

<sup>17</sup> The STILE project was set up with funding from the EU Information Society Technology (IST) programme, having such ambitious goals as updating the occupational classification (ISCO) to include eWork, developing a module for monitoring telework in the existing Labour Force Surveys, profiling ICT-related occupations, etc. (for further details, see <http://www.stile.be>). The co-ordinator of the Hungarian research team was Csaba Makó and the members of the Research Group for Sociology of Organisation and Work in the Institute of Sociology, Hungarian Academy of Sciences (<http://socorg.socio.mta.hu/>), dr. Judit Lakatos, head of division (Hungarian Central Statistical Office), Tamás Koltai, senior researcher (Hungarian Central Statistical Office), Éva Tót, senior researcher (Research Institute of Education, Ministry of Education).



geneous motivations of their participants, e.g. partner involvement based on short term (financial) interests versus long-term interests, trust, etc. (Whitley, 2004: 25-6.).

By identifying the patterns or a typology of skill conversion and skill identities, we may better understand the different development paths and the different institutional supports consistent with these models of development in organising business activities. International comparative studies could be an appropriate methodology for better understanding the special organisational-cultural and economic environments of SMEs and for identifying the variety of patterns of the 'low' or 'high road' of their development.

## Appendix 1

**Table A1.1** Foreign direct capital investment in selected economies in the CE region (in million euros)

| Countries      | 2000   | 2001  | 2002  | 2003  |
|----------------|--------|-------|-------|-------|
| Czech Republic |        |       |       |       |
| Inward FDI     | 5,404  | 6,296 | 9,012 | 2,289 |
| Outward FDI    | 47     | 185   | 219   | 206   |
| FDI Balance    | 5,357  | 6,111 | 8,793 | 2,083 |
| Hungary        |        |       |       |       |
| Inward FDI     | 7,998  | 4,391 | 3,026 | 2,182 |
| Outward FDI    | 664    | 399   | 292   | 1,408 |
| FDI Balance    | 7,334  | 3,992 | 2,734 | 774   |
| Poland         |        |       |       |       |
| Inward FDI     | 10,334 | 6,372 | 4,371 | 3,756 |
| Outward FDI    | 18     | 97    | 228   | 324   |
| FDI Balance    | 10,316 | 6,275 | 4,143 | 3,432 |

Source: Csabai, 2004: 63

## Appendix 2

eGap is an EU-funded IST research project aimed to understand the diffusion of telework, within special social-cultural and organisational contexts in the SME sector (<http://www.egap-eu.com>). The sample distribution by regions and size is illustrated in the following tables.

**Table A2.1** Characteristics of the firms surveyed based on sample regions

| Regions                   | Number of firms | Percentage |
|---------------------------|-----------------|------------|
| Emilia Romagna            | 500             | 29.2       |
| Central Transdanubia      | 306             | 17.9       |
| Greater West London Wedge | 303             | 17.7       |
| Rhône-Alpes               | 300             | 17.4       |
| Tampere                   | 305             | 17.8       |
| Total                     | 1,714           | 100.0      |

Source: Makó, Melles & Keszi, 2004: 3

**Table A2.2** Size distribution of firms by the regions surveyed, percentage

| Size of firms<br>(number of persons employed) | Regions        |                      |         |                              |             | Total |
|---|----------------|----------------------|---------|------------------------------|-------------|-------|
|   | Emilia Romagna | Central Transdanubia | Tampere | Greater Western London Wedge | Rhône-Alpes |       |
| Micro (<10)                                   | 24.8           | 17.9                 | 23.0    | 9.2                          | 13.6        | 18.3  |
| Small (10-49)                                 | 67.8           | 68.1                 | 64.9    | 71.6                         | 67.3        | 66.9  |
| Medium (50-249)                               | 5.0            | 14.0                 | 12.1    | 19.1                         | 15.3        | 12.0  |
| Large (>250)                                  | 2.4            | -                    | -       | -                            | 3.7         | 1.3   |
| Total   | 100.0          | 100.0                | 100.0   | 100.0                        | 100.0       | 100.0 |

Source: Makó, Melles & Keszi, 2004: 4

### Appendix 3

The EMERGENCE project (Estimation and Mapping of Employment Relocation in a Global Economy in the New Communication Environment) was set up under the directorship of Ursula Huws with funding from the EU Information Society Technology (IST) programme to identify and measure the distribution of eWork. Various research tools were used (e.g. statistical analysis, 18-country employer survey, case studies, statistical modelling, etc.) to map the patterns of the new division of labour in the eEconomy. Between 2000 and 2003, research partners in Australia, Austria, Belgium, Canada, Denmark, Germany, Hungary, Italy, Sweden and the UK, with associates and subcontractors in many other countries participated in this international project. Research institutes and partners participating in the EMERGENCE company case study research in the NMS were as follows:

- Hungarian team: Csaba Makó (Co-ordinator for the Central European region) Éva Bócz, Tímea Budai, Roland Keszi, Daniel Koval, Dániel Mester and Péter Tamási (Institute of Sociology, Hungarian Academy of Sciences, Budapest);

- Polish team: Marek Bednarski and Lucyma Machol (Institute of Labour and Social Affairs, Warsaw);
- Czech team: Jarka Koptikova and Martin Macha (Institute for Labour and Social Affairs, Prague).

Details on the project design and major steps are available on <http://www.emergence.nu>. Also see Huws & O'Regan (2001) and Huws (2004).

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