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## eWork in the New Member Countries (Does It Help to Open New Development Paths? Lessons from Various EU Projects)

### Abstract

The present analysis focuses on various dimensions of the distribution of eWork in selected New Member States (NMS) in comparison with EU (15) countries. The introduction outlines various cycles of the transformation process in the CEE region, and localizes e-economy in this process. As far as the methodology is concerned, the paper's approach is to provide an analysis on the distribution of eWork, as well as present the aspects of supply and demand from the viewpoint of the labor process. In this sense, the author interprets eWork not as a new tool for working facilitated or enabled by ICT but as an organizational innovation. Due to such an interpretation of eWork, the recommendations formulated both for policy makers and researchers call attention not only to the complexity of changes required for the successful implementation of eWork, but also to the often neglected social-organisational and cultural contexts of these changes. In this perspective, it is necessary to stress the importance of the production paradigms and their national variations. For example, more flexibility in manpower and skill use related to the post-Fordist work organization—assuming an adequate ICT level in the firms—may speed up the distribution of various forms of eWork. On the other hand, the dominance of the Fordist type work organization may slow down the speed of implementing eWork even in firms that are equipped with excellent quality ICT equipment. In stressing the organizational innovative character of eWork, it is necessary to make more efforts—both in

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the communities of practitioners and researchers—to better understand and overcome the social-cultural and economic barriers (e.g. industrial age management culture in the labor process) to the flexible use of manpower and knowledge. In this sense, it is necessary 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 labor process.

## I. Introduction – The Various Cycles of the Transformation Process

### II Cycles of “Destruction” and “Re-Construction” in the Post-Socialist Economies

The early 1990s were a period of “transformation” in the social sciences, which visibly enriched the literature with numerous volumes on the political, economic and social changes that took place in Central and Eastern Europe.<sup>1</sup> Over that decade, the theoretical concept of “*path-dependency*” helped social scientists to refute the “*institutional vacuum*” view that 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 social-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 democratic political institutions in post-socialist economies. Using this view, one could understand—among other things—the uneven development of the post-socialist firms and management. In this sense, one has to note that not only privatization and foreign direct investments (FDI) were the important drivers of economic development, but “social filters” (labor relation systems, educational and training institutions, regional development agencies, etc.) also played a significant role, as it was through them that the various social actors (owners, managers, 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 various speeds and paths of the transformation process in the countries of Central Europe. For example, at the end of 1990s, especially from 2001 on-

1 The intent of using the term “transformation” instead of “transition” is to refute the thesis of “instant-capitalism” in the post-socialist economies of the Central European region, as this view underestimates the importance of time for the social learning processes in creating market economy institutions in these countries.

2 “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” (B. Chavance (1995) “Hierarchical Forms and Co-ordination Problems in Socialist Systems,” *Institutional and Corporate Change*, Vol. 4, No. 1, p. 288).

wards, the incoming FDI started to decline in Hungary, similarly to Poland and the Czech Republic, whereas the foreign capital export from these countries began to increase, especially from Hungary. (See Appendix No. 1 and No. 2) In addition, the composition of FDI changed dramatically: manufacturing investment was replaced by services and trades in the share of FDI. 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 applied, the capital absorption capacity of the country may also have become saturated. The decline on both the demand and supply side is interpreted here as an end of a period of capital attraction. To revive the capital inflows will require the establishing and strengthening of new attraction features.”<sup>3</sup> The next section outlines some characteristics of the so-called creative-cycle of the transformation process, which may indicate new sources of economic and social development.

## 1.2. The “Creative” Cycle of the Transformation Process

In the first cycle of the transformation process—during 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 FDI-based economic growth in post-socialist New Member States (NMS). The new period is characterized by the delocalization of higher value-added production and services into the Central European regions, instead of the relatively simple manufacturing (e.g. assembly-line operations) and standardized service activities.<sup>4</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 the strategic functions and services of the multinational corporations (MNCs) instead of low value-added operations that still dominate the manufacturing and service landscape of these economies. To facilitate the shift from the “destructive-constructive” to the “creative” cycle of the transformation process, economic and social actors should change over from “adaptive learning,” based on incremental knowledge development and conditioned by the “path-dependency,” to the “reflexive,” based on radical innovations, which

3 Szanyi, M. (2003) An FDI-based Development Model for Hungary – New Challenges?, Budapest: *Institute for World Economics – Hungarian Academy of Sciences, Working Papers*, No. 141, December, p. 10.

4 Csaba Makó (2003), “Globalization and Organizational Innovation.” In: Cs. Makó, Ch. Warhurst, J. Gennard (eds.), *Emerging Human Resource Practices – Developments and Debates in the New Europe*, Budapest, Akadémiai Kiadó, pp. 143–156.

may open a new path of development. The absence of such a shift in the learning pattern of economic and social actors could lead to the well-known phenomenon of “lock-in situations” both in economic and social changes. Under the present circumstances of globalization and the rapid distribution of ICT in the New Member States that entered into the new cycle of the transformation process, “... it may be useful to focus more on the problems of path unlocking and path creation than on path dependency.”<sup>5</sup>

If one adopts the perspective of new development path creation, one has to emphasize the importance of attracting higher value-added production and services in the post-socialist economies. The position of the Central European countries in the “knowledge based” economy is surprisingly good.<sup>6</sup> In the New Member States, one may map significant asymmetries between the development level of information economy and society.<sup>7</sup> However, the e-gap is visible not only between the economy and the society, but within the economy, too. For example, one can detect a visible gap in the use of eWork between large firms and the SMEs. In this sense, the analysis calls attention—beside well-known factors such as the price of ICT equipment or income structures of popula-

5 G. Schienstock, T. Hamalainen (2001) *The Transformation of the Finnish Innovation System, A Network Approach*. Helsinki, Sitra Reports Series, no. 7, p. 94.

6 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) *OECD Science, Technology and Industrial Scoreboard (Towards a Knowledge-based Economy)*. Paris, OECD Publications, pp. 84 and 112.).

7 According to the results of a recent survey comparing the development of the information economy and society among New Member 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 equipment and services) Hungary, together with Malta and Estonia, belongs to the most developed countries. However, in the case of indicators describing the information society (e.g. number of PCs per households, internet access at home, etc.) Hungary belongs to the set of the less developed countries (cf. Gáspár, P. (2004) *Információs gazdaság és társadalom, Heti Világgazdaság*, július 21. p. 16). However, even in the case of information society, households have a heterogeneous positions. For example, the preliminary results of the “Regional-IST” project (2001–2004), comparing the distribution of ICT equipment in the regional dimension (Baden-Württemberg, Catalonia, Portugal, Piedmont, and Hungary) indicate the following patterns: only 34 percent of Hungarian households, compared with the 61 percent of households in Baden-Württemberg, have a PC, home Internet use is 14 percent versus 47 percent. The share of regular Internet users in Hungary is 20 percent, compared to the 30 percent in the other three regions. However, there are no differences in the share of e-shopping among the Internet users of the five regions surveyed. Similarly, the ratio of mobile phone penetration is extremely high (65.7 percent to 83.2 percent) in the regions investigated. (cf. *Regional – IST – Regional Indicators of E-Government and e-Business in Information Society Technologies – IST–2001–33199*, Institute of Economic Research (GKI), Budapest, 2004. July, p. 1–4).

tion, lack of content development, etc.—to the often undervalued influence of the organizational and cultural factors limiting the distribution and use of eWork in the economy. Adopting this approach, this paper interprets eWork as a form of organizational innovation and in this sense stresses the importance of the labor process and skill conversion analysis.

The next sections tries to identify the position of some of the NMS in the e-economy, making use of the demand side perspective in analyzing delocalization of generic business functions. Focusing on these dimensions of eWork, one may better understand not only the complexity of factors influencing the successful participation of the post-socialist economies in the creative cycle of the transformation process, but one may identify the necessary learning patterns of various economic and social actors, too.

Encouraging evidence from the EMERGENCE project—to be presented in the next section—outlines that these countries were attractive for the delocalization of generic business functions using ICT (in terms of demand). Then, the following section examines the roles of technological and social-cultural factors that are shaping the implementation of telework in the SME sector. In this sense, the paper describes a work organization in the NMS that reflects the organizational-cultural legacy of the industrial age as it is more or less service oriented.

## 2. eWork: The Attractiveness of the CE Region (Demand Side Perspective)

### 2.1. The Typology of e-Work and the Delocalization of Generic Business Functions<sup>8</sup>

In the EMERGENCE project, eWork 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 eWork, the following two distinctions were made, firstly the *legal distinction* between work carried out within the organization (i.e. by employees, usually covered by employment contracts) and outsourced work, normally carried out under a contract for

<sup>8</sup> The EMERGENCE project (Estimation and Mapping of Employment Relocation in a Global Economy in the New Communication Environment) was set up with funding from the EU Information Society Technology (IST) program to identify and measure the distribution of eWork. Various research tools were used (e.g. statistical analysis, 18-country employer survey, case studies, statistical modeling, etc.) to map the patterns of the new division of labor in the e-economy. Research partners in Australia, Austria, Belgium, Canada, Germany, Hungary, Italy, Sweden and the UK, with associates and subcontractors in many other countries participated in the international project between 2000 and 2003. Details on the project design and major steps are available at <http://>. Also see U. Huws, S. O'Reagan (2001), *eWork in Europe: The EMERGENCE 18-Country Employer's Survey*, Brighton: Institute for Employment Studies, Report 380., pp. 2–3.

the supply of services. This second dimension of *eWork* makes a distinction between work carried out by a group or collective of workers in shared “office” premises and work carried out individually and away (or in isolation) from “office” premises. Table 1 illustrates the typology of *eWork* or work delocalization using ICT.

**Table 1.** Typology of *eWork*

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

The employers’ survey—which covered 7,268 employers in 18 European countries, the 15 EU member states plus the Czech Republic, Hungary and Poland—and the company case studies (62 case studies were carried out at 54 locations) examined *eWork* through the delocalization of the following seven generic business functions:

1. Customer service, including information supply, counseling and advice;
2. Sales (telemarketing and mobile sales);
3. Data processing, typing, and other forms of data input;
4. Software development, maintenance, and support;
5. Accounting, debt collection, and other financial services;
6. Human resource management and training;
7. Design, editorial and other forms of creative or content-generating work, including research and development.

## 2.2. Demand for *eWork* in Europe: The Relatively Good Position of CE Countries <sup>9</sup>

Using the broad definition of *eWork* presented in the previous section, one can say that almost every second (49 percent) employer interviewed in the 18-country employers’ survey is already practicing some form of *eWork*. **Comparing national variations** in the distribution of *eWork*, one may identify the following two categories: Sweden, Finland, and the Netherlands—the advanced high-tech economies—belong to the first category,

<sup>9</sup> Huws, Reagan (2001) Op. cit.: 15–20.

with Central and Southern Europe a part of the second category. Countries belonging to the second category are characterized by a high level of outsourcing, which represents a 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 e-subcontracting. However, the distribution of eWork is higher in large firms than in small ones.

Comparing the locations involved in remote work and **the reasons for their choice**, the first ten top “destinations” for eWork were indicated by the employers (demand side) to be the favored suppliers of eServices.<sup>10</sup> Seventy-seven regions in total were evaluated by the employers, and the top ten regions are presented in Table 2.

**Table 2.** Top Ten “Destinations” for eWork (absolute and per capita)

Absolute	Per capita
<b>Poland (POL)</b>	Region Bruxelles (BE1)
<b>Czech Republic (CZE)</b>	Bremen (DE5)
London (UK1)	Noord-Nederland (NL1)
Baden-Württemberg (DE1)	<b>Czech Republic (CZE)</b>
Nordrhein-Westfalen (DEA)	<b>Poland (POL)</b>
Noreste (ES2)	Hamburg (DE6)
Comunidad de Madrid (ES3)	London (UK1)
Lombardy (IT2)	Berlin (DE3)
<b>Hungary (HUN)</b>	Luxembourg (LUX)
Bayern (DE2)	Sur (ES6)

Source: Huws – O’Reagan (2001) Op. cit., p. 52.

Comparing the two lists presented in Table 2, one can say that the Czech Republic and Poland in both absolute and relative terms, and Hungary in relative terms, are among the top ten most favored destinations for eWork.

Among the seven **generic business functions**, only the top ten most attractive regions for **software development and support** were selected. The following three categories of countries should be distinguished: Firstly, the three NMS—Poland, the Czech Republic and Hungary; secondly, capital regions and highly developed urban zones with

10 With respect to this, one has to call attention to the problem of the EU NUTS1 level regions, which was the basis for classifying locations. NUTS1 regions are large. In the case of the smaller countries (e.g. Denmark, Ireland, Luxembourg, Portugal) they constitute a whole country. In the case of the candidate countries, due to problems of the data compatibility, locations were also coded at the national level only, despite the relatively large size of Poland.

strong business sectors, like Bruxelles, London, Lombardy, Northern–Westphalia, and the Madrid Region; thirdly, 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, Northeastern Spain, Southern Spain and the Bremen region in Germany). Table 3 displays the top ten locations for the generic business functions:

**Table 3.** Top Ten Destinations for Software Development and Support (in absolute terms)

Poland (POL)
Czech Republic (CZE)
Noreste (ES2)
Nordrhein–Westfalia (DEA)
London (UKI)
Comunidad de Madrid (ES3)
Lombardy (IT2)
Hungary (HUN)
United States (unspecified) (USA)
Nord Est (IT3)

*Source:* EMERGENCE European Employer Survey, 2000, (IES/NOP). Weighted figures, establishments with > 50 employees in EU–15 plus 3 candidate countries. Huws – O’Reagan (2001) p. 62.

In relation to the **reasons for choice of location** for various types of business functions, one has to note that contrary to the publicly held view, “low cost or most competitive tender” comes only second after “technical expertise.” “Good reputation” and “reliability/quality/good attitude/creativity” occupy the third and the fourth positions. The evaluation of motifs for delocalization of generic business functions indicates the successful participation of business organizations in the adaptive learning process during the 1990s. However, if the adaptive learning process is not accompanied by reflexive learning that is also embodied in radical innovation, the NMS will not be able to enter into the “creative” cycle of transformation.

The picture as sketched above regarding the various characteristics of the distribution of *eWork* concerns medium–sized and large business organizations. Unfortunately, due to the substantial budget cuts off the original project proposal, the EMERGENCE project could not cover the important segment of micro and small firms, in spite of the



fact that these firms dominate the organizational morphology of the national economies surveyed in this project without exception. 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 organizations of various size categories in the emerging eEconomy. The next section briefly outlines the position of the SME sector in the use of eWork.

### 2.3. Size Matters More in the New Member Countries than in the EU (15)<sup>11</sup>

On the basis of the results of the analysis of the “bivariate” relationships between eWork and such characteristics of the firms as the number of employees, one 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 practiced in the business and financial service sector than in the public one.

**Table 4.** Distribution of eWork by Size of Firm (percent)

Size of firm	Region/country	Use of eWork		
		No	Yes	Total
50–200 employees				
	EU-15	58.3	41.7	100.0
	3 candidate 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 candidate 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) Op. cit., p. 16.

11 Makó, Cs. – Keszi, R. (2003) eWork in EU Candidate Countries, Brighton: *Institute for Employment Studies*, Report No. 396. p.52

Table 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 firms employing 50–200 (41.7 percent) and 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 one 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 of Europe.

### 3. An Attempt to Interpret Telework as a “Modular” Form of Organizational 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), Rhone-Alpes region (France), Central Transdanubian region (Hungary), Emilia Romagna (Italy) and Greater West London Wedge (United Kingdom) (Appendix 3). The international *eGap* team combined three types of research tools, involving quantitative (e.g. survey method), qualitative techniques (e.g. interviews), and desk study. The issues examined in the project were based on the following themes:

- 1) Preparation for implementation of telework;
- 2) Operational practices;
- 3) Enablers and inhibitors related to the introduction;
- 4) Social context of telework;
- 5) Output and impacts of telework.

Among the issues outlined, what is stressed is that the quality of the ICT used in the SME sector is important, but it does not directly influence implementation practices. The level of ICT infrastructure may change dramatically from one year to another. For instance, according to the recent results of the “Regional IST” project, the number of Hungarian households with ADSL Internet connection changed dramatically between 2002 and 2003; it increased from 0.8 (2002) to 21.1 percent (2003), which is a higher growth compared to that in Portugal and Piemont. Consider the next table:

Table 5. Share of Households with ADSL Internet Access (%)

Country	2002	2003
Baden Wurttemberg	6.8	n.d.
Catalonia	19	32.1
Hungary	0.8	21.2
Piedmont	6.7	15.0
Portugal	0.4	6.5

Source:— Regionális szintű ICT fejlettség, (Regional IST) Budapest: *Gazdasági Kutató Intézet*, Sajtóanyag, 2004. p. 3

Beside the quality of ICT infrastructure, the *eGAP* project aim was to briefly identify and assess the roles of various social–organizational factors influencing the implementation of telework in the SME sector. In operationalizing the social–organizational dimensions of telework, such indicators as participation in project–type work, patterns of supervision, responsibility of employees in work and production paradigm were used—constructed by combining the last two indicators. For example, the participation of SMEs in network type co–operation may facilitate the implementation of telework. However, this does not mean that the intensity of the networking of the firms *per se* or that the number of “weak links” characterizing the early cycle of networking is important, but participation in the “project–type” cooperation or the presence of the “strong links” have positive effects on the distribution of telework in the SME sector. For example, in the five regions surveyed in the *eGAP* project, Hungarian firms had the most extensive networking activities—two thirds of them cooperated with more than 10 companies, on the other hand project type work organization was almost non existent. In contract to Hungarian experience, project type work is deeply integrated in the everyday practice in the Finnish and British regions.

In analyzing empirical data collected from the survey of more than 1,700 small and medium size firms in the five regions investigated, they were classified according to the pattern of supervision (direct vs. indirect) and with respect to the autonomy of employees in work. The direct or closed supervision characterized the Italian (73 percent), Hungarian (72 percent) and the French (53 percent) SMEs on the one hand, while on the other hand, indirect managerial control were practiced in the form of “team–work” in the Finnish and British firms. Similarly, greater autonomy in work was identified in the firms operating in the Tampere and Greater West London Wedge regions in comparison to the other three regions (Emilia Romagna, Central Transdanubia, and Rhone–Alpes), where employees had rather limited autonomy in their work. Combining the dimension of “su-

pervision” and “responsibility in work,” one may construct the following types of production paradigm (models of work organizations), summarized in Table 6.

**Table 6.** Production Paradigm Used in the Analysis of the Distribution of Telework

Type of Supervision	Responsibility in Work	
	Limited	Extended
Direct/closed	Fordist-model	Transitional
Indirect (via teamwork)	Transitional	Flexible or post-Fordist

Source: Makó, Cs. – Melles, K. – Keszi, R.. (2004) Kis- és középvállalkozások és a távmunka – egy nemzetközi összehasonlítás perspektívájában, (SMEs and Telework : In An International Perspective) *EGap EU 5<sup>th</sup> Framework Project . IST – 2001 – 35179*, Budapest: Institute of Sociology – Hungarian Academy of Sciences, p. 33. (in Hungarian).

Using categories of productions paradigms, one can say that the highest rate of telework is typical in regions where the SMEs made use of the post-Fordist (or flexible) production paradigm or the transitional one. A low distribution rate of telework was found in the firms using Fordist type working arrangement. Comparing the five regions surveyed, one can say that the Fordist type work organization is dominant in the SMEs operating in the Emilia Romagna and the Central Transdanubian regions.

**Table 7.** Production Paradigm in the eGap Regions Surveyed

Regions	Share of firms using production paradigms as follows:		
	Fordist	Transitional	Post-Fordist (“Flexible”)
Emilia Romagna	65 %	25 %	10 %
Central Transdanubia*	65 %	24 %	11 %
Greater West London Wedge	34 %	31 %	35 %
Rhone-Alpes	43 %	28 %	29 %
Tampere	23 %	34 %	43 %

Source: Makó, Cs. – Melles, K. – Keszi, R. (2004) *Op. cit.*: 34.

\* In this sense, it is worth noting that according to the latest European Working Conditions Survey (2001), employees in the Candidate Countries (CC) have considerably less control over work and organization of tasks or over working time than in the EU (15) countries. On the other hand, support from colleagues is more readily available among CC countries than their EU (15) counterparts. Summary of Working Conditions in the Acceding and Candidate Countries, (2003) Dublin: *European Foundation for the Improvement of Living and Working Conditions*, [www.eurofound.eu.int](http://www.eurofound.eu.int).p4

The post-Fordist work organization is used to the highest extent by the SMEs in the Tampere region, which is followed—to a lesser extent—by firms operating in the Greater West London Wedge region. The table 7 identifies the distribution of production paradigms in SMEs by the five regions investigated in the eGap project.

As to the relation between the share of telework and the dominance of the production paradigm, one can say that the highest rate of telework was found in the SMEs practice of the Tampere and of the Greater West London Wedge regions, whereas the lowest rate in the firms characterized by the use of the Fordist production model in the Central Transdanubia and Emilia Romagna regions. Rhone-Alpes is located between the two groups of regions mentioned earlier. In our interpretation, **telework is not merely a new individual form of work based on the use of ICT, but it represents an organizational innovation**. It is necessary to provide a brief typology of organizational innovation reflecting the extent or the depth of the organizational changes to qualify this type of organizational innovation.<sup>12</sup> Among the various classification attempts, in order to interpret telework as an organizational innovation this paper adopts the typology of Schienstock (2004: 17–18) which makes a distinction between changes effecting core elements of an organization and changes effecting their relationships. The various types of organizational innovations are summarized in Table 8.

**Table 8.** Various Types of Organizational Innovations

Interrelationships between core components	Core components	
	Unchanged	Changed
Unchanged	<b>Incremental innovation</b> (e.g. job rotation, job enlargement)	<b>Modular innovation</b> (e.g. trans-functional design team, self-organizing working groups)
Changed	<b>Architectural innovation</b> (e.g. flat hierarchies, profit centers)	<b>Radical innovation</b> (e.g. virtual organization)

Source: Schienstock, G. (2004) Organizational Innovations: Some Reflections on the Concept, Tampere: *University of Tampere – Research Institute for Social Sciences – Work Research Center*, p. 18

12 Among the recent analyses on organizational innovations, the following mainstream approaches were distinguished: 1) organizational design approaches focused on the relations between structural characteristics and capacity of organization to innovate; 2) streams of organizational learning focused on the process of both individual and organizational knowledge creation; 3) an approach emphasizing the process of change/adaptation reflecting in the new organizational form. (cf. Lam, 2004). In adapting the third school of organizational innovation, the intention is to examine the typology of organizational innovation based on the depth of organizational changes elaborated by Schienstock. (2004).

The “incremental” organizational innovation neither modifies the core elements nor 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 organization without changing the patterns of relationships between the core elements. For instance, in the case of the trans-functional design or planning teams, members are recruited from different units of the firm and a new core element is created within the organization without changing the power patterns within the firm. In the case of the “architectural” organizational innovation—flat organization—knowledge management and the organization of working activities within the firm are organized in a new, decentralized way. Finally, “radical” innovation indicates visible changes both in the core elements and their relationships within the firm. Virtual organizations or “project based firms” (PBF) (Whitley, 2004) represent this type of organizational innovation. A good example of this type of innovation was illustrated by the so-called “Internet-based Brokerage Firm” case study in the EMERGENCE project. (Makó – Keszi, 2003: 35–38)

In our interpretation, telework belongs to the category of “modular” innovation that does not fundamentally alter the relations between the core elements of the organizations (e.g. power relations or patterns of employment between owner/manger and employees), but there are significant changes taking place within the core elements. For example, the successful implementation of telework—as noted earlier with respect to the relation between the production paradigm and the distribution of telework—requires a significant modification both in the form of supervision (e.g. replacing personal supervisory methods by non-direct forms of control over subordinates) and the re-organization of the task-structure of work, including revision of the existing forms of communication and knowledge management systems. These changes presuppose not only individual, but organizational learning, underlining the importance of the “social time” necessary for the successful implementation of telework. Stressing the importance of the time-dimension in this learning process, also worth mentioning is the necessary extra time needed to modify the production paradigm of the industrial age and to reshape the traditional patterns of social relations of teleworkers outside the sphere of work, too (e.g. changing divisions both in patterns of family and local community participation). The shift in the industrial age working culture—both in the case of the owners/managers and the future teleworkers—will be the expected outcome of this learning process.

#### 4. Concluding Remarks: Challenges for the Policy Makers and Researchers

The new path of development in the economies of the CE regions represents a shift from the FDI driven modernization of manufacturing to growth generated by the higher value added products and services. The new cycle of the transformation process should be based not only on the deeper integration of the international system of division of labor, but on the supply of higher value-added products and services. In this sense, worth mentioning are the findings of several international projects: first of all, the lessons from the EMERGENCE project (2000–2002) on the relatively favorable position of the three NMS—Poland, Czech Republic and Hungary—in the process of delocalization of generic business services (e.g. software development and maintenance, creative activities). However, to maintain this position in the future, it is necessary to replace the adaptive learning of the social and economic actors with the reflexive one.

The attractiveness of these economies is limited mainly to the sector of medium and large sized enterprises, in spite of the fact that the overwhelming majority of firms belong to the category of micro and small firms that have rather a weak position in the emerging knowledge economy in the CE region. As noted earlier, the “size category” matters more in the economies of the NMS in comparison to the EU (15). Similarly, the innovative activities in the micro, small and even in medium sized firms are significantly less important than in large firms. (In this respect, it is necessary to call attention to the generally “innovation-unfriendly economic environment” in the NMS, where the central and local governments rarely provide support with land and infrastructure for the creation of science parks. Moreover, innovation supporting risk capital activity is almost nonexistent and the share of R&D in the GDP is significantly lower in comparison with the EU (15) countries. For example, the share of R&D in the GDP in Hungary was only 0.92 percent in 2003, while the GDP per capita represented only 50 percent of the EU (15) average. In addition, even before the EU membership of the country, the R&D activities were charged by 25 percent VAT, etc. To get a real picture on the size of the recent government initiative (2004) to support the creation of “regional university knowledge centers,” the total annual budget of this government initiative is HUF 1.5 billion, while, the Richter Gedeon pharmaceutical firm spends HUF 7.5 billion per year on research and development activities.)

Important policy re-orientation is necessary in the national development plans to overcome the asymmetric position between large and small firms in the CE region. In this sense, one must be aware that changes are necessary not only in the support policy of the SMEs, but in other related factors, too. For example, the new stage of development requires not only a continuous supply, but a “critical mass” of flexible and healthy workforce equipped with the ICT and language skills. In addition, it would be necessary

to create not only “best practices” or the list of “bench marking” cases, but 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). Coming back to the issue of how to decrease the gap between the position of large versus SMEs in the e–economy or in the knowledge economy in general, it is necessary to call attention to some organizational and cultural constraints often neglected by the policy makers.

Experiences identifying both facilitators and inhibitors of such new forms of work as “telework” indicate the following: Social and economic actors concerned with the distribution of telework or other kind of new working methods often underestimate the need for changing the existing organizational and working culture. In other words, representatives of government and owners/managers in the SME sector do not reckon with the organizational learning process necessary for the successful implementation of telework. International projects carried out in the “five strong regions” in Europe—four EU countries and one NMS—called attention to the importance of production paradigms and the role of “project type work” in facilitating or inhibiting the implementation of new forms of work (e.g. telework). According to these results, the presence of the post–Fordist (flexible) production paradigm and the strong link–based networking in the case of project type work, speed up the distribution of telework. In the view of the policy makers, telework is a new and individual form of work enabled by the use of ICT. Accordingly, government supports are represented by the creation of a new legal environment and by the financial help of individual entrepreneurs (e.g. by offering subsidies to buy ICT equipment, organizing ICT training courses for the future teleworker, and giving wage subsidies for certain periods of time), but no visible efforts were made to help entrepreneurs cope with the “modular” form of organizational innovations related to the implementation of telework. More government efforts—at national and regional levels—would be necessary to stimulate the networking activities within the SME sector and between SMEs and large firms in the forms of “project type work.” The briefly presented new policy orientation needs new patterns of cooperation among business, educational–research communities, and the regional governments (Triple Helix) to identify the changing elements of the development opportunities and to help the better match between supply and demand of the necessary skills and knowledge. This type of partnership of social and economic actors is often referred to as the “strategic” or “value–added” partnership that is characterized not only by the continuous search of new paths of development but also 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, 2001: 92).



In addition to new policy implications, it is necessary to call attention to the challenges social scientists need to face when dealing with the various aspects of the new stage of development in the transformation economies in the NMSs. To better understand the various elements of flexibility in both manpower and knowledge use, it would be advisable to integrate the dimension of the “labor process” into the approach to a much greater extent in the future. In order for the task structure and the related skill hierarchy of the IT jobs to be better understood, it is necessary to focus on the process of knowledge creation, transfer, etc., using, for example, the well-known SECI-spiral (Nonaka, 1994). By identifying and characterizing the conversion of various forms of knowledge, one may better understand the IT skill hierarchy and realistically locate and improve the position of SMEs in such sectors as interactive media, software, business, and professional services. In this respect, it is necessary to mention the experience of the ICT professional profile tested in the interactive media sector (STILE Project), where one re-discovers—in the case of web-developing activities—the same patterns of entrepreneurship development paths as in old economy activity. A large number of micro firms display what is called the “garage mentality” and prefer the “low-road” version of development. The core aim of these entrepreneurs is to survive and keep employment—mainly in the hands of the family—in the context of the fast changing economic and technological environment. Firms that have the ambition to produce high-quality, high-value added services in the interactive media sector (these small firms represent the “high-road” of development) overcome the “garage mentality” mentioned above, and plan to become important national or even international players. However, their owners/managers lack the appropriate organizational and social skills to manage such project-based cooperation, which requires not only a combination of the different professional skills (e.g. artistic, IT, etc.) but also the development of the appropriate social mechanisms (e.g. social and organizational skill) to be able to regulate the transactions among various firms that participate in the given project. Due to the lack of empirical evidence on “project-based firm” activities in the CE regions, the small and medium sized firms in new economy sectors (e.g. interactive media) are copying internationally “available patterns”—mainly American—of managing such activities, which were created and used in a rather different social-economic and cultural context. Our knowledge is limited on the labor process of “project based firms.” To overcome this knowledge deficiency, one needs to focus future research activity on the variety of “project-based firms” producing single or various outputs and goals, characterized by fluidity or stability of knowledge use and development, heterogeneous motivation of participants in project type work (e.g. partner involvement based on short term—financial interests—versus long-term interest—trust—etc.) (Whitley, 2004). By identifying the patterns or typology of skill conversion and skill identities one may better understand the different roads of

developments and the different institutional supports consistent with these models of development. International comparative studies can help to better understand the social-cultural and economic embeddedness of SMEs and to identify the variety of “national business systems” favoring the “low” or “high road” of their development.

## APPENDIX

**Appendix 1.** Foreign Direct Capital Investment in Selected Economies of the CEE Region (in million Euros)

Country	2000	2001	2002	2003
Czech Republic	5 404	6 296	9 012	2 289
Hungary	7 998	4 391	3026	2182
Poland	10 334	6 372	4 371	3 756

Source: Csabai, K. (2004) Áramlástanai jegyzetek, *Heti Világgazdaság*, Július 31. p. 63.

**Appendix 2.** Foreign Direct Capital Export (Outward) Investment from Selected Economies of the CEE Region (in million Euros)

Country	2000	2001	2002	2003
Czech Republic	47	185	219	206
Hungary	664	399	292	1 408
Poland	18	97	228	324

Source: Csabai, K. (2004) *Op. cit.*: p. 63.

## Appendix 3

eGap is an EU-funded IST research project aimed at understanding the diffusion of telework within special social-cultural and organizational contexts in the SME sector. The sample distribution by regions and size is illustrated in the following tables:

**Characteristics of Firms Surveyed Based on Sample Regions**

Region	Number of firms	%
Emilia Romagna	500	29.2
Central Transdanubia	306	17.9
Greater West London Wedge	303	17.7

Region	Number of firms	%
Rhone – Alpes	300	17.4
Tampere	305	17.8
<b>Total</b>	<b>1 714</b>	<b>100</b>

Source: Makó, Cs. – Melles, K. – Keszi, R.. (2004) Kis- és középvállalkozások és a távmunka – egy nemzetközi összehasonlítás perspektívájában, *EGap EU 5<sup>th</sup> Framework Project. IST – 2001 – 35179*, Budapest: Institute of Sociology – Hungarian Academy of Sciences, p. 3.

#### Size Distribution of Firms by the Regions Surveyed (%)

Size of firms (number of persons employed)	Region					Total
	Emilia Romagna	Central Transdanubia	Tampere	Greater Western London Wedge	Rhone – Alpes	
Micro (< 10)	24.8	17.9	23	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	14	12.1	19.1	15.3	12.0
Large (250 <)	2.4	–	–	–	3.7	1.3
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: Makó – Melles – Keszi (2004) *Op. cit.*: 4.

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