UDC 339

About the Need of Institutionalisation of Organisational Behaviour for Overcoming the Innovation Blockade in Poland and Ukraine

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ABSTRACT. On the example of Poland, paradoxes supporting the innovation blockade and limits of pro-innovation organisational behaviours are indicated in the article. Removing them requires reinstitutionalisation in the direction of subjective approach to innovativeness. The presented diagnosis concerning Poland may be used for defining conclusions in the sphere of actions intended for elimination of restrictions regarding pro-innovation barriers of organisational behaviour also present in Ukraine.

KEY WORDS: Innovation, innovativeness, innovation blockade, institutions, reinstitutionalisation.

Introduction

In the practice of the European post-socialistic countries, in particular in Ukraine, but also in Poland there are issues related with modernisation barriers which render it impossible to eliminate the technological gap within a reasonable period of time[1],[2]. Its scale is illustrated by a distance at the level of technological development of individual countries, measured with a set of analytical indexes, including innovation, or indexes illustrating differences in productivity of production factors. The most frequently it is measured with a technological distance to the leader of rankings of competitiveness and innovativeness.

The existence of barriers of innovativeness is not only based on the factors inherited from centrally planned economy. Innovation distance is constantly present and it takes the form of a competence gap despite the fact that it is reduced by innovation transfer from

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[1] Bal-Woźniak T., "Innovativeness' instruments in the processes of convergence of the European Union countries' development levels," *Common European Free Market Zone: harmonization of the mega-regional contradictions,* by scientific ed. D.H.Lukianenko, V.I. Chuzhykov, Ministry of Education and Science of Ukraine, Kyiv National Economic University named after Vadym Hetman (Kyiv: Instytut suchasnoho pidruchnyka, 2007), p. 314-324.

[2] Bal-Woźniak T., "Mechanisms and instruments of development of the human capital and innovativeness," *Convergence of the economic models of Ukraine and Poland,* monograph, by scientific ed. D.H.Lukianenko, V.I. Chuzhykov, M.Vozniak (Kyiv: KNEU, 2010), p. 545-572.

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abroad through direct foreign investments and imitative innovations resulting from them. The process of construction of competitive market system and obligatory since 2004 participation in fulfilment of principles of Lisbon Strategy in the states which joined the EU, lasting nearly a quarter of the century, were not sufficient. It is also not based on external factors, although they have some impact.

Contradictions between a high level of knowledge resources recorded in the statistics of KAM (*Knowledge Assessment Methodology*) regarding Poland and Ukraine, and inability to translate it into technological and economic successes are clear symptoms of the innovation blockade. The issue of this paradox is the most frequently taken up in the context of ground-breaking innovations since the scale of imitative innovations of products and services as well as the pace in which they are spreading throughout the globe is impressive. On the other hand, ground-breaking innovations causing a new impulse for development are necessary for maintaining or regaining competitive advantage[1]. Among many hypotheses concerning reasons for the innovation deficit, the innovation blockade is also indicated as a long-term consequence of errors made in the method of organisation of research and invention activity[2]. They may have a specific character for a given state economy. A question for efficiency of standard policies, in particular concerning innovativeness, arises.

The innovation blockade is a product of a set of interconnected competence barriers, rendering it impossible to allocate appropriate resources to creation of new solutions and implementation of innovations.

The hypothesis on the existence of innovative blockade has a fundamental significance for modernisation processes. Not only are instruments of innovativeness and barriers related with their efficiency, delaying important but also preventing convergence of levels of development of individual countries or even economic growth. The latter cannot be treated by politicians as the goal in itself. Economic organisations engage in creating new values only when they are used for their autonomic purposes. They are interested in profit or increase of value of company's assets.

In case of individuals, creativity is integrally related with innovativeness. It becomes significant when it is related with fulfilment of function of goals of these entities specific for individual spheres of their existence (sphere of consumption,

[1] Christensen C.M., Raynor M.E., Innowacje. Napęd wzrostu (Warszawa: Wydawnictwo Studio EMKA, 2008), (The Innovator's Solution:Creating and Sustaining Successful Growth, Harvard Bussiness Press, 2003).

[2] GalarR., *Siodła innowacji. IT w biznesie i administracji*, «Compterworld», 4 marca (2002), p. 30-31, 33.

economy, society and politics, but also technology, nature and biology, mind and spirit). These spheres are related with institutional complexes in which persons operate. Institutions of family, education, religion, economy, law and politics[1] create space of human activity; therefore, they should constitute a coherent – pro-innovatively oriented system to allow elimination of the innovation blockade.

People are interested in improvement of environment in which they live (with innovations), eventually leading to an integrated development allowing harmonisation of their development objectives. Contradictions between objectives of business, politics and individuals as subjects of economic process give rise to problems with unlocking and utilising innovation potential and already existing institutional infrastructure of innovation system. For this reason, institutionalisation oriented towards innovativeness in the traditional subjective meaning is insufficient. The task of the state is to eliminate barriers of human activity oriented in the above way and create stimuli for triggering, consolidating and promoting natural human inclination to creativeness for integrated development. Elimination of the aforementioned contradictions requires a new institutionalisation of economic system oriented towards promoting innovative organisational behaviour.

Innovativeness of Polish economy after accessing the EU

In case of Poland, the innovation deficit has a wider scope and it concerns all its types. As regards non-technological innovations in Ukraine, it is even worse. As a result, in the field of modernity of economy and potential of development of new technologies both Ukraine, and Poland belong to the great latecomers. Long lists of reasons for innovation «inefficiency» of Poland are presented in national reports[2],[3] and international reports, whose analyses allow formulating a hypothesis of the innovation blockade.

European Innovation Scoreboard[4] commonly called in Poland European Innovativeness Card (and not innovation) was formulated as part of Lisbon Strategy for ensuring comparative evaluation of innovativeness in the EU member states. In the later years selected countries outside of the EU were included. However, Ukraine was

[1] Turner J.H., *The Institutional Order. Economy, Kinship, Religion, Polity, Law and Education in Evolutionary and Comparative Perspective* (New York: Addision-Wesley Educational Publishers, 1997).

[2] *Report on innovativeness, Raport o Innowacyjności Polskiej Gospodarki*, Eksperci Uczelni Vistula, (06.2011). http://madra-polska.pl/raport/Raport-o-innowacyjnosci-polskiej-gospodarki.pdf

[3] PARP [2010], Innowacyjność 2010, Warszawa: PARP.

[4] EIS [2006], [2008], [2010], European Innovation Scoreboard 2005. Comparative Analysis of Innovation Performance, UNU-MERIT, Brussels.

not among them. Report for 2010 for the first time was issued under the changed name *Innovation Union Scoreboard*[1], leaving methodology of formulating it without any modifications, but it was related with the strategy «Europe 2020» adopted in this year and one of its leading projects[2].

According to the recent reports, including reports from 2012[3] (see tab. 1, fig. 1) the one but last group – of moderate innovators was considerably expanded and in the result Poland was included in it.

Table 1. **Results of Grouping EU States Based on Intensity of Innovativeness Changes in 2007—2011 Measured with Level and SII Growth Rate**

Group	Growth rate SII	Groups of countries according to SII growth rate		
		Growth leaders	Moderate growers	Slow growers
Innovation leaders	1,0 %	Finland (FI)	Germany (DE)	Denmark (DK), Sweden (SE)
Innovation followers	2,4 %	Cyprus (CY), Estonia (EE), Slovenia (SI)	Austria (AT), Belgium (BE), France (FR), Netherlands (NL), Ireland (IE)	Luxembourg (LU), United Kingdom (UK)
Moderate innovators	2,5 %	Malta (MT), Portugal (PT)	Czech Republic (CZ), Poland (PL), Slovakia (SK), Hungary (HU), Italy (IT)	Greece (GR), Spain (ES)
Modest innovators	4,4 %	Bulgaria (BG)	Latvia (LV), Romania (RO)	Lithuania (LT)

Source: based on [IUS, 2012].

Shifts of level and pace of synthetic innovativeness index are an averaged view of expenditures and results in the field of activity of business entities. Although there is an impression that they most of all refer to original innovations, they in fact represent results of diffusion of innovation (e.g. high tech export) as well. For this reason, a better illustration of innovation capabilities of an economy are patent applications and index of public and private research publications per million of population. Indexes of these measures of

[1] IUS [2011], [2012], Innovation Union Scoreboard 2010, 2011. The Innovation Union's performance scoreboard for Research and Innovation, UNU-MERIT, Brussels.

[2] Innovation Union [2010], Europe 2020 Flagship Initiative Innovation Union, COM(2010) 546 final (Brussels, 6 October).

[3] IUS [2011], [2012], *Innovation Union Scoreboard 2010, 2011. The Innovation Union's performance scoreboard for Research and Innovation*, UNU-MERIT, Brussels.

innovativeness have very low level in Poland: 0.09 of mean of EU-27; 0.03 of the measure for Sweden as the EU leader in the field of innovativeness. It clearly proves that it is necessary to look for a different way to innovativeness of economy than the current one. External innovation transfer may change a lot but it will not bring Poland in the group of leaders of innovativeness.

From the ranking of achievements recorded in EIS/IUS reports for 2003-2011 it results that Poland still remains in the group of outsiders, holding 23rd or 24th position in 27 EU states (fig. 1).

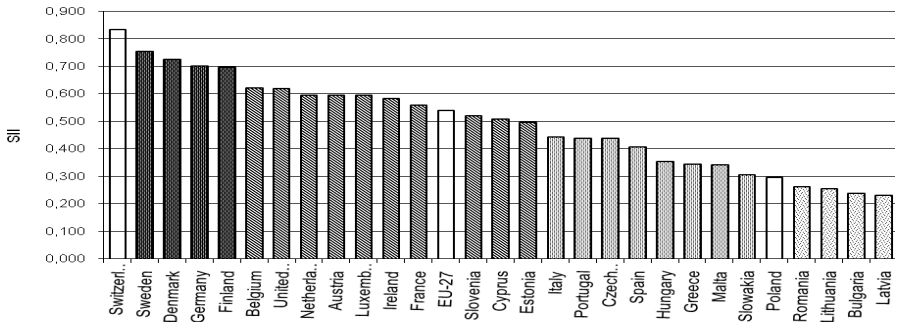

Fig.1. Innovation distance of Poland compared to UE-27

Source: based on [IUS, 2012].

Among 141 countries included in Global Competitiveness Index, Poland was on the 41st position and Ukraine as much as 41 places lower (82nd position) [1]. However, relative improvement of position of competitiveness of the Polish economy in the recent years (53rd position in 2008) is a result of effects of global financial crisis, and not innovativeness of economy. In sub-index C of this index, which concerns innovativeness (innovation and sophistication factors), Poland has just 57th position, while Spain, the most comparable with Poland developing EU country, has 23rd position. Sub-index C for Ukraine is, similarly to Poland, below global index but Ukraine is as low as on the 93rd place among 141 countries included in the rating[2].

In case of post-socialistic EU member states, to which Poland also belongs, economic integration created more competitive conditions. Common market posed new challenges in the sphere of competition and new factors stimulating entrepreneurs for looking for instruments which would allow meeting challenges posed by

[1] WEF, *The Global Competitiveness Report 2011—2012,* World Economic Forum (Geneva: 2011), p. 15.
[2] WEF, *The Global Competitiveness Report 2011—2012,* World Economic Forum (Geneva: 2011), p. 17.

foreign companies emerged. Through integration with the EU Poland has acquired an access to funds and institutional regulations of the procedures of Lisbon Strategy which are oriented towards development of intellectual capital. In the result, the conditions for achieving goals concerning technical and social infrastructure, development of human capital, and in this way an increase of innovativeness, improved. To some extent, it positively affected the level of SII (tab. 2).

In 2003—2011 the innovation distance measured with synthetic SII index decreased by 10% to the level of 54.9% mean for EU-27. However, it is necessary to consider that sources of this convergence[1] were related with diffusion of innovation and not with creation of technology. They have their limit and after reaching it further increase of innovation distance is possible only based on strategies of promotion of innovative organisational behaviour and getting to the stage of convergence concerning dynamics of original innovations.

Table 2. **SII level of Poland Compared to EU in 2003—2011**

Specification	2003	2004	2005	2006	2007	2008	2009	2010	2011
[EIS, 2008]									
EU-27*	0,45	0,45	0,45	0,45	0,45	X	X	X	x
Poland	0,21	0,21	0,22	0,23	0,24	X	x	X	x
[IUS, 2012]									
EU -27	x	x	x	x	0,517	0,526	0,526	0,533	0,539
Poland	x	x	x	x	0,284	0,293	0,292	0,304	0,296
Innovation distance: Poland / EU									
[EIS, 2008]	46,7 %	46,7 %	48,9 %	51,1 %	53,3 %	X	x	X	
[IUS, 2011]	X	x	x	x	54,9 %	55,7 %	55,5 %	57,0 %	54,9 %

Explanation: *calculations for EU-27 in the entire period: [see EIS, 2008, p. 58].
Source: based on [EIS, 2008], [IUS, 2012].

EIS/IUS statistics do not explicitly confirm positive impact of EU *acquis communautaire* and Lisbon Strategy on reduction of innovation distance of Poland to EU-27. There are doubts whether, as part of carrying out Lisbon agenda, solutions were developed in Poland which effectively increase innovativeness, since index of innovativeness exceeded the limit of 50% of the European mean, but

[1] On the subject of convergence based on innovations see [Fagerberg, Godinho, 2006, p. 514—542] and [Freeman, 2008, p. 186—204].

this state is not subject to significant changes despite a stream of supportive funding from the EU[1].

Admittedly, solutions based on state supportiveness which are supposed to assist and trigger innovativeness are related with the Lisbon Strategy. However, this strategy was not equipped with effective instruments harmonising expansion of ICT sector with social cohesion. Practice shows that its right objectives in this field were involved in procedures which channelled the actions in bureaucratic direction (which will be discussed later), targeted on management of money remaining for disposal and fulfilling quantitative indexes by increase of expenditures. Criteria of evaluation of innovativeness oriented in the aforementioned way decreed in EIS (IUS) do not affect the essence of the problem of effectiveness of innovative attempts and promotion of innovative competences[2]. It provokes a conclusion that if the state will not coordinate and support process of development of country's innovativeness then its independent progress, generated only with market forces, will still be slight.

Barriers of innovativeness in Poland in the light of statistics

As regards most partial indexes, the level recorded for Poland does not reach mean values for EU-27. Relations of these indexes with their counterparts for EU-27 may be regarded as symptoms of the innovation blockade, if their values are considerably lower (at least by 30%) than mean for EU-27 and they do not exhibit a growth tendency. In 2011 (fig. 2) it concerned all groups of indexes with the exception of investments in human capital, expenditures not on R&D, high-tech export and industrial designs. In such cases it is not possible to observe tendencies for convergence of the synthetic SII index to its average level.

In each of the three distinguished analytical fields: potential, activity of companies and innovation outcomes, there are individual measures in which Poland achieved the level which exceeds the average for EU-27. Paradoxically, the highest exceeding value in investment sphere refers to expenditures of the business sector which do not directly concern research and development works, while expenses, e.g. for fixed assets, do not lead to accumulation of the specific resource which is the ability to absorb new solutions due to knowledge acquired in previous experiences of learning.

[1] GUS Rocznik statystyczny Rzeczypospolitej Polskiej (Warszawa: GUS, 2011), p. 412.

[2] List of analyses of advantages and disadvantages of the instruments of government instruments of research and technology policy in regard to OECD countries, countries of middle-east Europe and Poland see. [Klincewicz, 2008].

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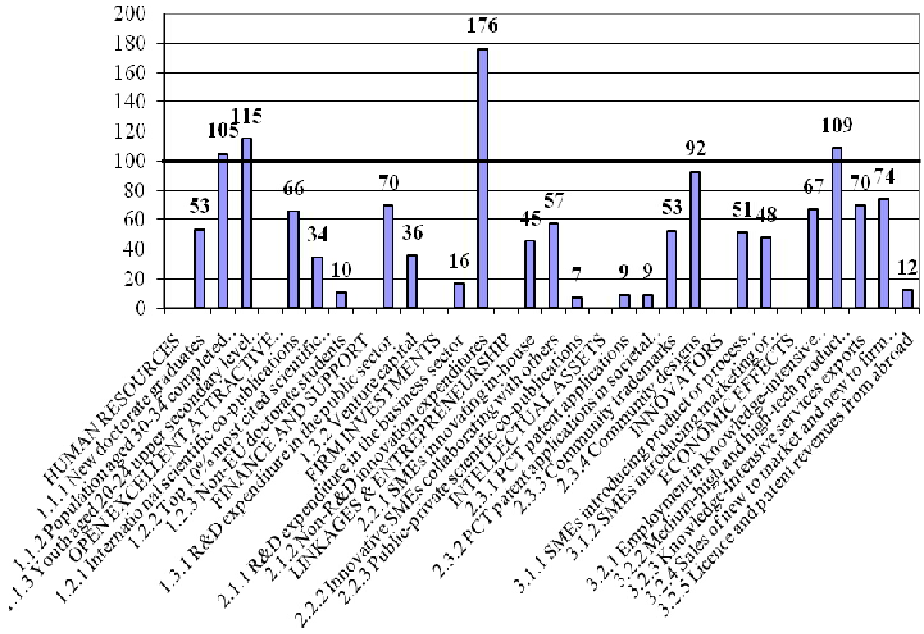


Fig.2. Values of SII components of Poland compared to EU-27 (%)

Source: based on data from annex A, see [IUS, 2012, p. 88–89].

It might seem that the relatively good image of human resources in the field *potential* and employment in knowledge-absorptive activity (in the field *innovation results*) brings effects in export of products of medium and high technology industry (109% of EU average). However, it is a result of diffusion of innovation, and not of designing them. Reasons for this are provided by indexes which present low quality of research systems and poor financial support of innovativeness.

It is not only the lack of open research systems measured with international research publications or cited research publications which is of importance. Apart from the international isolation and narrow scope of research and technology cooperation with foreign countries it is necessary to point the significance of barriers of cooperation between science and industry as well as conservative and unvaried model of conducted research. Weaknesses of research potential in Poland are related with a gap in expenditures for R&D compared to the leaders of innovativeness.

Table 3. **Innovative Potential of Poland Compared to the Countries of Europe**

Indicator		Poland	EU-27	Leaders EU	Leaders Non-EU
HUMAN RESOURCES					
1.1.1	New doctorate graduates (ISCED 6) per 1000 population aged 25–34	0,8	1,5	Sweden 3,1 Finland 2,9	Switzerland 3,1
1.1.2	Percentage population aged 30–34 having completed tertiary education	**35,3**	33,6	Ireland 49,9 Denmark 47,0	Norway 47,3
1.1.3	Percentage youth aged 20–24 having attained at least upper secondary level education	**91,1**	79,0	Slovakia 93,2 Czech Republic 91,9	Switzerland 82,3
OPEN, EXCELLENT AND ATTRACTIVE RESEARCH SYSTEMS					
1.2.1	International scientific co-publications per million population	198	301	Denmark 1533 Sweden 1485	Switzerland 1557 Iceland 1557
1.2.2	Scientific publications among the top 10 % most cited publications worldwide as % of total scientific publications of the country	3,68	10,73	Denmark 14,78 Netherlands 14,93	Switzerland 15,59
1.2.3	Non-EU doctorate students as a % of all doctorate students	1,98	19,19	United Kingdom 30,62 France 30,62	Switzerland 30,62
FINANCE AND SUPPORT					
1.3.1	R&D expenditure in the public sector as % of GDP	0,53	0,76	Finland 1,10	Iceland 1,10
1.3.2	Venture capital (early stage, expansion and replacement) as % of GDP	0,034	0,095	United Kingdom 0,231 Sweden 0,212	Switzerland 0,107

Source: a list based on: [IUS, 2012, tab. 3, p. 17; tab. A-F, s. 33–49].

According to the international methodology of Frascati [2002], GERD (*Gross Domestic Expenditure on Research & Development*) index is the measure of so-called internal expenditures on R & D activity in all units of the country conducting this activity. The value of GERD for Poland in 2010 expressed in current prices was 9.07 billion PLN[1] and in comparison with GDP the index did not exceed 0.7%.

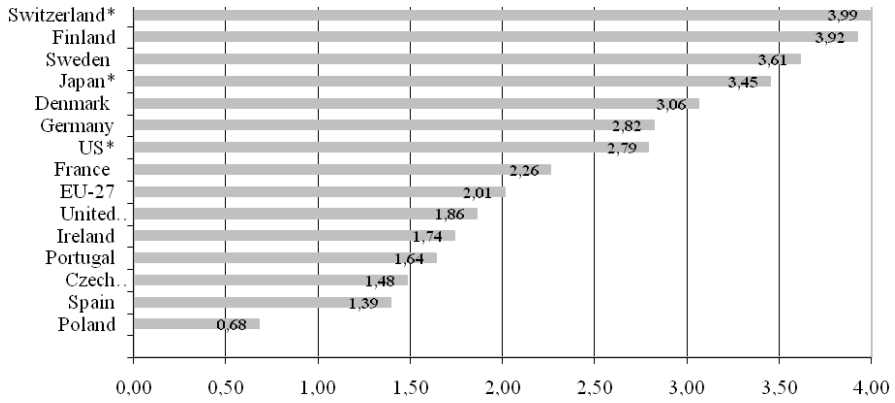
Based on the principles of Lisbon Strategy, expenditures for R&D in 2010 constituted 3% of GDP[2]. Many authors claim that expenses for research and development should amount at least to 2%

[1] NiT, Nauka i Technika w Polsce w 2009 r. Informacje i opracowania statystyczne (Warszawa: GUS, 2011), p. 81

[2] Kroll H., Zenker A. (oprac.), An analysis of the development of R&D expenditure, at regional level in the light of the 3% target, European Commission, Directorate-General for Research (Brussels: 2009).

of GDP, however, in the post-war period in Poland such level has never been reached. The actually incurred expenses for R&D in Poland since the EU accession, between 0.6 to 0.7% of GDP are only sufficient to cover necessary own costs of research units. Furthermore, there is the lack of incentive for the private sector to increase its involvement in the form of increase of the amount of funds for innovative operation.

Extremely poor funding of research and development sector (fig.3.) and gap in expenditures on these objectives occurring in relation with it, compared with other countries which lead in this sphere, is linked with faulty structure of these expenditures (tab. 4).



Description: * Data for 2008.

Fig.3. Share of GERD in GDP
in the chosen countries (%) in 2009

Source: Eurostat Statistics Database: Research and development expenditure, by sectors of performance % of GDP, http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tsc00001&plugin=1

A distinctive feature of the structure of R&D expenditures in Poland is the domination of the public sector which has not been changed by the decrease of share index below the limit of 60% which has been present since 2005. A high degree of dispersion is a relevant factor limiting effectiveness of expenditures. According to the Polish Central Statistical Office data, reduction of share of budget funds was made with the increase of involvement of business entities, but the European report does not illustrate this phenomenon. In 2010 the proportion of share of budget and company funds was under influence of a considerable raise of share of foreign funding, coming mainly from the European funds.

Table 4. **Structure of Gross Domestic Expenditures on Research and Development Activity by Source of Funds (Current Prices)**

Specification	1995	1999	2000	2001	2002	2003	2005	2008	2009	2010
Total	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
of which funds from:										
The state budget	60,2	58,5	63,4	64,8	61,9	62,7	57,7	56,1	56,1	56,2
Economic entities	24,1	30,6	24,5	24,3	23,0	23,5	26,0	26,6	27,1	24,4
Scientific units of the Polish Academy of Sciences and branch research-development units	11,6	7,5	7,7	6,2	6,3	5,9	7,0	6,1	4,3	4,7
International organisations and foreign institutions	1,7	1,7	1,8	2,4	4,8	4,6	5,7	5,4	5,5	11,8
Other units	2,4	1,7	2,6	2,3	4,0	3,3	3,6	5,8	7,0	2,9

Source: as in tab. 3.

Companies' expenditures on R&D translate to a degree of learning untypical skills: learning to learn, learning-by-doing, learning-by-interacting or learning-by-using. The level of this component is a slightly over 16% of the EU mean for Poland (tab. 4).

The low level of involvement of companies in funding of research and development projects is a result of encumbering research and development activity with high risk and uncertainty. What is more, impact of this factor is related with high costs. Not only micro, small and medium companies cannot afford them, but frequently other as well if they are not focused on cooperation, for example, as part of innovation clusters. A bit more than 6% of companies of SME sector is involved in cooperation for innovation, whereas the average for EU-27 is nearly double of this value, and in case of the United Kingdom — the EU leader, it greatly exceeds one fifth of the total number of small and medium companies.

Concerning poor development of *venture capital* companies and perceiving research works by the state as a source of expenses, investments of companies into R&D have small practical significance. This results in a scarce level of intellectual property assets (patent applications, trademarks, industrial designs).

Table 5. **Activity of Companies in Poland Compared to Other Countries of Europe**

Indicator —		Poland	EU-27	Leaders EU	Leaders Non-EU
FIRM INVESTMENTS					
2.1.1	R&D expenditure in the business sector as % of GDP	0,20	1,23	Finland, 2,83 Sweden 2,54	Switzerland 2,20
2.1.2	Non-R&D innovation expenditures as % of turnover	**1,25**	0,71	Estonia 1,77 Cyprus 1,73	Switzerland 1,16
LINKAGES & ENTREPRENEURSHIP					
2.2.1	SMEs innovating in-house as % of SMEs	13,76	30,31	Germany 46,03	Switzerland 28,2
2.2.2	Innovative SMEs collaborating with others as % of SMEs	6,4	11,16	United Kingdom 22,23	Iceland 14,05
2.2.3	Public-private co-publications per million population	2,5	36,2	Denmark 123,2 Sweden 117,3	Switzerland 126,2 Islandia 126,2
INTELLECTUAL ASSETS					
2.3.1	PCT patents applications per billion GDP (in PPS€)	0,34	3,78	Sweden 9,03 Finland 9,03	Switzerland 8,18
2.3.2	PCT patent applications in societal challenges per billion GDP (in PPS€) (climate change mitigation; health)	0,06	0,64	Denmark 1,80 Sweden 1,80	Szwajcaria 1,80
2.3.3	Community trademarks per billion GDP (in PPS€)	2,95	5,59	Luxembourg 12,41 Malta 12,41 Cyprus 12,41	Switzerland 11,46
2.3.4	Community designs per billion GDP (in PPS€)	4,40	4,77	Austria 8,45	Switzerland 7,81

Source: as in tab. 3.

It is also necessary to consider the limited number of SME which are technologically advanced and proportionally small innovation activity of small companies compared to the largest entities (tab. 6, 7) and lower, in particular in the industry processing, investment activity of the private sector than the public one.

Table 6. **Innovative Enterprises in Industry and in the Service Sector by Type of Introduced Innovations and Size Classes during 2008—2010**

Enterprises by size classes		Enterprises, which introduced innovation in % of total enterprises during 2008—2010		
Specification	Structure 2010 in percent	new or significantly improved products and processes	organisational innovations	marketing innovations
Industrial enterprises — total	100,0	x	x	x
10—49 employees	70,9	9,6	9,0	11,1
50—249 employees	23,9	30,2	18,1	16,4
250—499 employees	3,2	52,5	37,4	28,2
more than 499 employees	2,0	69,1	53,6	37,1
Enterprises in the service sector — total	100,0	x	x	x
10—49 employees	80,3	9,6	12,6	13,6
50—249 employees	16,8	21,7	22,6	20,5
250—499 employees	1,7	40,5	36,2	29,0
more than 499 employees	1,2	60,0	50,6	49,4

Source: based on [GUS, 2012, p. 19—50].

International benchmarks indicate that it does not have to be the case (tab. 7). Therefore, it is necessary to look for new institutional solutions allowing for wider involvement of SME sector in building of innovative economy. It has special significance for countries with fragmented subjective structure of economy and lack of large corporations with own capabilities of supporting innovative processes. For the above reason breaking innovative lock-up is related, especially in post-socialistic countries, with innovative activity of SME.

Relatively poor innovative activity of the private sector of industry processing is a distinctive feature of poorly developed countries and issues related with competitiveness of economy. In case of Poland it is due to the lack of long-term strategy in the field of foreign capital and insufficiently controlled privatisation. As a result of errors of strategic management of transformation and privatisation, a comparative evaluation of quality and innovativeness of the Polish and foreign production was not carried out.

Bankruptcies, sales, liquidation by foreign investors of companies' research and development units and even entire companies whose production did not differ in terms of quality and modernity from the foreign one and flow of BIZ not directed on export production but on the sphere of banking, trade or distinguished by the highest productivity of production factors of companies caused the fall of the national production of high technology and substituting it with import.

Table 7. **Innovation Results of Poland Compared to Other Countries of Europe**

Indicator		Poland	EU-27	Leaders EU	Leaders Non-EU
INNOVATORS					
3.1.1	SMEs introducing product or process innovations as % of SMEs	17,55	34,18	Germany 53,61 Portugal 47,73	Switzerland 54,37
3.1.2	SMEs introducing marketing or organisational innovations as % of SMEs	18,65	39,09	Germany 62,63 Luxembourg 53,02	Norway 30,80
ECONOMIC EFFECTS					
3.2.1	Employment in knowledge-intensive activities (manufacturing and services) as % of total employment	9,10	13,50	Luxembourg 19,90	Switzerland 19,90
3.2.2	Medium and high-tech product exports as % total product exports	**52,39**	48,23	Malta 71,35 Hungary 68,03	Switzerland 63,62
3.2.3	Knowledge-intensive services exports as % total service exports	33,05	48,13	Luxembourg 70,53 Ireland 70,53	Norway 53,96 Iceland 53,00
3.2.4	Sales of new to market and new to firm innovations as % of turnover	9,84	13,26	Greece 19,23 Germany 17,38	Switzerland 19,23
3.2.5	License and patent revenues from abroad as % of GDP	0,06	0,51	Netherlands 1,72	Switzerland 1,72

Source: as in tab. 3.

Large budget restrictions which in the next years the country will face and inclination of politics to use neo-liberal theory for justification of ineffectiveness of government in supporting development of R&D sector do not hold promise of creating financial stimuli for modernisation of the public research and development potential and elimination of deficiencies in education in order to shape innovative organisational behaviour.

Barriers of pro-innovative organisational behaviour as grounds for institutional shift

The modern «world of organisations» drives for looking for sources allowing to overcome states of «inability» in organisational behaviour. Organisational behaviour covers various forms of activity taken by people in relation with performed roles and held positions in organisations in which they operate. Simultaneousness of occurrence of these roles and functions obliges for seeking for integrated system of organisational behaviour management. The degree of turbulences of close and distant surrounding of various organisations, in particular economic ones, complicates the management process. For the effective adaptation of organisations to increased turbulences and improvement of change management efficiency, subjective approach to innovativeness and instrumental influence in the moment of occurrence of innovative situations may be insufficient. Company should have pro-innovatively oriented personnel, ready to engage in a change and provide response to new challenges resulting from increased competition. For this purpose a new institutionalisation is required, giving organisational behaviour an innovative character and promoting pro-innovative organisational behaviour.

Individual scope of organisational behaviour expressed through human personality, his or her predispositions, skills, aspirations, attitudes and emotions is corrected as part of group behaviour coincident with natural human instinct of cooperation[1],[2]. These processes remain under the influence of institutions-rules making up a specific organisational culture, favourable or unfavourable for innovations[3]. In relation with communication processes, all this created institutional space of choice and inter-organisational cooperation based on the capital of trust which is necessary also for rational inter-organisational relations.

Fixed states of inability, frequently occurring in the form of syndrome of learned helplessness, exclude pro-innovation organisational behaviour which is expressed by the attitude «it cannot be changed» or «it cannot be done». The observations that «many government and economic organisations make an impression as if they got out of control striving to achieve own goals at the expense of society» are still topical.

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[1] Guirdham M., *Interactive Behaviour at Work*, 3. ed. (Edinburgh Gate–Harlow: Pearson Education, 2002).

[2] Robbins S.P., Judge T.A., Essentials of Organizational Behavior, 10. ed. (Pearson Education, 2010).

[3] Trompenaars F., *Kultura innowacji* (Warszawa: Wolters Kluwer Polska, 2012).

In this type of mentality, distinctive for post-communist society, too frequently important barriers are omitted which in their specific context for a given country makes up a syndrome of the innovation blockade. A new modernisation mentality arises from it which concentrates on copying patters based on imitation consisting of «copying of attributes of the modern societies of abundance». A question is posed whether the imitation attitude does not threaten strengthening the development distance, although, it should be added, on the higher level of the average consumption. Removing the innovation blockade is linked with popularisation of creative mentality. It is not easy in the world of (1) hyper-consumerism, (2) standards and procedures imposed by international organisations (EU, WTO, IMF) or a state, (3) confusing means with goals, (4) driving cooperation by competition, (5) supplanting self-responsibility by race for independent benefits, (6) driving subjectivity by negative freedom[1].

1. Modern capitalism is marked with popularisation of standards of hyper-consumerism, that is, consumption of wealth on credit[2]. Hyper-consumerism is seemingly conducive to innovativeness. However, it is related with infantilisation of consumption and is characterised not with creativity, but with popularisation of herd behaviour which results in waste of resources and threatens balanced development. It is most of all fostering transfers of innovations from rich countries, driving local creativity; it is favourable for business interests, mainly of big corporations.

Post-communist society does not have social capital allowing general cooperation for innovation. Systems responsible for this type of competences (formalised education, family, media, religion, state legislative and executive power, business) are oriented competitively and claim-based, to own profits. The rule of support regarding innovation competences has a surface character, and its application has only slight practical meaning. It does not entail progress but modernisation which does not have any reference to broadly understood purpose. Axiologically, empty modernisation is an instrument of legitimisation of an access to free financial support from the outside. Modernisation for social and economic integrity cannot be realised in institutional system soaked in interests of bureaucracy, corporations, mediocracy and many other particularisms.

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[1] It is freedom from obligation from authorities, tax encumbrances, interferences of authorities in private life which is referred to by supporters of neo-liberal minimal state exercising politics according to rules of Washington consensus and development through globalisation [Kołodko, 1999, p. 119—140].

[2] Ehrenfeld J.R., *Sustainability by Design: A Subversive Strategy for Transforming our Consumer Culture* (Yale: Yale University Press, 2008).

2. Institutionalisation of innovativeness by standardisation and procedures (in Poland mainly through the EU institutions) is an imitative modernisation. It has bureaucratic origin; therefore, it is not favourable for original innovations. It is entangled in reduction of variety, natural environment and creativity. It is related with popularisation of bureaucratic procedures which may deform interpretation of information, increase transaction costs, and they cause delays of modernisation decisions. Transferred in the sphere of consumption, it supports proliferation of institutions of protective state which drives responsible behaviour and is favourable for syndrome of learned helplessness in the result of transfer of income from more active, resourceful or more effectively managing their creative potential to entities with appropriate tender power in negotiation and consulting procedures.

Bureaucracy does not accept market failures as an effect of learning profitable in long-term perspective. Bureaucratic procedure system distinctive for post-socialistic culture heritage, and also procedures related with coordination with Lisbon Strategy block flexibility of operation. For clerical world regulating innovative actions is easier and more certain than stimulating it. First and foremost, it is related with establishing barriers in the form of obligations and orders which limit creativity and can be easily multiplied if innovativeness is top-down controlled as in case of Lisbon Strategy.

In the world based on procedures information and telecommunication and network innovations do not bring individual and social benefits due to a tendency to use them for radical elaboration and expansion of procedures. The policy of easy access to free sources of funding from state budget or the EU funds orients companies not on innovativeness, but on looking for access to undeserved benefits.

In the result, flaws of procedural approach related with ignoring the factor of time and costs, and emphasis on modification of ineffective procedures with the increase of involvement in decision-making process of persons with moderate qualifications are displayed more distinctly than ever before.

In the turbulent surrounding, distinctive for times of global liberalisation and a new type of competition based on looking for synergic effects of broadly understood innovation, flexibility is a specially desired good. In creative industry it is not possible to wait for a bureaucratic body to call for tenders or a tender is resolved due to its nature prone to pursuit for independent profits. Legalism and availability is consolidated by centrally planned economy with landscape of clerical culture which even contrary to common mind

inclines to keeping to letter of the law, harming companies, creativity and innovative activity.

3. The paradox of confusing means with goals is particularly typical for control of innovation processes – top-down, with strategies formulated for the purpose of central strategic coordination. Each bureaucratic structure is prone to use of measurable indexes of innovativeness concerning expenditures, and results. Instruments [EIS/IUS] with which innovations, but not innovativeness, are measured in the EU states, constitute special example of the above. The first ones are the product of the degree of popularisation of innovative behaviour on all levels of human operation, in work environment and in private life.

A common problem is inability to evaluate effects of programmes by public institutions and using subsidies as equivalents of awards for current achievements of business entities, and not mechanisms stimulating innovativeness and reducing imperfections of the market in this field[1],[2].

In the case of Poland, the paradox of confusing means with goals manifests through perceiving operation of R & D sphere as a source of costs, and not of potential benefits and income. A conservative and unvaried model of conducting research is usually attractive for bureaucratic structures.

4. Authors of the Polish double shock: transformational – stabilisation and of liberalisation [Woźniak, 2009, chapt. 3], fascinated with neo-liberal principles of global capitalism, chose competition forgetting about the benefits of creating climate of trust which enables cooperation. In excessive glorifying of competitive advantages politicians of post-socialistic countries were not alone since appreciation by economic sciences of social capital and cultural factors in processes of modernisation took place only *ex post* – after negative consequences of standard programmes of economy modernisation recommended by International Monetary Fund and World Bank. Distancing from these programmes by politicians of Ukraine and delaying transformation processes did not also protect from the fall of social capital, and additionally it delayed modernisation processes[3].

Practice showed that in the world of business run in the conditions of globalisation of liberalisation of all markets, particularly finance and commodity market, and spectacular speeding up of information flow due to the development of ICT

[1] Wallsten S.J., "The Effects of Government-Industry R&D Programs on Private R&D," *RAND Journal of Economics* 31:1 (2000): p. 85.

[2] Klincewicz K., *Polska innowacyjność. Analiza bibliometryczna* (Warszawa: Wydawnictwo Naukowe Wydziału Zarządzania Uniwersytetu Warszawskiego, 2008).

[3] Extensively on this subject see. [Woźniak, Chuzhykow, Lukianenko, 2009, p. 129-144].

sector thick networks of social contacts decide about success. People who connect with organisations only via computer, working at home, or field salesmen usually do not have non-formal contacts; therefore, they are marginalised and become at most users of innovation. Nowadays, designing innovations requires a network of direct contacts: science, business, central, self-government and local authority units and consumers, i.e. network market structures.

Popularisation of thinking in the categories of individualised competitive advantage is contradictory with the use of capital of trust without which grass-roots forming of network structures of the market and taking as part of them innovative risk is not possible. It does not mean that competition is contradictory with modernisation based on innovations. In the conditions of small capital of trust competition may be favourable for imitational innovations at most. Innovations created in the modern times require teamwork of people operating in network structures of the market.

Not only is the clash of the traditional values with market values the reason of the fall of social capital. Distanced relations are in Poland the result of growing social inequalities, with much higher dynamics than in most transforming economies, and following them social and economic inconsistencies. Management innovations or other leading to growth of the social inequalities are favourable for separation of control from responsibility and lowering legal validity of the complex process of social authority[1]. One can hardly expect creative involvement of employees in such a company. One can also hardly count on citizens' society in the local environment in which superiors are not sensitive to just division of effects of involvement in organisation's success.

In transforming economy in which clash of traditional and market values is unavoidable, paternalism with self-responsibility, social responsibility with pursuit of undeserved benefits, deep and strong involvement of people in network is impossible, whether it is caused by will or necessity. This kind of social capital[2] has particular significance for utilising creative potential of network participants (innovation clusters) whether they are networks in family, workplace, educational or others. Competition based on individualistic logic, that is, pursuit of one's own profit calculated in market categories means popularisation of belief that every man is the architect of his own future and in need he cannot count on institutions. A question remains: what should drive to creative involvement in innovation risk of organisation and what should force loyalty towards it if financial resources are still scarce, as it is

[1] Sennett R., *Kultura nowego kapitalizmu* (Warszawa: MUZA, 2010), (*The Culture of the New Capitalism*, Yale University Press, Yale 2006) p. 48.
[2] Such view of social capital is presented by Portes and White (Sennet, 2010), p. 52.

in a small country with low GDP per capita and a small company compared to market position of international corporations.

5. Discussions about responsibility typically take place in the field of law and morality. In the economic sense responsibility is forced by such system of mechanisms, instruments and procedures which ensure that results of taken decisions in the form of costs and benefits are fully attributed to subjects of these decisions. In case of decisions concerning innovation, it comes down to effects of innovation risk which are particularly affected by occurrence of external factors. A difficult issue of fully enforcing risk of innovative actions emerges.

Limiting pursuit of undeserved benefits resulting from positive external factors related with development of knowledge able to act and innovations is linked with appropriate intellectual property and patent regulations. The process of establishing it requires taking into account many matters related with shifting responsibility for innovation risk. These issues well illustrate dilemmas between creation of new technical knowledge in the private sector and effective use of this knowledge or dilemmas between effective time of patent protection and inefficient competition[1].

In institutional system providing space for pursuit of undeserved benefits, financial support for R&D operations or applied research weakens innovativeness of economy instead of strengthening it.

In innovative economy competences of employees of a company belong to its most important resources. Therefore, companies should financially support entities which shape these competences. The company should have a community striving for a specific goal, and not only to accumulation of its assets. Developing competitive advantage by individual companies is not sufficient since it may be obtained in the effect of pursuit of independent benefits, for example by lobbying for labour law disadvantageous for subjectivity of an employee, treating him or her exclusively in the category of costs or even as property of a company[2].

6. Driving subjectivity by negative freedom is a feature of development by globalisation recommended by neo-liberal macroeconomic policy of a state which focuses on protection of private property, freedom of choice, respecting contracts, creating good investment climate by deregulative actions, macroeconomic stabilisation, low taxes and costs of work. In case of Poland policy of this type fosters imitative modernisation, but it does not create

[1] Stiglitz J.E., *Ekonomia sektora publicznego* (Warszawa: Wydawnictwo Naukowe PWN, 2004), c. 413-415.

[2] Handy Ch., *Jaki jest cel istnienia firm* [w:] *Społeczna odpowiedzialność przedsiębiorstw* (Gliwice: Wydawnictwo Helion, 2007), (*Harvard Business Review on Corporate Responsibility*, Harvard Business School Press, Boston 2003).

climate of original innovations. A postcolonial mentality manifesting with believe that wisdom is always abroad and true culture is distant, never domestic, stimulates it. Lack of faith in own power resulting from this belief is a sign of deficit of society's «subjective potential». This deficit was generated by mechanisms of not denationalised centrally planned economy and communist interventionist state. This weak and reduced to claim-based, without responsibility quasi-subjectivity *homo sovieticus* clashed in the result of transformation with numerous manipulations of focused on profits world of business and netocracy.

The paradox is that in the economy based on knowledge, one is waiting for innovative employees and resourceful managers, whereas democracy needs citizens' society. In the theory of management, abundant deposits of creativity are perceived to be in human subjectivity and in economy and politics hopes for development are perceived to be in human and social capital, that is in having knowledge concerning patterns of behaviour favourable for cooperation and involvement in building of common good and taking responsibility for quality of one's own life and fate of larger communities.

These expectations are in practice clearly in contrast with the observed tendencies, to limit subjectivity, to be an involved consumer, a citizen incapacitated by marketing efforts, a seller of owned human capital which is supposed to increase effects of employer (company) and constructing institutional system which is not respecting conditions of fair remuneration. Inability to enforce fair remuneration for human capital sold in the domestic market is the reason of economic emigration, drainage of more resourceful and creative minds[1].

Economies of Poland and Ukraine, due to the inherited development gap and challenges of globalisation need intellectual, political and media elites able to stimulate creativity, striving for perfection of mind, spirit and practical action, restoring faith in own powers. Efficient utilisation of natural creative potential of human requires vision, mission and values oriented towards integrated development. This potential is locked. Persons excluded from the modernisation processes are deprived of fair remuneration for creativity. At the same time, people do not know what it is worth to do since the spirit is lost in the space of moral relativism, mind crammed with individualistic schema and actions are bounded with distinctive for post-socialistic mentality procedures and excess of

[1] Dobija M., Analiza zbieżności gospodarki polskiej i ukraińskiej według zmian produktywności pracy, [w:], Woźniak M.G.,Chuzhykov V.I., Lukianenko D.H. (red.), *Konwergencja modeli ekonomicznych. Polska i Ukraina* (Kraków: Uniwersytet Ekonomiczny w Krakowie, 2009), p. 107-128.

bureaucratically created standards which lock development of innovative organisational behaviour.

Conclusion

The consequence of a set of barriers creating lock-up of innovative organisational behaviour is strengthening prevailing innovative distance of the state economy having a crucial effect on its position in rankings of competitiveness and evaluation of the degree of advancement of knowledge-based economy building process. The lock-up of this type concerns not only Poland and Ukraine. Globalisation everywhere enhances development of technologies by speeded up diffusion of economically useful knowledge. It requires high abilities of knowledge absorption and high pace of innovation as tools of application of knowledge in practice. However, it focuses on creation of innovation in large corporations, condemning others to solutions of imitative nature.

Over a dozen years' period of institutional adaptations of the Polish economy to the standards applicable to the EU member states and implementation of recommendations of EIS type were not used for construction of effective innovation system. Ukraine did not utilise its own way to put economy on market basis to construct the national innovation system as well. Inherited after non-private centrally planned economy low innovativeness still exists, and even new tendencies indicating deepening of the fall of the national innovative potential, despite that in the field of human capital an impressive increase of resources in the sphere of human capital have been recorded.

Ineffective pursuit of constantly moving away *Technology Frontier Area* and inability of economies of Poland and Ukraine to enter into a state based on competition with new and unconventional products due to the development of innovations have complex reasons not only of historical, exogenous character but most of all endogenic and structural. The point is that these factors, depending on deliberate decisions of companies, state and self-government authorities cannot be easily removed due to the pressure of the current issues on whose solution all groups of entities are oriented. It does not mean that little can be done.

State interventionism will not eliminate the innovation blockade and imperfections of research and development market, although activation by public administration of proved in experience of science and technology politics of other countries various means for stimulating technology. In particular, such institutional frames are necessary which will create space for

drawing profits from research activity, which will encourage to active creation of knowledge and its integrated use in innovative objectives, strengthening business and technology relations between companies, research centres and foreign investors and taking responsibility by private entities for further stimulation o basic and development research. Space for activity of stimuli for involvement to not only of education system in propagation of culture of creativity, resourcefulness, activity, self-responsibility and teamwork, but also political, social, market, religion, family, and supra-national structures must be established. An institutional shift is necessary for this oriented towards common set of rules of thinking and acting respecting subjectivity of an individual in innovation processes and forcing subjective approach to innovativeness[1]. This approach is the necessary condition of pro-innovation organisational behaviour harmonising business goals and interests of employees, family and state economy.

In such institutional surrounding, creative reorganisation[2], is possible which is a carrier of various innovations. This type of reorganisation (modernisation) is possible if change management is anchored in behavioural stream (subjective). Referring to the causal model of organisational actions of Burke-Litwin[3], removing innovation blockades on the level of a company requires: communication on the concept of change, leader of change, inspiring employees, drawing up long-term plans and conceptions, devising short-term plans and goals according to long-term objectives and system of awards and sanctions proportional to the degree of compliance with expectations integrated with motivation systems supporting changes.

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