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WORKPLACE INNOVATION: CONCEPTS, REGULATION AND INCREASING ROLE OF KNOWLEDGE MANAGEMENT (THEORETICAL CONSIDERATIONS AND EUROPEAN EXPERIENCES)

Munkahelyi innováció: koncepciók, szabályozók és a tudásmenedzsment szerepének felértékelődése
(Elméleti alapok és európai empirikus tapasztalatok)

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The paper addresses the challenges of a better scientific understanding of the complexity of innovation processes. In this relation the authors are stressing the need to adopt the so-called "holistic" innovation strategy integrated into the national innovation governance system in the innovation "front-runner" countries (i.e. Sweden, Finland, Denmark, etc.). The paper has two main parts. The first part presents the theoretical and methodological foundations of the innovation approaches and examines the following issues: macro- and micro (organisational) importance of innovations, innovation challenges in the public sector, comparison of variables measuring public and private sector innovations, notion and dimension of workplace innovations, hard and soft regulations of innovation, types and fast erosion of knowledge, underlining the growing role of knowledge management.

The second part of the paper examines the empirical experiences of workplace innovation in the EU-27 countries, using certain waves (2005 and 2010) of European Working Conditions Survey (EWCS) organised by the Eurofund (Dublin). Distinguishing four major types of work organisations (i.e. "discretionary learning organisation", "lean organisation", "Taylorean organisation" and "traditional/simple organisation") important cross-country differences were mapped. Comparing the period before and after the "Grand" financial crisis (2008–2009) the share of "discretionary learning organisation" declined, reflecting the strengthening trend of the short-term cost efficiency seeking strategy of the European companies, while other strategies based on knowledge-efficiency seeking have been overshadowed. Finally, the authors outline the need – in both public and private sector – for a knowledge management based on the Employee Driven Innovation (EDI) scheme in order to create high performance working systems (HPWS).

Keywords:
innovation views, public versus private sector, workplace innovation, types of work organisation, employee driven innovation, knowledge management

A tanulmány az innováció komplex jelenségével kapcsolatos tudományos megközelítések differenciált megértéséhez és értelmezéséhez kíván hozzájárulni. Ezzel összefüggésben – az innovációs teljesítmények terén élenjáró országok (például Svédország, Finnország, Dánia) példáira hivatkozva, a szerzők az úgynevezett holisztikus innovációs stratégia jelentőségére hívják fel a figyelmet. A tanulmány két fő részből áll. Az első rész, az innováció makro- és mikroszintű (szervezeti) jelentőségének bemutatását követően a köz- és magánszféra-innovációk sajátosságaival, a munkahelyi innovációk jellemzőivel és azok úgynevezett kemény és puha szabályozóival, valamint a tudásmenedzsment kiemelt szerepével foglalkozik a tudáselavulás kontextusában.

Az elemzés második része az Európai Unió 27 országában végzett Európai Munkafeltétel Felmérések (EWCS) 2005-ös és 2010-es empirikus tapasztalatainak feldolgozásával és értékelésével foglalkozik. A felmérések adatainak feldolgozása során a szerzők a munkaszervezetek következő – az innovációs és tanulás jelentősen eltérő képességét és igényét mérő – típusait azonosították: „diszkrecionális tanuló szervezet", „lapos szervezet", „taylori munkaszervezet", „hagyományos-egyszerű munkaszervezet". A 2008–2009-es nagy pénzügyi válságot és gazdasági visszaesést követően, az EU-27 országaiban a rövid távú hatékonyságot eredményező, úgynevezett költséghatékonysági stratégiák eredményeképpen a „diszkrecionális tanuló szervezetek" aránya csökkent. A jövőbeni innovációs teljesítmények javítására, ez a tanulmány a tudásmenedzsment fejlesztését és a munkavállalói részvételen (Employee Driven Innovation, EDI) alapuló úgynevezett kiemelkedő hatékonyságú munkavégzési rendszerek (High Performance Working System, HPWS) részarányának növelését javasolja.

Kulcsszavak:
innovációs megközelítések, közszféra versus magánszféra, munkahelyi innovációk, munkaszervezeti típusok, munkavállalói részvétel, tudásmenedzsment

1. INTRODUCTION

Innovation plays a key role in enhancing the competitiveness of the national economies and significantly contributes to creating sustainable growth. Innovation boosts employment and has a positive impact on performance (productivity) and quality of working life (QWL). On the one hand, the public sector as a regulator plays a vital role in creating the pre-conditions of innovation, and on the other hand, as a service provider and employer it also helps innovation activity in the non-public sector.

In this paper, the authors outline various dimensions of workplace innovation, forms of regulation, different types of knowledge and their interaction and the impact of their fast erosion.

The available empirical evidences collected from various waves of the European Working Conditions Survey (2005, 2010, 2015) indicate visible country differences in the distribution of innovation/learning friendly and not innovation/learning friendly jobs in the EU-27 countries. Between the country groups, the Nordic countries have "leading edge" position regarding innovation/learning friendly jobs – both before and after the recent crisis –, while the Mediterranean and post-socialist new member states have the "trailing edge" position regarding this type of job. The cross-country comparison indicates slight decline in the share of the innovation friendly and a slight increase of the not innovation friendly jobs following the recent financial crisis (2008). To boost the innovation activities in both private and public sector organisations it is necessary to renew the practice of knowledge management through the concept of "caring" and to pay more attention to the mobilisation of employees (i.e. Employees Driven Innovation).

2. THE IMPORTANCE OF INNOVATION: MACRO-ECONOMIC AND MICRO-ORGANISATIONAL IMPACTS

In the past decade a consensus seems to have been reached – both in the communities of researchers and practicioners – on the fact that technological and non-technological (e.g. new working practice) innovations have a decisive role in creating new growth paths that shape the long-term competitiveness of national economies.

The general impact of spreading different types of innovations (such as product and process innovation, marketing, organisational, etc.) is that *employment* has increased in the innovative firms in comparison to the non-innovative ones.[1] According to the findings of the most detailed and methodologically justified international research (of 67 countries) carried out by the research institute of the World Bank, the innovative companies also employ more unskilled labour force than the non-innovative ones.[2]

[1] Nielsen 2006.
[2] Dutz et al. 2012.

In addition, the impacts of innovations on *performance/productivity* cannot be neglected, either. A case in point is the intangible macro-level investments in workplace innovations that can influence macro level economic growth by 10%. According to the same American research on the micro organisational level, the workplace innovations can result in 15-30% performance premium.[3] According to the documents of the European Commission on stable economic growth, interventions in the organisation, human resource management and workplace innovations are important growth engines of development.[4]

Unfortunately, despite their beneficial impacts on organisations, *workplace innovations are not so widespread* in practice, especially in the Mediterranean and the Post-socialist countries in the EU. However, some Northern European countries can serve as exceptions. In Finland, for example, the so-called workplace development programmes (2004–2010) had a favourable impact on both productivity and the quality of working according to the majority of employees and managers.[5]

3. THE SIGNIFICANT INNOVATION PERFORMANCE OF THE PUBLIC SECTOR AND CHALLENGES FOR THE FUTURE

The public sector plays a central role as a regulator of economic activities and also as a service provider and employer. The significance of the latter one is indicated by the fact that more than one quarter of the employees in the EU member states work in this sector.

According to the experience of Innobarometer 2010 surveys the *innovation intensity of the sector is extremely high*: "…at least two in every three public administration organisations have introduced at least one service innovation […] the most important stimuli of innovations are new laws and regulations."[6]

The innovation reserves of the public sector are still significant and the wider use of information and communication technologies (ICT) can further encourage the innovation practice of the sector. For example, the significance of the ICT-based public procurement is also illustrated, among others, by the fact that "within the European Union public procurement accounts for 20 percent of the GDP of the European economy, i.e. 2.3 billion Euro."[7] Unfortunately, no significant progress has been made to make the public procurement systems more beneficial to innovation. To illustrate the great impact of the innovation in public procurement, in Sweden – which is a leading Eropean country in the innovation governance – "the public procurement accounts for 20% of GDP. If 10% of the 700 billion crowns used for public procurement will stimulate innovation in the future, this corresponds to 70 billion crowns (8 billion euros). The public annual research

[3] Appelbaum–Hoffer–Leana 2011.
[4] European Commission 2014a.
[5] Ramstad 2014.
[6] European Commission 2014b, 5.
[7] Edquist 2014, 15.

is 35 billion crowns (4 billion euros). Hence, the application of this new strategy has great potential to increase the resources that will be used to obtain products with a higher quality (innovations). This, in turn, could lead to better needs satisfaction and/or problem solving and lower costs in the long run."[8] However, we have to note that "innovation oriented public procurement" is still in its infancy with the exception of some Nordic countries.

4. THE CONCEPT OF INNOVATION: THE EXAMPLE OF THE PUBLIC AND PRIVATE SECTOR

From the end of World War II until the late 1970s, international surveys on research and development (R&D) primarily collected data on the private sector. After ten years of preparation the OECD initiated research in the Northern European countries not only on R&D but also innovation based activity. Findings were summarised in the First Oslo Manual.[9] The Manual serves as a theoretical and methodological guide for European employers' survey, entitled "Community Innovation Survey" (CIS) – which is coordinated professionally by Eurostat and carried out by the National Statistical Offices of the EU.

The first edition of the Oslo Manual (1992) dealt especially with measuring technological innovation (product + process) and was not aimed at identifying the innovation activity in the very rapidly growing service sector. The second edition of the Oslo Manual (1997) served as a guide in measuring the innovation activities of both sectors. It is only in the third edition (OSLO Manual, 2005) where non-technological innovations such as new marketing and/or new organisational methods and business practices appear. The complexity of the notion of innovation is well illustrated by the former Hungarian coordinator of CIS: "Innovation is introducing a new or significantly improved product (goods or services), process, new marketing method or organisational method, into business practice, workplace organisation or external contacts."[10]

Nonetheless, attention must be drawn to the fact that the comparative analysis of the similarities and differences of innovations typical of the organisations in the public sector and the private sector is a relatively new initiative. It is not by chance that the report to the EU Commission by the expert group on public sector innovation stressed the following: *"efforts to better understand and promote innovation in the public sector are hindered by an overall scarcity of quantitative evidence on innovation which points to the need for more and better data."*[11]

In the first attempt to reduce the syndrome of the so-called "knowledge deficiency" in this field, the findings of the *European Public Sector Innovation Scoreboard* (European

[8] Edquist 2016, 36.
[9] OSLO Manual 1992.
[10] Szunyogh 2010, 494.
[11] European Commission 2013, 5.

Commission 2014b) summarise the common and different features of innovations typical of the public and private sector in the table below (Table 1).

Table 1 • *Differences of innovation in the public and private sector (Source: European Commission 2014b, 9.)*

Private sector	Public sector
Product innovation	Service innovation
Process innovation	Process innovation
Organisational innovation	Organisational innovation
Marketing innovation	Communication innovation

The points where the innovation activity of the two sectors differ can be seen from Table 1. For example, the content of process and organisational innovations are identical in the two sectors, while the product innovation of the private sector is substituted for service innovation in the public sector and the marketing innovation of the public sector is changed for the communication innovation of the public sector, respectively. To sum up, the following notion for innovation is recommended by the authors of the study to use in the public sector: "new or significantly improved service, way of communication, process or organisational method".[12]

5. THE WORKPLACE INNOVATION: THE NOTION AND ITS DIMENSIONS

In addition to technological innovations, non-technological i.e. workplace innovations also have a great impact, especially in areas where the result of the activity is not a manufactured product, but providing a service. It is typical of most part of the public sector.

It is the abundance rather than lack of definitions which is typical of workplace innovation (WI). Of the great number of terms the one accepted by EUWIN (the European Network of Workplace Innovation) uses the sociological view among the various approaches listed and characterised below:[13]

Sociologists' perspective: What is WI as a practice? Objective: observation, analysis, exploration and comprehensive understanding.

Economists' perspective: How is WI linked to organisational performance? How is WI linked to competitiveness at meso-level (companies) and macro-level (countries)? Objective: understanding how workplace innovation helps companies adapt to their economic environment.

[12] European Commission 2014b, 9.
[13] European Commission 2014a, 14.

Statisticians' perspective: How can we measure WI? Objective: clear and simple definitions and indicators, relevance for innovation research.

Policy makers' perspective: How can we promote WI as a concept supporting main European policy goals such as increasing organisational performance, innovativeness and quality of working life? Objective: a concept appealing to different stakeholder groups, promotion of actions to organisations, evidence on politically desired outcomes (e.g. positive correlation between WI and product innovation, firm performance, etc.)

Practitioners' perspective: How can we implement WI in our organisations? Objective: hands-on implementation guidelines, good practice examples, professional support.

Finally, "Workplace Innovation is defined as a social process which shapes work organisation and working life, combining their human, organisational and technological dimensions… Workplace Innovation is not an end state but as a dynamic, reflexive process in which all stakeholders are continually engaged in reflecting on, learning about and transforming work processes and employment practices in response to both internal and external drivers."[14]

To illustrate the complex nature of workplace innovation it is worth making a distinction between its content, process and contextual dimensions. (For more detail see Table 2.)

Table 2 • *The three dimensions of workplace innovations*
(Source: Alasoini 2015, 31.)

Content (What?) →	The new system has such characteristics that make possible the improvement of the current situation
Process (How?) →	The new practice is the result of a process characterised by the broad participation of the members of the organisation, and if necessary, consumers can also be included as it is them who make broad use of knowledge and introductory solutions of planning.
Context (Why?) →	The new practice is the product of such context which is characterised by the extensive interaction of superiors, subordinates and customers when necessary, which helps to reach an agreement on the solutions planned.

The traditional concept of innovation is *content-based* while the implementation process of innovations has a special significance. For example the so-called employee-driven innovations (EDI) – as opposed to workplace innovations traditionally initiated by the management – "refer to emergent, spontaneous, informal und unplanned innovation processes which originate in the remaking of everyday work practice." The ordinary employee with their "in-depth, context-dependent knowledge that managers often do not possess is promoted by EDI as a key source of innovation. The statement that EDI focuses

[14] European Commission 2014a, 14.

on employees not assigned to this task [innovation] underlines the emphasis on informal innovation processes."[15]

In connection with workplace innovations, it is necessary to make a distinction between *design* and *process-oriented* knowledges. In the past decade a new approach, the so-called *dialogue-oriented* pattern emerged. It draws attention to the importance of superior–subordinate interaction in both the design and the process of innovation. Moreover, the important role of dialogue-oriented interaction patterns is interpreted not only on the level of the organisations but also on the country or groups of countries level (such as Northern countries, continental, Mediterranean or Anglo-Saxon countries). According to Ennals and Gustavsen (1999) the *"dialogue-centred"* approach is the most widespread in the North European countries, characterised with high innovation performance. "Speaking of the 'Nordic model' in the strongest sense of the term does not seem justified. Instead, we can speak of the *'Nordic mentality'*, a term that is not linked so closely to specific types of institutional arrangements e.g. motivation for workplace development in the Scandinavian or Nordic countries has laid in creation of structures that support the movement of a greater number of companies closer to the global productivity frontier through cooperation between management and personnel within companies, between various companies, and between companies and action oriented researchers."[16]

According to the two-decade long experience of the dialogue-based Finnish workplace development programmes these workplace innovation focused initiatives have a beneficial impact on both work productivity and the quality of working.[17]

6. THE "HARD" AND "SOFT" REGULATORS OF INNOVATION

Understanding the innovation processes typical of the private and public organisations requires the identification of different types of regulatory mechanisms practised by political decision-makers that shape the conditions for national, regional and local innovation strategies. Before presenting the various forms of regulation designed to shape workplace innovation, it is necessary to deal briefly with the differences between the notions of "regulation" and "regularisation".

In contrast to the Hungarian language, the French language distinguishes between the self-supporting regulation of different systems (*régulation)* and the intervention of state-owned or other institutions (*réglementation).* "In judging social and economic processes it is a common source of distortion that both the advocates of the self-regulation of the market and the bureaucratic-centralised management blur the borders between the terms 'regulation' and 'regularisation', the regulatory mechanisms of objective social processes and state regulation. They do not take into consideration that the regulatory activity of

[15] European Commission 2014a, 16.
[16] Alasoini 2015, 65.
[17] Ramstad 2014, 37. For more detail see Annex 1.

the state (regularisation) is just as socially conditioned as the emergence, operation or economic regulatory function of the markets. This misconception restricts the analysis to thinking in only the dichotomy of 'state or market / state and market' by excluding other social processes and regulatory mechanisms from both political and scientific ways of thinking that refer to both the operation of the market and the shaping governmental policies."[18]

In the following section, while enlisting the types of policies (regulators) that influence workplace innovations we use the term "regulation" in the sense of state and other institutional intervention (i.e. "regularisation") and not in the sociological sense of "regulation".

After reading the short introductory remarks it is easy to realise that various governmental interventions and „regulations" on their own are less capable of influencing the intensity of innovation, although their role is indispensable. The internationally well-known Finnish expert of workplace innovations, Alasoini stresses: "Governmental regulation mainly offers a means to reinforce desirable trends or to prevent undesirable trends… The justification for public intervention to develop working life is that companies (or other work organisations) are not sufficiently active and public authorities (in cooperation with other relevant stakeholders) have the ability to make a difference."[19]

The next table summarises the types of regulations (regulators) used by policy makers in promoting workplace innovation.

Table 3 • *Regulations promoting workplace innovation (regulators)*
(Source: Alasoini 2011, 29.)

<table>
<tr><td colspan="2">Hard/indirect regulation
legislation which focuses indirectly on workplace innovation through changes in some other policy area (e.g. product market and labour market)</td><td>Hard/direct regulation
legislation which focuses directly on workplace innovation (e.g. organisational and HRM practices)</td></tr>
<tr><td>Soft/indirect regulation general policy frameworks and recommendations</td><td>Soft/intermediate-stage regulation information on "best practices"; training and education for managers and employees</td><td>Soft/direct regulation
advisory and consulting services, benchmarking tools, and grants and subsidies to companies</td></tr>
<tr><td colspan="3">Deregulation</td></tr>
</table>

In general, we can differentiate between regulatory roles of the state and other non-market organisations (such as civil organisations) or, in the case of "deregulation", the lack of them.

[18] Makó–Simonyi 1992, 38.
[19] Alasoini 2015, 19.

In addition, differences must be made between the so-called hard (compulsory regulation by law) and soft (not compulsory, rather persuasive) regulators.

Both hard and soft regulators exist in direct and indirect forms. Instead of the direct hard regulators (such as laws and acts) the so-called variety of soft regulators (e.g. benchmarking, best practice, etc.) are more typical in workplace innovations.

The different political interference to encourage innovation may be due to the lack of motivation towards innovation in the case of the social partners concerned. *Soft indirect* regulators are satisfactory when it comes only to lack of information. It is more practical to combine *soft direct* regulators with the *indirect forms of hard regulators*[20] when it is about lack of motivation (lack of pressure from customers, competitors or any other stakeholders) or the risk that accompanies the introduction of innovation (long payback period of workplace innovation investments, changing environment, or the risk of the competitors' initiatives to steal or copy).

7. THE ACCELERATION OF THE KNOWLEDGE EROSION AND THE INCREASING ROLE OF KNOWLEDGE MANAGEMENT

The central function of knowledge (innovation) management is to develop the knowledges (competencies) of the members of the organisation and efficiently transform it into organisational (collective) ability or capability. Knowledge management plays an extraordinary role in creating and running the so-called "learning or innovative organisations" that forms the basis of long-term competitiveness. Knowledge management is not a brand new management concept, as the first international conference on knowledge management was held in 1993 and since then this aspect of management has formed a significant part of the literature of management and business administration.

The appearance of information and communication technology (ICT) has propelled the development of knowledge management by opening up opportunities. The authors are sharing the concept of Lundvall (2006), who advocated the use of the concept of "learning economy" instead of "knowledge-based" or "new economy". According to him one of the most important distinguishing feature of today's economy is not the more intensive use of knowledge, rather, the faster rate of its erosion, which increases the role of individual and organisational learning. "In a report from the Danish Ministry of Education, a German study is cited, maintaining that it only takes one year from the exam, before half of what a computer engineer has learnt has become absolute. The *halving time* of what has been learnt in the education system is longer for other specific professions but on average it is argued, it is about 8 years,"[21] and this means that "knowledge management, especially in

[20] Alasoini 2011, 29.
[21] Lundvall 2006, 4.

sectors with rapid technological change, needs to focus more on the process of learning than locating and allocating a given set of knowledge assets."[22]

There is a commonly shared view in the recently growing literature of digitisation and robotisation,[23] according to which the use of ICT can dramatically boost the opportunities of knowledge management in formalising and coding knowledge. From this perspective knowledge management is similar to information management. This approach can be proved to be a very convincing and effective strategy in a stable and slowly changing economic and social environment. However, in the past decades a radically new context was created for both public and private sector organisations by such mega trends as the globalising product, service and labour market, together with organisational and managerial innovations such as outsourcing business functions (de-localisation), digitisation etc. In such an environment the sources of long-term success for private (businesses) and public organisations are their learning and adaptation capabilities together with the usage of the so-called hidden or practical knowledge. It is about such knowledge that is typical of the given labour (organisational) process and coding or formalisinig it is nearly impossible or extremely expensive.[24] "The more information an economic player obtains the more intensive the demand is for such types of knowledge that can sort out and use information in an intelligent way. These forms of knowledge do not lend themselves easily to 'codification' into 'information'. This knowledge always has tacit elements. This is illustrated by the fact that the so-called *experience-based learning processes* play a more important role in the organisations than before."[25] The prerequisite for sustainable success is developing and combining different types of knowledge. To understand the related opportunities and limits it is worth to know the different *knowledge types* and their relations in transferring them (see the Nonaka "spiral" of knowledge formation) in order to guarantee the viability of an organisation.

8. TYPES OF KNOWLEDGE IN THE ORGANISATION: EPISTEMOLOGICAL AND ONTOLOGICAL PERSPECTIVES

The majority of authors who deal with knowledge management make a difference between various types of knowledge (e.g. coded vs. non-coded – tacit – knowledge) and in this regard they almost exclusively stress the seminal work of Mihály Polányi.[26]

To put the dimensions of knowledge into a form of a matrix, the management literature usually makes a difference between four types of knowledge.[27]

[22] Lundvall 2006, 1.
[23] Chui–Manyika–Miremadi 2016; Brynjolfsson–McAfee 2014.
[24] Autor 2014.
[25] Lundvall 2006, 3.
[26] Polányi 1962; Polányi 1966.
[27] Collins 1993; Blackler 1995; Nonaka–Takeuchi 1995; Lam 2000.

Table 4 • *Types of knowledge in the organisation: epistemological and ontological perspectives (Source: Lam 2000, 491.)*

		Ontological dimension	
		Individual	**Collective**
Epistemological dimension	**Explicit**	Embrained	Encoded
	Implicit (tacit)	Embodied	Embedded

The types of knowledge differentiated on the basis of the explicit/implicit (epistemological) and individual/collective (ontological) dimensions are the following:[28]

a) *"Embrained knowledge"* (*individual – explicit*): formalised, standardised and theoretical knowledge on high abstraction level that is relatively easy to absorb (individually) and transfer, typically within the framework of formal education (*learning-by-studying*). It can be applied without being tied to context, i.e. it can be used in various situations and imparted relatively easily.

b) *"Embodied knowledge"* (*individual – tacit*) is based on the practical experience of the individual so it can exclusively be imparted based on experience and personal experiences (*learning-by-doing*). Another consequence of personal knowledge is that this type is highly related to context, so transferring it is extremely difficult.

c) *"Encoded knowledge"* (*collective – explicit*): as denoted by the name it is encoded in signs and symbols, i.e. it marks knowledge types of manuals (guide books) of different written regulations and procedures. Its collective and easily accessible nature is of vital importance. Irrespective of the subject it is the type of knowledge that can be imparted by almost everyone.

d) *"Embedded knowledge"* (*collective – tacit*) is prevalent in organisational practices, routines and norms accepted by the members of the organisation. This type of knowledge is mostly embedded in special organisational practices and social-organisational structures. It can be transferred with some difficulties in informal channels and personal relationships where communication, coordination and organisational identity play a key role in the success of knowledge transfer. This type of knowledge is represented by the so-called "community of practices" with developed relations of trust or social capital.

[28] Lam 2000, 492–493.

9. LEARNING-INNOVATIVE ORGANISATIONS IN THE EUROPEAN ECONOMY: LESSONS FROM THE EUROPEAN WORKING CONDITION SURVEYS (EWCS)

9.1. Some methodological remarks on the EWCS

One of the the best known and most frequently quoted typology of work organisations was developed by a 2009 research.[29] The authors of the studies concerned characterised working practice by using *15 variables:*

- *teamwork* (autonomous teams are those where the members of the group decide on job sharing, while the non-autonomous working groups, where the members have no say in sharing);
- *task rotation*;
- *autonomy in work methods, autonomy in speed or rate of work*;
- factors that influence speed, such as machinery and equipment *(automatic constraints)*, standards *(standard-based constraints),* subordinates *(hierarchical constraints)* or colleagues *(horizontal constraints)*;
- *repetitiveness of tasks*;
- *monotony of tasks* perceived by the employees;
- method of quality control (precise *quality norms* vs. s*elf-assessment of quality of work* by the employers); *complexity of tasks*;
- new opportunities for employees at work: *learning new things at work*; *problem solving activities*.

The variables above examine *two important dimensions* of work: *learning opportunities* and the *degree of employee autonomy*.

Table 5 • *Variables used to identify types of work organisations by dimensions (Source: Illéssy 2015, 110.)*

Learning	Autonomy
learning new things	the speed of work depends on machinery, norms, superiors or colleagues
problem solving ability	selecting the methods and speed of work
complexity of working tasks	quality assurance is done by employees
task rotation	team work / autonomous working groups
repetitive, monotonous nature of tasks	work intensity

[29] Valeyre et al. 2009a; Valeyre et al. 2009b.

Based on the variables presented above there are four types of work organisations:

1. Discretionary learning organisation,
2. Lean organisation,
3. Taylorean organisation,
4. Traditional/simple work organisations.

The next matrix summarises these four types of work organisation by the learning (cognitive) opportunities and the degree of autonomy in work.[30]

Table 6 • *Characteristics of work organisation, learning opportunity and degree of autonomy at a workplace (Source: Illéssy 2015, 119.)*

		Autonomy	
		high	**low**
Learning opportunities	**high**	Learning organisation	Lean organisation
	low	–	Taylorean organisation
		–	Traditional organisation

The highest learning and innovation potentials are provided by the *learning* and *lean* organisational forms, while in the *traditional* one all values of the variables are below the average. The greatest difference between the learning and lean work organisations is the working conditions. Work intensity is much higher in *lean* organisations, tight deadlines are typical and work must be done in a high speed. In addition, the degree of autonomy is relatively limited. The *Taylorean* organisations have low learning potentials and most variables of the dimension of autonomy show low values as well, an average rate of teamwork and job rotation characterise them. The later mentioned changes result in softening the traditional Taylorean principles of mass production and mark a shift to more organisational flexibility in practice. This phenomenon is also termed as flexible or democratic Taylorism – or Toyota production system – and indicates a development in the directon of the *lean* production system.[31]

[30] For a detailed description of the single variables, dimensions and the characteristics of work organisation types see Valeyre et al. 2009a, 9–15.

[31] Makó 2005.

9.2. Visible country differences at the learning-innovative workplaces: lessons from the EWCS 2005 and 2010

The forthcoming section outlines the results of the European Working Conditions Survey (EWCS) 2010 and 2005, covering the periods before and after the recent financial crisis (2008).

In 2010 – following the crisis – there were four countries where the proportion of employees working in *discretionary learning organisations* (i.e. *learning organisations)* or innovative organisations exceeded 50%: the Netherlands, Denmark, Malta and Sweden. In contrast, their proportion did not reach 30% in Bulgaria, Romania, Ireland, Greece, the United Kingdom, the Czech Republic and Slovakia. Hungary is not far from the borderline (EU-28 average) either, as *the proportion of those working in learning organisations is 31.8% in Hungary, while the European average is 36.1%.* Among the other post-socialist countries, Poland just exceeded the EU-28 average, while Estonia, Slovenia and Latvia significantly exceeded that European average.

Lean organisations represent another organisational type with a limited learning potential. More than one third of the employees work for such organisations in Finland, the United Kingdom, Ireland, Estonia, Romania, Malta and Austria. In contrast, they are not so popular in the Netherlands and Greece, where the proportion of the employees working in these organisations does not reach 20%. *Hungary also lags slightly behind the European average: 26.2% vs. 28.7%.*

The innovation unfriendly *Taylorean organisation* offers low level of autonomy and the weakest learning potential for the employees. The highest share of employees belonging into this category of work organisation were found in the following countries: Hungary (32.1%), Greece (30.2%) and Bulgaria (28.8%). Compared with the European average (19.4%) the lowest share of this non-innovative work organisation characterises such countries as Denmark (7%), Finland (9%), Latvia (9.7%) and Estonia (10.8%). (See Table 7 for more details).

The fourth type of work organisations, the *simple or traditional* work organisations cover only 16% of the European employees. It is difficult to characterise by the previously used variables and they are underrepresented in our sample. Most of the working and managerial methods in these organisations are informal and not codified. We need more work in the future to better understand both enablers and inhibitors in this type of work organisation.

Table 7 • *Ratio of forms of work organisations in the EU-28, 2010 (%)*
(Source: European Commission 2015, 161.)

Country	Discretionary learning organisation	Lean organisation	Taylorean organisation	Traditional organisation
The Netherlands	59.30	16.80	11.80	12.10
Denmark	54.90	25.40	7.00	12.70
Malta	52.10	34.90	5.10	7.90
Sweden	51.90	27.40	14.10	6.70
Latvia	48.20	29.80	9.70	12.40
Belgium	44.70	27.60	13.70	14.00
Slovenia	43.20	29.70	12.50	14.60
Estonia	42.20	38.60	10.80	8.30
Germany	41.80	26.40	16.70	15.10
Austria	41.60	33.90	16.50	8.10
Finland	40.80	40.50	8.70	10.00
Luxemburg	39.40	30.30	17.80	12.50
Italy	38.30	24.00	17.50	20.20
Poland	37.80	24.40	19.00	18.80
EU28	**36.10**	**28.70**	**19.40**	**15.80**
Portugal	35.00	24.20	24.60	16.20
Lithuania	33.80	33.30	13.70	19.10
France	32.60	24.10	23.90	19.40
Hungary	31.80	26.20	32.10	10.00
Cyprus	31.00	23.40	21.80	23.80
Spain	30.90	30.90	21.50	16.60
Croatia	30.40	32.90	20.10	16.60
Slovakia	29.70	28.30	24.10	17.90
Czech Republic	27.60	30.10	20.70	21.50
United Kingdom	26.90	39.70	21.90	11.40
Greece	25.70	17.90	30.20	26.30
Ireland	25.30	39.10	24.90	10.70
Romania	23.50	38.00	21.20	17.30
Bulgaria	9.60	33.80	28.80	27.70

If we compare the periods before (2005) and after the financial crisis (2010) – Table 7 with Table 8 –, we can conclude that *in most countries the ratio of employees in the learning organisations decreased from 2005 to 2010.* Latvia, the Netherlands and Portugal belong to the rare exceptions. In Latvia there was an increase of more than 15%, in the Netherlands 9% and in Portugal 8%. A few countries can boast a growth of below 3%, including Finland, Denmark, Estonia, Lithuania, Poland and Romania. There was a stagnation in Austria, Spain and Slovenia (below 0.5%), and in the remaining 15 countries a slight, sometimes more drastic decrease took place. The strongest decline in the share of the most innovative learning work organisations was found in Ireland (nearly 20%), Luxembourg (15%), Bulgaria (14%), France (13%) and Hungary (11%). In contrast, in 2005 employees working in such learning-innovative workplaces in Hungary were above the EE-17 average: 41.4% vs. 38.4%.

Table 8 • *Forms of work organisations in the EU-27, 2005 (%)*
(Source: European Commission 2015. Compiled by the author)

Country	Discretionary learning organisation	Lean organisation	Taylorean organisation	Traditional organisation
Denmark	64.7	18.9	10.7	5.7
The Netherlands	59.6	20.5	8.3	11.6
Sweden	57	18.9	9.3	14.7
Austria	51.8	24.7	13.5	9.9
Germany	47.6	16.1	16.6	19.7
Slovenia	45	21.2	17.3	16.5
Belgium	44.9	18.4	17	19.7
Finland	44.1	30.2	15.5	10.1
Italy	41.7	17.8	20.1	20.4
Luxemburg	41.6	22.9	12.7	22.9
Hungary	41.4	13.3	23.3	22
Estonia	40.5	38.6	9.8	11
Cyprus	40.5	20.6	15.9	23
Czech Republic	39.3	26.2	19.9	14.6
Malta	38.2	40.9	7.3	13.6
France	38	31.4	16.8	13.8
Poland	36.7	25.4	14.2	23.8

Country	Discretionary learning organisation	Lean organisation	Taylorean organisation	Traditional organisation
Latvia	29.8	27.1	14.9	28.2
United Kingdom	25.9	40.9	19	14.2
Spain	25.6	28.6	28.3	17.5
Lithuania	24.2	19.6	19.6	36.6
Slovakia	24.2	31.2	28.1	16.5
Portugal	23.8	21.7	30.7	23.8
Greece	23.3	20.7	20.7	35.3
Bulgaria	23.2	25.6	22.3	28.9
Ireland	22.7	32.9	23	21.4
Romania	17.3	39.1	30.2	13.4

In Denmark, Finland and Sweden – which are the "leading edge" innovator countries in the EU – the share of employees working in the *learning organisation* visibly declined between 2005 and 2010. One of most inspired Nordic social scientists, Lundvall commented this decline likes this: "The fall is dramatic in some of the countries that have been leaders in terms of quality of work (especially Denmark and Finland)."[32]

France and the Czech Republic belong to the third type of trends where the decreasing ratio of employees in the *learning organisations* was accompanied by the popularity of *Taylorean* and *traditional* work organisations. In Hungary and Bulgaria much clearer tendencies can be noticed: the *Taylorean* and *lean organisations* increased at the expense of the *learning organisation*.

10. THE INCREASING ROLE OF CARING MANAGEMENT IN SUPPORTING INNOVATION: LESSONS FROM THE ORGANISATIONAL CASE STUDIES

In the previous section, the innovation ability of companies was defined by the cognitive factors of work (i.e. tasks complexity, learning new things, problem solving skills, etc.) and the level of employees' autonomy as well as by the extent to which the organisation can manage to persuade members to mobilise, renew and share their coded and tacit knowledge in building collective knowledge asset. Management plays a key role in creating the innovation ability of organisations. Proper organisational support and solutions are necessary first to identify the types of knowledge needs and then to design the work organisation to better fit these needs.

[32] Lundvall 2015, 5.

The enhancement of employees' autonomy and the support of employees driven innovation (EDI) calls for applying new management methods (e.g. *leadership with care*). It is often experienced that the introduction of new organisational or technological innovations fail as the middle managers fear for delegating their tasks (power) to rank-and-file employees. Such organisational innovations as the introduction of teleworking has changed the working practice of the entire organisation and generated new ways of working for employees but also required new managerial methods in monitoring and supervising subordinates. From a managerial point of view, one of these challenges is to replace the input based permament control for result oriented, output based supervision. Developing and sharing the various types of knowledge is facilitated but not yet fully automated. Without creating the proper social infrastructure, employees tend to hide their knowledge, which is the source of their bargaining position with their superiors. In this respect it is necessary to stress the need to implement innovation friendly *social infrastructure of work*, which "refers to standards, systems or established practices that help people successfully handle their work tasks or solve problems encountered at work […] *moral contract* contains a shared view of what kind of conduct is correct, sensible and desirable in the organisation and what kind of remuneration employees are entitled to in return for their work contribution and the employment of their skills and competence. Demarcation does not refer only to financial compensation but also to intangible rewards such as trust, respect, loyalty, safe employment relationships or employability."[33]

After presenting the quantitative empirical results (EWCS 2005, 2010) on the changes of forms of work organisation in the European context, this section outlines the growing role of the *caring management,* learned from several company case studies on the implementation of innovative working (organisational) practices.

The *EU Leonardo da Vinci Innovation Transfer Project*, entitled "Adaptykes" and launched in 2012, tried to understand both enablers and facilitators of the organisational innovations introduced in various sectors of the economy.[34]

The core aim of the project was to make cross-country comparisons on the interplay between human capital, structural (i.e. organisational) capital and innovation. For this purpose two Finnish, Hungarian and Romanian enterprises were selected each. The five companies had different activity and operational profiles. One of them was founded 70 years ago; another one produces for international markets, a cosmetics firm that employs nearly 600 people; another has eight employees, a company active in the local market with HR consultancy for some years; there is a service provider of IT solution development on the national market with 400 employees; and we have a medium-sized enterprise in vehicle manufacturing, producing automotive supplies. Finally, the last firm was a consulting firm in developing client „tailored" software in the financial sector.

[33] Alasoini 2013, 10.

[34] Makó–Illéssy–Csizmadia 2013.

Innovations introduced in these firms were also varied in nature: introduction of a new performance appraisal system; implementation of new organisational tools; speeds up in the identification of faults in production processes; or setting up autonomous working teams together with a project management to facilite the introduction of new products. After evaluating the experiences from the company case studies, the following three preconditions of the successful organisational/managerial innovations were identified:

1. Creating commitment,
2. Improving communication,
3. Paving the way for efficient knowledge management.

Being *committed* is of key importance on the part of both the management and the employees. It is essential that the management should be aware of the objectives of introducing innovations, timing and the necessary costs incurred. If the timing and the value of the necessary resources are not known or not properly planned, it can easily result in failure or sabotage during the implementation project. Another factor of the same importance is the inclusion of employees in the process of designing and introducing innovations: without their active cooperation, even planning can fail, or lead to rising costs of implementation or the lack of expected efficiency enhancement. From another perspective, if certain groups of employees resist the planned changes for some reasons, this can put the success of the entire project at risk. The typical instrument of persuading employees is enhancing their autonomy and the extent of their liabilities. Moreover, at most companies examined it was the transparent and frequent use of internal channels of communication that helped introduce innovations most effectively. "The commitment of both the employees and the top management was a necessary condition of the successful implementation of the workplace innovation. In most of the cases formal occasions were organised that ensured the opportunity of mutual dialogue between the different actors who had been involved in the changes."[35]

Changing *communication and corporate culture* are also indispensable conditions of the success of organisational changes. It is a general problem for most medium-sized and larger companies – as well as organisations in the public sector – that employees are most interested in hiding and not exploring/sharing problems. This working practice is often conditioned by the so-called "balming culture" in the organisation. In addition, it is often experienced that clashes of interests between functional units (e.g. procurement, sales, manufacturing/production etc.), employees and the middle or senior management frequently sweep the problems under the carpet. Open and transparent communication helps avoid generating conflicts between the professional groups. According to these case studies, one of the non-intended consequences of organisational innovations was the improving cooperation between more or less isolated working groups, which raised the quality standard of the products and services provided by the company. "The implementation process in most

[35] Makó–Illéssy–Csizmadia 2013, 39.

cases requires changes in the corporate culture, that has to be managed carefully. Open and intensive communication is one of the most important elements of this change."[36]

Beside the key roles of open communication and a supportive corporate culture, *knowledge management* facilitated turning the renewed individual knowledge into collective one. Improving employees' knowledge is not a negligible task, either. It is most frequently solved by creating internal knowledge centres and online knowledge banks as well as the transformation of the corporate training system based on employee participation. In addition to organise trainings relevant to the types of innovation, the most important managerial contribution was to develop cooperation between the different functional units, controlling and monitoring the processes and demolishing the so-called "bureaucratic silos" in the organisation. In certain cases, external experts – consulting agencies – were employed to have a more balanced view on the design and implementation of the planned innovation. "Successful changes require investments in the related basic skills of management, such as cross-functional managerial skills; process control and follow-up; skills required for efficient team-working and communication."[37]

The main lesson for the management to learn was that the successful innovation is basically influenced by accumulated shared experience and collective memory of the previous similar experiments and organisational knowledge. It is also worth taking into account the fact that the introduction of an innovation acts as a "special agent of change" in exploring and visualising the existing internal problems of the organisation that were not even realised before either by the management or employees. They can be the lack of shared corporate identity, internal conflicts and clashes of interest, tension between generations, problems arising from different cultural standards, convictions and beliefs, or insufficient employee knowledge and motivation. If the management succeeds in solving real, existing problems by the tools of innovation, the efficiency of running the organisation can be enhanced, which can be regarded as the indirect effect of innovation or a special "performance premium". In this relation it is necessary to stress the growing importance of the *concept of "caring"* in the organisation, due to the fragility of knowledge development and sharing in the organisation. "As knowledge creation is also a social process, sharing tacit knowledge involves individuals participating in the public justification, and precisely this process of justification makes knowledge creation a highly fragile process. The *value of care* in organisational relationships is a key condition that enables knowledge creation to happen."[38]

[36] Makó–Illéssy–Csizmadia 2013, 40.
[37] Makó–Illéssy–Csizmadia 2013, 40.
[38] Hasu–Lehtonen 2014, 12.

11. SUMMARY

In the past decade, theoretical and practical experts as well as the policy makers in the "leading edge" countries of innovation have reached a consensus on the adoption of the broad or holistic approach of innovation. The advocates of this innovation policy governance wish to pay more attention to non-technological innovations (e.g. organisational, communication, marketing, business practices etc.) and replace the linearity with holism. In addition, beside the private sector, public sector innovation (e.g. innovation oriented public procurement) is gaining growing importance in the national innovation policy in the recent year, especially in Sweden.[39]

According to the findings of a research carried out on the long-standing workplace development programme in Finland (2004–2010), both productivity and quality of working life (QWL) have improved. Moreover, since the turn of the millennium, in countries that are leaders in innovations – such as the Nordic country group – a variety of stakeholders (e.g. local governments, universities, business community) are developing partnership based on strategic cooperation (social capital) to broaden the knowledge base for innovation.[40]

The new approach completes the well-known Science-Technology-Innovation (STI) model and the one called High-Involvement-Innovatoin-Practice (HIIP)[41] or employee driven innovation (EDI) assigns new roles to all the members of the organisation. Both superiors and subordinates have to cope with radically different challenges concerning the well-known hierachical, top-down logic of innovation, in which a clear divide exists between the responsibility for design/planning and the execution of a task in the organisation. From this aspect, the national innovation strategy and support system implemented by the Finnish innovation agency (Tekes) and the Swedish National Innovation Council (NIC) can be regarded as best practice or benchmark for the European innovation policy makers.[42]

In contrast to public belief, the innovation activity of the public sector grows in intensity but there are still unexploited potentials. Their exploitation can be made easier by learning the basic theoretical foundations of innovation (e.g. definitions) and its regulation, in order to overcome the "knowledge deficiency" syndrome in public sector innovation, shown by both quantitative and qualitative evidences. "In order to overcome these barriers, Europe needs a new policy framework for its public sector, built on a pro-active and engaging narrative of institutional innovation […] Much can be done by the European institutions, the Member States and regional and local governments to leverage their own capacity to innovate and to drive concrete change processes."[43]

[39] Edquist 2016.
[40] Nielsen 2019.
[41] Ramstad 2014.
[42] Alasoini 2013; Edquist 2016.
[43] European Commission 2013, 5.

In this paper, we used simultaneously organisational learning and innovation and stressed the increasing role of knowledge (innovation) management due to the speed-up of knowledge erosion from the last decade of the 20th century. Knowledge management needs, among others, to identify, transfer and share the various types of knowledge – distinguished by its epistemological and ontological dimensions – in the organisation.

In this relation it is necessary to stress that "the generation of knowledge manifests itself as a process which, on the one hand creates product, service and process innovations, but at the same time also generates learning among participants […] innovation and organisational learning are, at best, the conscious mutually supportive results of the same process".[44]

The European comparative surveys on working conditions – carried out before and after the recent financial crisis (2008) – produced valuable empirical evidences on the distribution of the learning/innovation friendly and not learning/innovation friendly workplaces in the EU countries.

Comparing the periods before and after the financial crisis, we can say that *in most countries the ratio of employees in the learning organisations decreased from 2005 to 2010, which indicates the general "cost efficiency" drive in the European economy.* The strongest decline in the share of the innovation friendly (learning/innovative) work organisations was found in Ireland, Luxembourg, Bulgaria, France and Hungary. However, regarding Hungary, it is necessary to note that before the financial crisis, in 2005, the share of employees working in learning-innovative workplaces was above the EU-27 average.

In addition it is worth mentioning some quantitative evidences learned from the first pan-EU innovation survey in public sector.[45] According to its data, in the public sector fewer than 7% of the Hungarian employees take part in innovation development, while the European average reaches more than 22%, and in the majority of post-socialist countries the participation rate varies between 20% and 30%.[46] A more intense involvement of employees in innovation activities calls for mobilising not only formal types of knowledge but also its informal individual and collective versions. There is a need to develop cooperative and networking skills of employees, which cannot be carried out without rethinking and renewing knowledge management practice at various levels of public administration. The increasing importance of the *caring management* or *leadership with care* at the workplace level in the public sector "does not as such resemble any of the abstract public governance paradigms, namely Public Administration, New Public Management (NPM) or Network Governance […] many potential innovations occur by improvisation without direction of managers. The caring leadership pattern enables the emergence of efficiency, quality, wellbeing, and novelties, by providing the employees with control over their mutual relations and resources."[47]

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44 Alasoini 2013, 11.

45 European Public Sector Innovation Scoreboard – EPSIS, 2013.

46 Makó–Illéssy 2014.

47 Hasu–Lehtonen 2014, 23–24.

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ANNEX no. 1: Means for changes in high-involvement innovation practices (HIIP) before and after the implementation in two groups (t-test on dependent variables)

Group I. Simultaneous improvement of productivity and quality of working life						
	Managers before	**Managers after**	**Sig.**	**Employees before**	**Employees after**	**Sig.**
Decentralised decision making	**3.64**	**3.26**	p<0.001	**3.06**	**3.22**	p<0.05
Competence development	**2.42**	**2.71**	p<0.001	**2.29**	**2.42**	p<0.05
Supervisor support	**3.12**	**3.35**	p<0.001	2.84	2.88	p>0.10
Internal cooperation	**3.11**	**3.28**	p<0.001	**2.80**	**2.94**	p<0.10
External cooperation	**1.96**	**2.00**	p<0.10	**1.84**	**1.92**	p<0.10
Group II. No simultaneous improvement of productivity and quality of working life						
	Managers before	**Managers after**	**Sig.**	**Employees before**	**Employees after**	**Sig.**
Decentralised decision making	2.94	2.95	p=0.103	2.87	2.74	p>0.05
Competence development	2.31	2.63	p>0.05	2.06	2.10	p>0.05
Supervisor support	3.04	3.42	p>0.05	2.56	2.50	p>0.05
Internal cooperation	3.05	3.05	p>0.05	**2.67**	**2.35**	p<0.05
External cooperation	**1.81**	**2.07**	p<0.05	**1.63**	**1.76**	p<0.05

Legend: Productivity indice, range: 1–5; Quality of Working Life indice, range: 1.5–5.
(Source: Ramstad 2014, 37.)

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