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Pavla Břečková: High performance work system in companies

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Abstract

Companies in general play the key role not only in reaching the goals of the European strategy called 2020, but especially in functioning of any single economy. Almost any country is as successful as are its companies. And the companies are fully dependant on the people as a quality and motivated labour, and its organisation. This article deals with the basic approach to what actually we understand under the term organization and continues with division of labour and its impact. It focuses especially on the high performance work system in companies, the employment relationships and discusses an inevitability of such approach. The article uses the data and materials from Eurofound surveys¹ and uses some of the key findings to draw a conclusion on this topic.

Keywords: performace, organization, division of labour, work system

Introduction

European companies play a crucial role in getting out of the crisis and in reaching the goals of the European 2020 strategy for sustainable, inclusive and smart growth. The main focus of the third European Company Survey was on work organisation, HR practices, employee participation and social dialogue. The survey, carried out from in the spring of 2013, maps a number of practices used in European workplaces, as well as how they are discussed and negotiated at workplace level as well as some of their outcomes. In this article we use only few aspects of the mentioned large survey as it is focused on work organisation and high performance work systém. Let's start with the term of organisation and how it is understood for the purposes of this article.

The professions and processes in practice tend to be more complex than just an easy headwords in the organisational structure sheet. As an example, doctors diagnose and cure patients. But there is more to their job than that. They also order products, carry out administration, read new research literature, check their instruments and so on. In other words, different aspects related to their job are all done by doctors themselves. We therefore describe them as 'self-employed' and not an organisation. In our industrialised world, however, products and services are mostly made and delivered in large-scale settings. There are organisations with hundreds or even thousands of people working at the same time. Inevitably, the work to be done has to be divided in some way into 'work packages' as everyone cannot do the same thing at the same time. We describe these work packages as 'workplaces'. And the process by which the work to be done in an organisation is broken down into different workplaces, we call 'division of labour' (Huys, R., Ramioul, M. and Van Hootehem, G., 2013).

What is division of labour?

As said above, it is understood the process by which the work to be done in an organisation is broken down into different workplaces, that is called division of labour. Within this process a lot of choices have to be made. This is often not obvious to the employees or customers of an organisation. Through a sequence of decisions, all the tasks to be done are transformed from an undifferentiated pool of tasks to a network of often strictly defined jobs. After a while these decisions acquire an almost fixed status which is hardly ever questioned. However, they

¹ Eurofound (European Foundation for the Improvement of Living and Working Conditions, which is a tripartite European Union Agency, whose role is to provide knowledge in the area of social and work-related policies. Eurofound was established in 1975 by Council Regulation (EEC) No. 1365/75 to contribute to the planning and design of better living and working conditions in Europe.

remain the result of choices taken more or less consciously by management. Other possible choices would have resulted in workplaces and organisations with different characteristics.

One such a basic choice is a division according to product or operation. This choice can be recognised in the structure of many organisations. For example, furniture company A has departments 'Tables', 'Chairs' and 'Benches', while furniture company B has departments 'Wood processing', 'Assembly' and 'Garnish'. Or computer company A has the departments 'Europe', 'United States' and 'Asia' while company B has the departments 'R&D', 'Production' and 'Marketing'.

Such a choice has important consequences for the quality of work. Furniture company A may have groups responsible for the production of tables, which could include responsibilities for work planning. In company B this is impossible as the production groups are specialised in, for example, wood processing. As a result they have no overview over the whole process leading to tables and are unable to be involved in the overall work planning. We therefore have workplaces with other tasks and characteristics.

Organisational performance is also affected by such choices. Furniture company B will find it difficult to respond flexibly to frequent changes in product demands. As products have a complex routing within and between specialised departments, throughput time will be long. Company A is better able to adapt to frequent changes as the department 'Tables' is able to deal itself with changes in demand.

Impact of division of labour

Organisations have to consider such choices carefully as these have a lasting character. Indeed, employees in an organisation do not all meet every morning around the coffee table in order to decide who will receive customers, operate machines, pay the bills, check the inventory and so on. Such choices in the organisation are recurrent. Over a longer period of time, changes of course have to be made, but from day to day these choices are fixed. Workplaces, as well as the way they relate to one another in the organisation, are defined. We label this network of workplaces the 'structure of the division of labour'. The term 'structure' indicates that we are dealing with a persistent characteristic. And thanks to this, we are able to describe the structure in the division of labour in an objective way. This could for instance be done by means of a questionnaire. But if we want to do this mapping in a scientific way that can be understood and verified by others, we need a conceptual model. Such a conceptual model provides us with a toolkit of concepts that enables us to map the wide range of choices that are made in any organisation with regard to the structure of the division of labour. Such a conceptual model for organisations was elaborated by Van Hootehem (2000, p. 76) and is sometimes referred to as the 'hamburger model'. The production concept forms the upper half of the hamburger and the employment relationship forms the lower half. This conceptual model is based on modern sociotechnical systems theory (De Sitter et al, 1994). In systems theory, any system consists of a network between nodes. Such a network has a structure which determines the nature of the relationships between the nodes. The way in which nodes operate and thus the system as a whole is determined by the nature of their mutual relationships. Similarly, organisations can be considered 'systems' that transform an input into a certain output aimed at certain goals. An organisation's overarching goal is its survival. And as its environment becomes more turbulent, an organisation will seek to enlarge its possibilities for choice and self-direction. The extent to which the organisation is able to reach these goals is determined by its structure of division of labour. The workplaces in an organisation can be considered as nodes interconnected in a network of relationships. How that network looks will be determined by

its structure of division of labour. This structure will determine how all the workplaces – and thus the organisation as a whole – are able to operate and maintain its presence.

This systems approach stresses the structural conditions in which problems emerge or goals can be reached. It also stresses the structural conditions for the ‘goal manoeuvrability’ of organisations: in other words, the organisational capacity to aim at new goals if circumstances change. This capacity provides the organisation with better chances for survival, especially if the environment becomes turbulent.

High performance work system

Organisations do not have to start from scratch to make all the decisions indicated above. There are certain patterns in the choices many organisations make, patterns that evolve over time. Such models have received many labels such as Taylorist, Fordist, lean production, sociotechnical, business process re-engineering, and high performance work system (HPWS). Common to all these labels is that they all represent certain choices in the hamburger model, even though different models may emphasise certain dimensions as most important. We do not need to ask different questions to investigate whether an organisation can be given such or such a label. The dimensions to be investigated remain the same, only the result of the choices made will determine to what extent a given organisation deserves a certain label (Huys, R., Ramioul, M. and Van Hootegem, G., 2013).

The same holds true for a high performance work system. The conceptual model (Huys, R., Ramioul, M. and Van Hootegem, G., 2013) provides the concepts to describe the high performance work system model. Although the label is used to refer to a wide range of organisational choices, it is important to gain a clearer picture of:

- the common themes between these features;
- the criteria by which a high performance work system can be identified;
- how these criteria are linked to each other.

First of all, the description ‘work system’ refers to a number of specific interrelated ‘work practices’. Although a work system can be broken down into a number of work practices, its outcomes are chiefly determined by their integration in a coherent bundle or cluster. This is because complementarities and synergies exist among work system practices themselves, often referred to as a ‘horizontal match’ (Appelbaum et al, 2000).

In general, a high performance work system is characterised by a production concept that allows for extensive employee involvement in operational decision-making as a means of harnessing people’s potential more effectively and of improving the organisation’s performance. Workers in a high performance work system experience greater autonomy.

More complete parts of the process need to be allocated to groups of workers who together make a product or deliver a service. In such a configuration, these groups can also be entrusted with responsibility for the support and preparation linked to this process as well as the responsibility for controlling and steering the process as a semi-autonomous group.

Possible indicators of a high-involvement work system, relating to the production concept, can be summed up as follows (Huys, R., Ramioul, M. and Van Hootegem, G., 2013):

- **Market-focused or process-oriented business units or divisions:** An organisational structure moves away from a line or functional structure to create business units that concentrate on distinct parts of the market or critical processes in order to achieve a better customer focus and greater accountability of the workers involved.
- **Semi-autonomous teams:** Workers are grouped into teams in which they work together on a complete (part of the) product or service and are collectively responsible for a maximum amount of preparation, support and steering of this process.

- **Reduction in the number of functional specialists:** Instead of maximum functional specialisation, the tasks of functional specialists are integrated within the tasks of the team members actually adding value to the product or service.
- **Reduction in layers of management:** The delegation of control and steering capacity to those actually adding value to the product or service provides them with the necessary autonomy to respond to changing circumstances. Compared with a traditional division of labour, this leads to ‘flatter’ organisations where line managers are involved in facilitating and coaching rather than steering and controlling.
- **Quality management, total productive maintenance, continuous improvement programmes:** Programmes set up to involve workers in improving the process, empowering them to make a contribution outside their routine job. For functional specialists this leads to closer involvement and coordination with those actually making the product or providing the service.

Employment relationship in a high performance work system

The changes outlined above in the production concept allocate more tasks and responsibilities to those actually adding value to the product or service and require greater involvement by these workers. The organisation expects more from its workers than the mere performance of standardised and specialised tasks.

However, a mere change in the production concept is not sufficient to achieve such involvement. To ensure that workers actually take on the greater tasks and responsibilities allocated to them by the new division of labour and to ensure that the autonomy provided is also exploited in the interest of the organisation (‘responsible autonomy’), the organisation has to underpin this involvement with an appropriate employment relationship. In this policy, the required involvement from workers is reciprocated by greater involvement on the part of the organisation towards its workers.

This is expressed by reinforcing the internal labour market in the organisation. Organisations with a strong internal labour market are characterised by the internal filling of vacancies, with a concentration of external recruitment through the ‘doors’ at the lower end of the promotion scale and ample promotion possibilities within the organisation. The internal mobility of workers within the organisation is more important here than the influx and outflow of workers. This is illustrated by a number of features of the employment relationship linked to the aforementioned changes in the division of labour (Huys, R., Ramioul, M. and Van Hootegem, G., 2013).

Recruitment and selection

The changes in the production concept require greater skills from frontline workers. They have to be able to fulfil more tasks and responsibilities, possess the communication skills required to cooperate with others and be able to take the initiative in order to exploit the autonomy provided. Moreover, in view of the functional flexibility of workers, selection is not oriented so much towards an examination of the necessary skills for a specific workplace, but rather to the willingness and capacity for acquiring skills within the organisation as a whole. In addition, ‘soft’ qualifications such as being able to learn and cooperate with others are more important in terms of selection criteria. This does not imply that selection procedures are less stringent. On the contrary: given the desired long-term relationship, the organisation wants a guarantee, through an elaborate selection procedure, that newly hired workers have the desired skills. However, these skills are more concerned with attitude and capacity than precisely defined occupational qualifications.

In view of the stronger internal labour market in a selection, recruitment intensity will be weak and aimed at filling vacancies at the bottom end of the organisation. Organisations will

not compete solely with each other on the basis of wage levels but using the image of a ‘good employer’ offering job security and ample promotion opportunities.

Indicators of a high performance work system include (Huys, R., Ramioul, M. and Van Hootegem, G., 2013):

- elaborate selection procedures (also for frontline workers) including group interviews or exercises;
- emphasis in selection procedures on attitude and abilities rather than occupational qualifications, with recruitment criteria placing less emphasis on previous experience in a similar job or specific technical experience, and more on willingness to learn new skills and to work with others

Necessity of a high performance work system?

Considerable evidence is available to show that product and technological life cycles have shortened and that the variety of products has expanded significantly. The marked increase in the number of automobile models over the past few decades, the acceleration of fashion seasons in clothing, the proliferation of services provided by banks, and the sharp increases in the numbers and varieties of products available in supermarkets all suggest that companies that focus on producing huge numbers of only one product style will be in trouble. The development of microprocessor-based information and computer technologies has also boosted the proliferation of products and the shortening of product life cycles. In this environment, moving quickly down the learning curve in providing new generations of products and services, and getting them to the market quickly, can be an important competitive advantage (Appelbaum et al, 2000).

The mentioned changes in the essential performance criteria for organisations have caused a wide variety of sectors to rethink the role of workers in the production process and also the contribution that a skilled and motivated workforce can make to performance.

It seems logical (and also the authors of the study² Background paper for the Third European Company Survey, 2013, state it there) that more skilled workforce can reduce the time involved in learning to produce new products or services and can deliver a more substantial contribution to solving problems. A high performance work system can help organisations to improve their innovative capacity by:

- achieving faster development cycles;
- widening the product range;
- responding more rapidly to changing customer needs;
- adding value to existing products and services;
- upgrading products more rapidly.

Survey and key findings

The [European Company Survey \(ECS\)](#), implemented in 2004, 2009 and 2013, gives an overview of workplace practices and how they are negotiated in European establishments. It is based on the views of both managers and employee representatives. The survey was first launched in 2005 as the European Survey on Working Time and Work-Life Balance. It was repeated in 2009 as the European Company Survey, focussing on flexibility practices and the quality of social dialogue. The first findings from the 2013 survey are now online and are used for this article.

2 Huys, R., Ramioul, M. and Van Hootegem, G. High performance workplaces: Background paper for the Third European Company Survey, 2013. *Preparatory work for Eurofound's survey*, available at www.eurofound.europa.eu, Dublin, Ireland.

Survey details

The third ECS was implemented by Gallup Europe and covered a total of 32 countries (27 EU Member States and Croatia, Former Yugoslav Republic of Macedonia, Iceland, Montenegro and Turkey). The target sample size for all 32 countries is 29,950, ranging from 300 to 1650 depending on the country size. Interviewing took place from February to May 2013 and, as for the previous waves, interviews were carried out by telephone with managers and employee representatives in the language(s) of the country.

Selected key findings³

- First findings, launched in November 2013, show that despite the recession, almost 40% of companies reported difficulty in finding staff with the right skills. For innovative companies, it is even more of a problem.
- Variable pay is widespread, found in 63% of establishments surveyed.
- Over a third of companies in Europe have introduced innovation measures and report that their financial situation has improved. Changes like product and process innovation, or changes in technology or work organisation at company level, are helping firms to be more resilient and exit the recession.
- In 68% of establishments, staff monitor external ideas and technological developments for new products, services and processes, and, in 62%, employees document good practice or lessons learned so that these may be shared with colleagues.
- One-in-seven establishments report high levels of sick leave, and the problem is more common in large companies and those where the financial situation is rated as bad or very bad.
- The survey also shows that there are countries with a high incidence of both innovative work organisation practices and social dialogue structures. On-going in-depth analysis would explore whether and how these phenomena are linked in differing national settings, sectors of activity and company types.

Conclusion

The need for a transition to this type of new work system will be more urgent as such demands are made by an organisation's environment. There must be a 'vertical match' between organisational characteristics and the external environment, including company strategy. Traditional work systems can also perform and have performed very well in the past, although in an environment in which organisations competed mainly on the basis of price and pursued economies of scale. In this environment, managers viewed labour as a cost to be minimised rather than as an asset that could provide the company with an advantage over its competitors. Labour in these organisations used to be fragmented into simple, repetitive tasks that involved little employee discretion. The emphasis was on individual efficiency and mastery of easily learned jobs. Motivation was assumed to be based solely on individual financial incentives and workers were not expected to contribute ideas. It is, however, necessary to admit openly that there will be always jobs and people for which and whom such system remains suitable.

The high performance work system mentioned in the article would avoid such extensive specialisation and standardisation of tasks because this gives way to much rigidity and endangers the efficient control of the process. As organisations face increasing turbulence in their environment, it is crucial not to design a production concept that reinforces this turbulence within the organisation.

³ Key findings coming out of the Eurofound (ECS) survey 2013, available in full at www.eurofound.europa.eu

The presented high performance work system (Huys, R., Ramioul, M. and Van Hootegem, G., 2013) does not claim to be the ideal option for all organisations in all circumstances. However, the increasing levels of uncertainty and change in the environment of many organisations create powerful incentives to move to a new work system based on employee participation. To what extent organisations have really implemented such a high performance work system and to what extent this implementation also leads to better performance are issues to be investigated further.

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Jiří Mihola, Radim Valenčík: The financing of the productive service through HCC

Příspěvek byl zpracován na VŠFS v rámci projektu specifického výzkumu Reformy systémů sociálního investování a sociálního pojištění, problematika jejich přípravy a realizace.

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Abstract

The use of HCC in areas of acquisition, utilization, and preservation of human capital. Economic effects of such sectors – acceleration of professional fulfillment, better professional performance, longer zenith and horizon of productive fulfillment. Proposal and substantiation of the HCC based on the transferred price to ensure that economic effects through the relevant mechanisms (and not on the basis of the institutional system entities) serve as the source of financing for the entities that contributed to them and are distributed based on the contribution of such entities to the achievement thereof. A transferred price is a contract, where a productive service recipient makes payments based on the potential benefits accrued as a result of the productive service and based on the amount of returns generated from the productive service – directly to the productive service provider. Effects of some productive services only materialize in the form of longer horizon of productive fulfillment.

Key words: human capital contracts, transferred price, productive service

1. Introduction

The idea of financing one of the forms of productive services – tertiary education – in the form of HCC (human capital contracts) was first formulated in 1955 by M. Friedman *The Role of Government in Education* (1955), even before he wrote *A Theory of the Consumption Function* (1957), where Friedman formulated the idea of productive consumption – i.e. consumption enabling the acquisition and preservation of human capital.

Since the 1960s, we have seen many attempts of applying the aforementioned idea in practice, in different variations and with different results. For a long time, the Australian HECS system seemed to be the most successful of those attempts; the US MyRichUncle system also looked promising. Many specialized papers came into existence in connection with the design, improvement, and analysis of functioning of these systems, whereas the most significant works in terms of theory are those of N. Barr (2012), B. Johnston (1972, 1986, 2006), M. Palacios (2004), H. Vossensteyn (2005, 2009). The last researcher considerably clarified the term “HCC” and also tried to expand its application to the area of healthcare financing. In terms of the Czech Republic, mainly the following people are engaged in theoretical research of the given area: P. Matějů (2003, 2005), V. Urbánek (2007). The problems of HCC-based systems show that it is necessary to proceed significantly further in the theoretical analysis and modeling of HCC.

The following article was created by the team that has already successfully resolved three related projects of Czech Science Foundation – Efficiency of investments in human capital (2003-2005), Investments in social capital and efficiency (2006-2008), and Theory of redistribution systems (2009-2011).

In a way (in the form of searching for a primary theoretical model), the area is also studied by important Czech teams concentrated around R. Richta (particularly in the 1960s), Y. Strecková (particularly in the 1980s), and M. Potůček (present), who focused on the role of human potential in economic processes.

Theoretical conclusions are compared with the results of international research of adults OECD PIAAC and international research SHARE.

Compared to existing approaches:

⁴ The study was prepared with financial support received from specific research project ‘Reforms of social investment and social insurance’. The project was prepared and implemented at The University of Finance and Administration in 2014-2015.

- We clarify the HCC in question (the principle of transferred price play the key role in this regard).
- We expand the application of the HCC to the area of conveyed application of transferred price (i.e. in areas, where the effects of productive services become apparent by longer horizon of productive fulfillment, for example).
- We corroborate the relationship with the perspective trend of economic development associated with the growing role of productive services aimed at acquisition, utilization, and preservation of human capital.
- We create general model of the said type of the HCC, which will make it possible to create feedback between economic effects (and assessment of such effects on different markets) of all types of productive services and their financing (or to verify the hypothesis of whether this is a sufficiently general principle).
- Based on the HCC model and improvement of the data analysis methods, we assess, significantly more accurately, the effects of productive services (particularly in the area of education and health).

In the article we define the basic characteristics of HCC based on transferred price and show its importance for the increased role of the productive service sector. Consecutively we show the effects of productive services grow on economic grow.

2. HCC based and the transferred price

It is possible to use HCC in sectors related to acquisition, utilization and preservation of human capital. These sectors comprise, in particular, education and healthcare, but they may also include family upbringing, provision of housing for young families, culture, some areas of relaxation and recreational activities, spa industry, professional (work-related) consulting, etc. Economic effects accrued in the aforementioned sectors are in the form of quicker professional fulfillment, better professional results, as well as longer zenith and horizon of productive fulfillment; see the following chart:

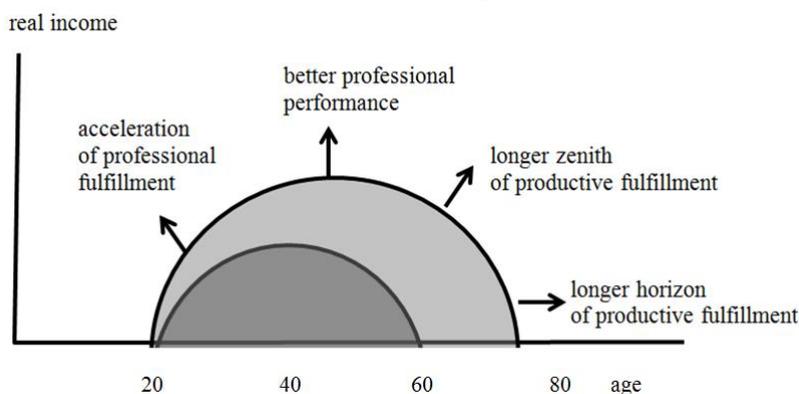


Figure 1: The Economic Effects of Productive Services
(Source: Valenčík)

A general HCC model (subsequently specified for individual areas of productive services) based on a transferred price and conveyed application of transferred price (see below) enables to show, how economic effects in particular sectors are created. The effects arise through mechanisms and not through decisions of various entities operating in the institutional systems. The effects serve as the source of financing for entities which contributed to them (i.e. providers, users and mediators of productive services). The financing is distributed according to the contribution of these entities to the achievement of these effects. A transferred price is a contract, where a productive service recipient makes payments based on the potential benefits accrued as a result of the productive service and based on the amount of

returns generated from the productive service; such payments are made directly to the productive service provider. It allows risk diversification, together with the financing of investments in human capital from future returns. It may be used to finance, for example, university education, as well as initial housing for young families or immigrants.

The term transferred price is based on the fact that valuation from another market (such as from the market of professional fulfillment) and from another time period is transferred to the area of human capital contracts. It generalizes the concept of price in terms of mutual interconnection of individual markets.

Effects of some productive services only become apparent in the area of longer zenith and, in particular, horizon of productive fulfillment. In this case, we talk about the conveyed use/application of transferred price, because the precondition for assessing such effects is the functioning of insurance markets or pension insurance/health insurance market, as appropriate.

Therefore, the definition and the settings of the mechanisms that make it possible to create the feedback between the economic effects of productive services and the financing of those, who contributed to such effects, also assume, among others, a fully contribution-based system of pension insurance. Confrontation of the model with empirical data (PIAAC, SHARE) relies on the models of H. Grossman (1972) and G. Becker (1993) for human capital valuation.

Based on the theory of demand after health, we are able to define two basic types of human behavior in terms of healthy lifestyle:

- active, effective, and rational behavior of an investor type, consisting in the prevention of illnesses by promoting one's health;
- passive, ineffective, behavior of people with lower rationality (consumer).

The conveyed application of transferred price would motivate people to behave rationally.

The theoretical objective of the project is to verify the hypothesis that it is possible to define a mechanism for each area of productive services that would be based on general rules and enable the provision of financing for such services via the HCC on the basis of the transferred price principle or conveyed application of transferred price. In order to verify the given hypothesis, it is necessary to:

1. Specify the definition of the term "transferred price" and "conveyed application of transferred price"; consequently, describe – on the basis of a model – its nature to ensure that individual cases of its application rely on a common foundation.
2. Classify in detail individual types of productive services that allow the acquisition, utilization, and preservation of human capital; specify, for each of these types, some type of transferred price or conveyed application of transferred price that would enable the financing of the relevant productive service from its returns.

The practical objective of the project is to formulate theoretical bases of the basic concept of interconnected reforms in the area of social investments and social insurance (financing of education, healthcare, and pension insurance).

The concept of „economy based on productive services“ is used in a similar sense as the concept of „knowledge society“. We consider it more accurate for several reasons:

- It is more complex as it refers to education as well as to other attributes of human capital. And it is not only about the way of acquiring them but also of maintaining and applying them.
- It indirectly demonstrates that in order to be able to comprehend this economic system our society is directed at, we will need a micro-economic theory which exceeds the boundaries of the neo-classical economics. It does not take into account the productive (source-related) nature of the consumption.

In this context, I find it important to stress the substantial difference of the proposed approach from the R. Inglehart's concept about a society based on "non-material" needs presented in his work called „The Silent Revolution“ from 1977. Although the Inglehart's concept might seem

quite attractive and most popular at his time, there is one fundamental flaw. It does not deal with a specific idea as to how the satisfaction of "non-material needs" can change in a crucial factor of "material" economic growth. R. Inglehart does not even imagine a thing like this could be possible. Therefore, he cannot even create a concept of economic system where strengthening the role of "non-material needs" could – figuratively speaking – pay its way in order to compete with other tendencies within the social development.

In this area a long time ago, K. Marx developed this idea much further in his manuscript "Grundrisse" (1857-61) when he writes: „*Real economy – saving – consists of the saving of labour time (minimum (and minimization) of production costs); but this saving identical with development of the productive force. Hence in no way abstinence from consumption, but rather the development of power, of capabilities of production, and hence both of the capabilities as well as the means of consumption. The capability to consume is a condition of consumption, hence its primary means, and this capability is the development of an individual potential, a force of production. The saving of labour time [is] equal to an increase of free time, i.e. time for the full development of the individual, which in turn reacts back upon the productive power of labour as itself the greatest productive power. From the standpoint of the direct production process it can be regarded as the production of fixed capital, this fixed capital being man himself. It goes without saying, by the way, that direct labour time itself cannot remain in the abstract antithesis to free time in which it appears from the perspective of bourgeois economy.*“ (Marx 1974, p. 343, Marx online en 2002, p. 643)

R. Richta (and an Interdisciplinary Research Team) also progressed further with his famous work (highly regarded all over the world and published in many languages) *Civilization at the Crossroads; social and human implications of the scientific and technological revolution* (1969).

The fact that the needs in question (we call them "faculty needs", i. e. needs related to developing, maintaining and applying skills), are to "pay their way" is justified in terms of the existence of position investment, investment in social position which turns property advantage into privilege. It is the enhanced influence of the position investment in the last decades that results in suppressing optimistic trends that are mentioned by R. Inglehart in his work.

3. Sector of productive services and a new type of economic growth

The most common cause of current problems is the fact that the present steady development has not been reoriented towards a society of productive services, i.e. a society where the economic core is represented by productive services related to acquiring, maintaining and applying the human capital. The economic growth can be exponentially dynamic as well as sustainable, or precisely speaking it has to be exponentially dynamic to be sustainable. The foundation of this type of growth stands for productive services. A crucial condition for the transition to the economy of productive services is the motivation of entities that are involved in the area of productive services related to acquiring, maintaining and applying the human capital; the creation of the feedback between the effects of productive services and the funding of these subjects can substantially contribute to higher dynamics of the economic growth, positive changes of its nature and to enhanced quality of people. In order to implement the new economy, i.e. the economy of productive services, it is necessary to have a complex of interconnected reforms in the sectors of social investment and social insurance (especially education, health care and pension schemes).

The timely theoretical preparation of the reforms in the area of the social investments/social insurance systems as well as the subsequent implementation of such reforms are crucial for further crisis-free/conflict-free development of the society, which assumes significantly higher role of productive services as the center of gravity of such economic growth that may be increasingly dynamic as well as sustainable.

The inability to come up with a realistic idea about the possibility of exponentially dynamic sustainable growth is epistemological cause of evoking and spreading visions about catastrophic or enforced dealing with problems associated with the existence of insuperable obstacles of the growth (through consumption regulation, population number limits etc.). These visions subsequently enhance the intensity of position investment that results in economic segregation and weakening of the institutional system of the society by activities of structures that protect one another when breaching generally accepted principles. It subsequently leads to bending reforms in the areas of social investment and social insurance, exploiting their objective indispensability to activities harming the society. For this reason, we are going to focus on creating a vision about the possibility of exponentially dynamic and sustainable economic growth based on the role of the sector of productive services. The economy based on productive services allows economic growth that can be (in a simplified way) described as exponentially dynamic as well as sustainable. In other words – a transition to the economy based on productive services allows dynamic growth. There is no need for consumption regulation or struggle for sources; it involves the change in consumption manner. It is about satisfying needs associated with developing, maintaining and applying human skills, i.e. satisfying needs that subsequently affect the economic growth as the most significant productive force.

The following set of figures will try to specify the vision about the possibility of such growth and to present it in the context of the industrial revolution that allowed the exponentially dynamic growth in a similar way as the current transition to the economy based on productive services.

It is not easy to imagine how the growth could be exponentially dynamic (in terms of the average of the same proportional gains in a long-time time horizon to a gradually increasing base) and sustainable at the same time. The Figure 2 compares the alternative of continuing exponentially dynamic growth (a dashed line graph) with the alternative of degressive growth limited by sources and consumption restriction (a dotted line graph).

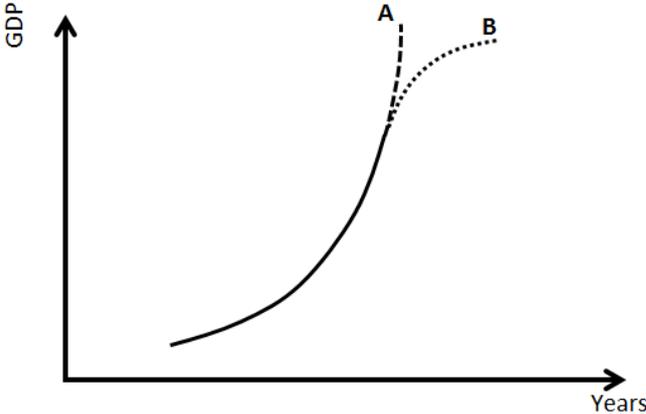


Figure 2: The alternatives to the Growth
(Source: Valenčík)

Note: During discussions at various expert forums we were presented with major opinion indicating that sooner or later it will not be possible to continue growth that would demonstrate exponential dynamic. We are going to reveal that such growth is possible and the shift of this dynamics already occurred in the past.

On the one hand it implies that no steady growth can be both exponentially dynamic and sustainable. On the other hand, however, it implies that the economic growth that is not steady and the nature of which changes can be both exponentially dynamic and sustainable.

Let's focus on the example of industrial revolution. First, we are going to use a very simple scheme and afterwards a more detailed scheme based on the analysis of real data.

The Figure 3 presents a situation where the economy is based on the old sector (agriculture in the respective case) and a new sector is included in the initial phase (e.g. a new industry represented by craft). If the growth is of steady nature, then most production is ensured by the old sector (e.g. agriculture). Accordingly, production of the new sector production is increased as well. Enhancement of the old sector production, however, often runs into natural obstacles that restrict the growth (in that case a limited soil reserve with restricted productivity of the soil).

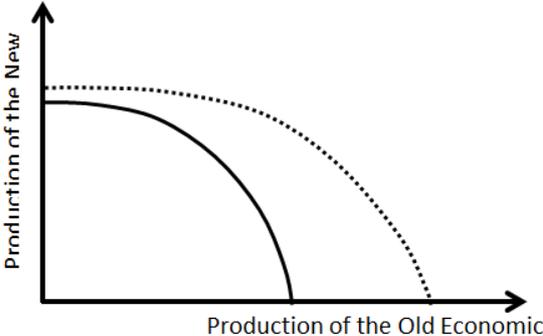


Figure 3: The Economy Based on the Old Economic Sector (Source: Valenčík)

The economic revolution consists in expanding the new sector (e.g. craft turning into industry), it becomes the most dynamic, the core of the new type growth moves there, which subsequently allows enhancing the productivity of the old sector as well (in agriculture in the respective case). Restrictions that used to affect the old sector are overcome through innovations produced in the new sector. See Figure 4:

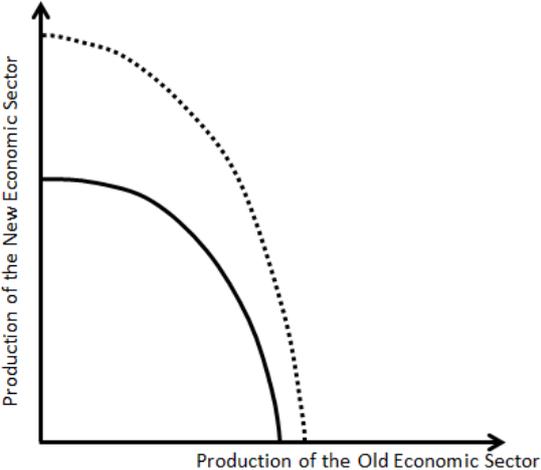


Figure 4: The Economy Based on the New Economic Sector (Source: Valenčík)

However, the aforementioned scheme can be used for describing smaller changes in the economy related to spreading innovation waves. Let's focus on the economy that is based on industrial revolution, however, it has not included electronics yet:

- Old sector = nearly the whole industrial economy.
- New sector = initial phase of logistic elements of the mechanical type (from the Prague astronomical clock, Watt regulator to analog computers controlling gunfire of ship guns). Technological development (from the invention of relay, electron valve, transistor, integrated circuit to the microchip) allows massive (then hardly to imagine) expansion of logistic

elements in economy, the launch of microelectronic logistics offering new possibilities for economic growth:

- Input savings (space, time, energy).
- Achieving technological parameters that were unthinkable before (precision, operating technology without direct human involvement, not only during space exploration).
- Generating new human needs that can be fulfilled by logistics based on microelectronics.

This way we could also describe innovation waves related to biotechnologies, laser technology etc.

The abovementioned scheme is most significant for demonstrating a crucial change affecting us nowadays: transition to economy based on productive services, i.e. services related to acquiring, maintaining and applying human capital. Here, the basic condition does not have to be technological but system-based:

- Development of relevant products of financial markets that would allow feedback between economic effects of productive services and funding these services.
- Breaking through barriers working against natural orientation of the society towards a higher level of equal opportunities.

The following Figure 5 depicts the development of labour productivity from the beginning of our era:

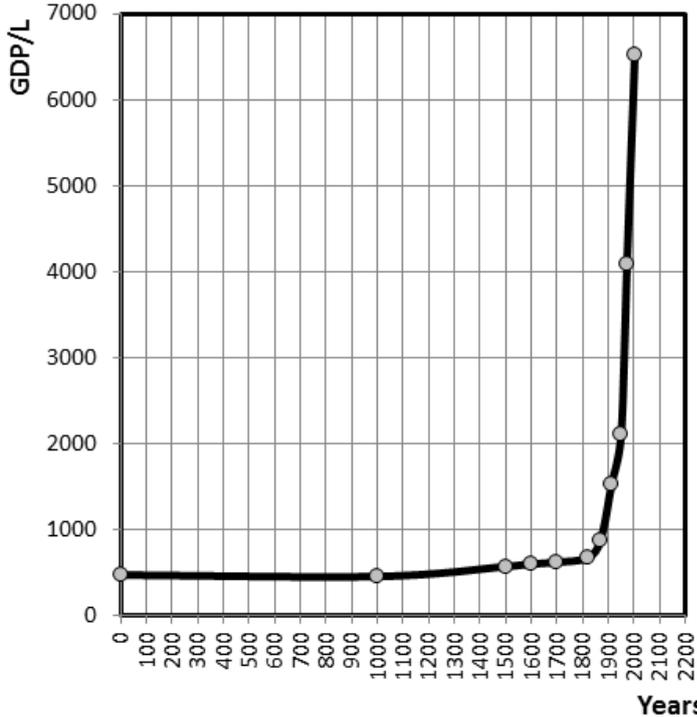


Figure 5: The Development of Labour Productivity from the Beginning of Our Era (Source: Mihola)

We can see that $G(HDP/L)$, (i.e. rate of growth per labour unit), starts to increase markedly in the initial phase of the industrial revolution and keeps growing to this day. However, its growth is decreasing and shall stabilize at the average interannual rate of 1.4 %:

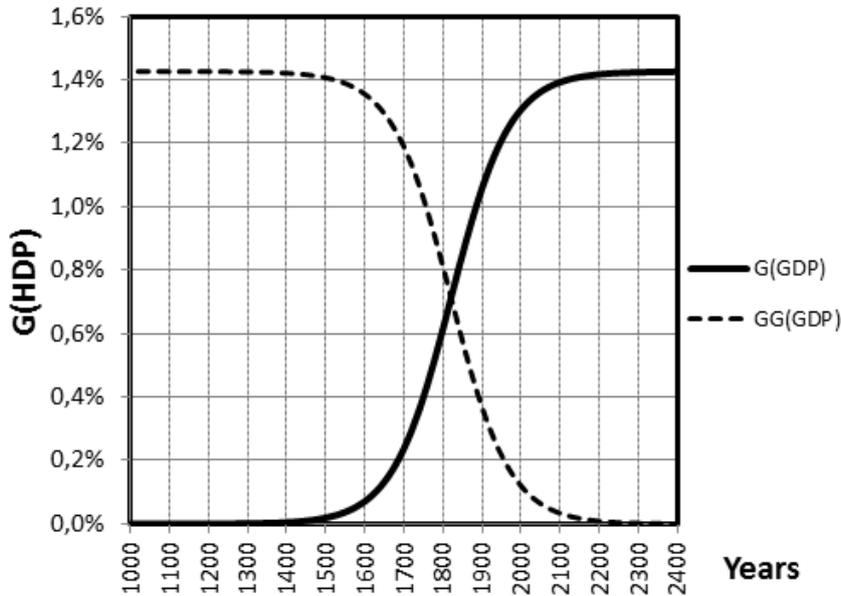


Figure 6: The Rate of Growth per Labour Unit
(Source: Mihola)

The transition to economy based on productive services can launch a similar process. Not only does the economic growth have an exponential nature from a long-term perspective, but it is actually faster. At a certain period the exponential dynamics of this growth started to accelerate and stabilized (so far) on exponential growth that corresponds to the average interannual rate of 1.4 % of rate of growth per labour unit (i.e. absolute growth is higher as a result of labour reserve gain). This increase in the rate of growth, well-described in graph 7 presenting the increase of average long-term gains, occurs during the industrial revolution. Throughout the industrial revolution, the respective dynamics is slightly increasing. Rather than to expect the rate of growth to decrease, we are more likely to experience similar increase as the one during the industrial revolution when the change of the economic growth character causes increase in its interannual dynamics from the present 1.4 % to a higher number as indicated by the following Figure 7:

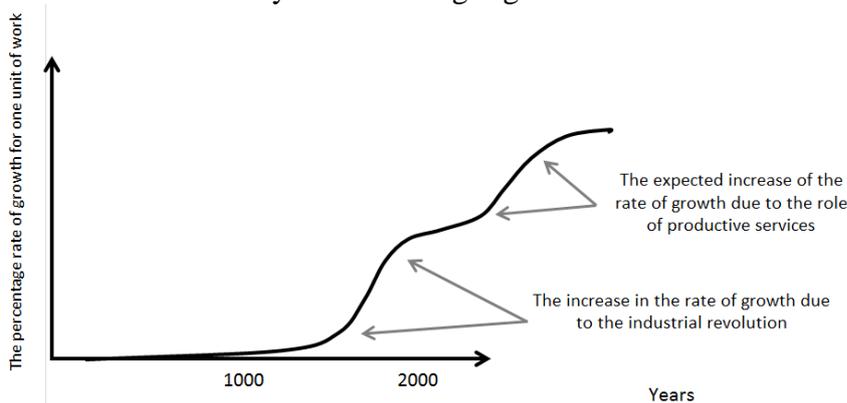


Figure 7: The transition to the Economy Based on Productive Services
(Source: Valenčík)

Another analysis presents intensive factors of growth entering the economy during the industrial revolution. First, there was room for capital accumulation (which was not the intensive factor of growth yet), only then did the capital accumulation provide room for applying innovations related to technical progress.

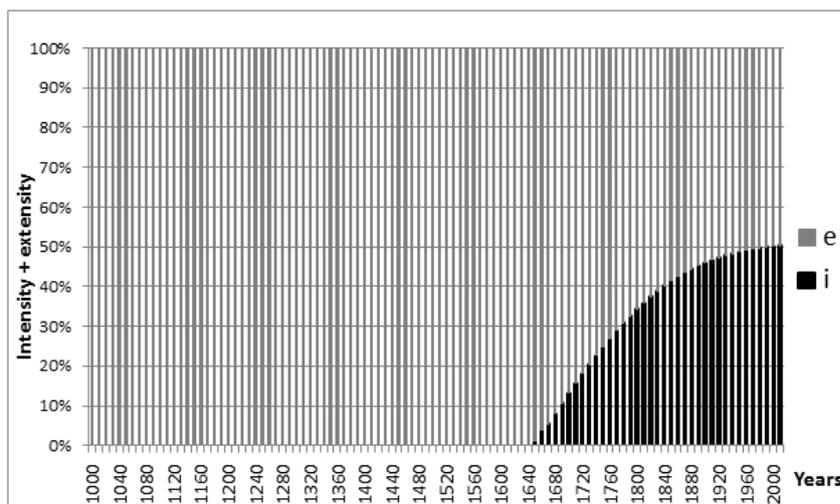


Figure 8: The Intensive factors of Growth Entering the Economy during the Industrial Revolution

(Source: Mihola)

Intensive factors stand for all positive changes as against the expansion of production solely based on expanding the production scope. The basic circle provides innovations of all kinds supported by patents and inventions i.e. by the development of science and knowledge in the broadest sense of the word. The intensive factors also include numerous improvements such as better work organization, more efficient management, effective motivation and marketing etc.

The growth in influence of intensive factors depends on the level of human capital. The key elements are utilization and development of those primary human skills possessed by all individuals. This complex of skills and faculties is always individual and original for every individual, however, it is possible to find a job that can be the most suitable for this person. Therein lies the biggest present reserve of society development.

The dynamic parameter of intensity is determined by the relationship and the dynamic parameter of extensity is determined by the expression, where $G(SIF)$ is the rate of growth of the total input factor and $G(SPF)$ is the rate of growth of the total productivity factors. The dynamic parameter of intensity expresses the portion of intensive factors influence, whereas the dynamic parameter of extensity expresses the portion of extensive factors influence. If both factors exert influence upon the growth, their sum equals 1 (or 100 %). Productive services of their own nature (suitable selection of profession, acceleration of professional preparation, acquirement of higher-level innovation skills, extension of the period of their acquirement and application, enhancement of the effectiveness of their application) lead to the enhancement of intensive factors influence. Technically speaking, they are the growth factor that enhances intensification, which makes it quite a distinct intensive factor.

The development of intensity and extensity of the world development from the beginning of our era is shown in the upper graph. It clearly demonstrates that a significant arrival of intensive factors corresponds to the period of industrial revolution. By that time, the development had been quite moderate, so the significance of dynamic parameters was markedly smaller with this tiny product growth. This development came close to a purely extensive development.

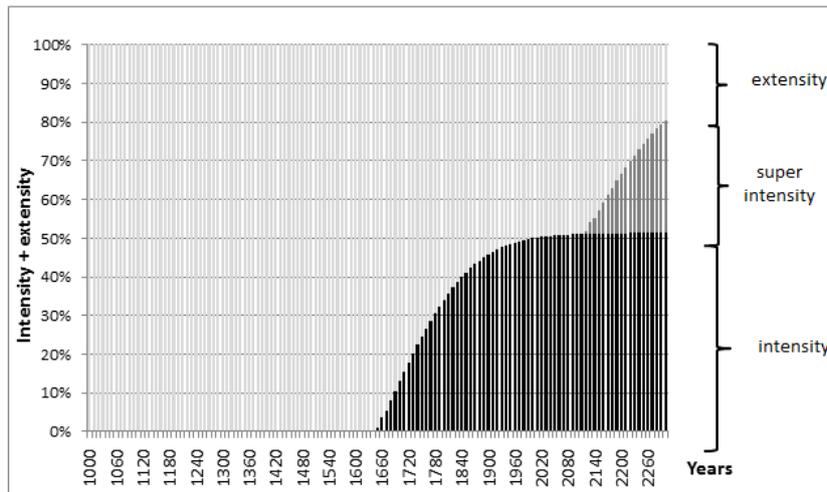


Figure 9: The Input of Human Skills
(Source: Mihola, Valenčík)

The input of human skills that "are recast" within a technical progress is the factor of intensive growth and we can express it and even imagine. Productive services intensify the process of overall utilization of human faculties (through their effective acquirement, better maintenance and application) and affect the intensification of the intensive factor. Future breakdown of the portion of extensive, intensive and super intensive growth factors may take the form presented in the Figure 9.

4. Conclusions

We live in times where problems and conflicts accumulate and arise for various reasons. Their common feature is the fact that the steady development of our civilization has run into natural barriers created by the nature of the world we live in. Overcoming these barriers and finding solutions to these problems requires a change of the economic growth nature as we have tried to demonstrate. This change is not only necessary but – which is most important – even possible. This change can be described, defined and named differently. We believe that its most distinct feature is substantial growth in role of productive services, i.e. services associated with acquiring, maintaining and applying human capital (education, health care etc.).

In order to implement this change, it is necessary to reform the systems of social investment and social insurance (education funding, health care, pension scheme) so that the society can activate mechanisms that create feedback between economic effects of productive services and sources of their funding. It is important to minimize or to completely exclude redistributed institutional interventions. Such mechanisms can be created by utilizing HCC based on transfer price and mediated application of the transfer price principle. This shall allow the sector of productive services to stand on its own economic foundation and active competition to contribute to substantial enhancement of their effectiveness. Effectiveness in this case means a higher-quality and more productive way of living.

Although the economic growth may not seem exponentially dynamic and sustainable, the analysis of industrial revolution (birth of industry, growth in its role in economy) and its comparison with distinct growth in role of productive services sector demonstrates the opposite, even with increasing dynamics of proportional gains.

Elaboration of the changes related to overcoming the steady nature of the development, specifically the form of growth in role of the productive services sector, is considered relevant and worth professional interest. Individual countries have different initial conditions. There

might be different opinions concerning a number of questions, which is why problems arisen in this area should be tackled as part of international cooperation.

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Petr Wawrosz: Transferred price and the sector of productive services as the key preconditions to smart, sustainable, and inclusive growth

Příspěvek byl zpracován na VŠFS v rámci projektu specifického výzkumu Reformy systémů sociálního investování a sociálního pojištění, problematika jejich přípravy a realizace.

Introduction

The issues relating to economic growth are among the most frequently discussed in economics. This is logical. Growth allows people to produce more goods, thereby satisfying more needs. Thanks to new resources that result from economic growth, we are able to cure previously incurable diseases, prolong the human life, and increase its quality. Nevertheless, it appears that economic growth has its limits. For example, it may have adverse environmental impact. As a result of the growing number of opportunities, the stress level of people, who are not able to take advantage of all the opportunities available, may also increase. Even during the period of economic growth, there may be some population groups that have no or only minor benefits (compared to other groups) from such growth. Therefore, other terms are used in addition to the growth itself, such as sustainable growth, inclusive growth or smart growth. These types of growth would address the aforementioned negative factors. There are many publications that deal with these types of growth, analyze their characteristics, and discuss ways of achieving such growth. In terms of factors affecting economic growth, investments in human or social capital, as appropriate, are often mentioned (e.g. Becker 1964; Barro and Sala-I-Martin 1999; Robaliano 2000, Grootaert and Van Bastelae 2002, Savvides and Stengos 2009; Roy, Roberts and Ali 2012). However, the ways of motivating people not only to invest in their human and social capital, but also to promote human/social capital investments of others, are only seldom discussed. The sector that offers or arranges investments in human and social services to/for its customers may be referred to as the sector of productive services. This sector offers services, through which customers increase their human and social capital, thereby becoming more productive.

The objective of this paper is to show that transferred price and the sector of productive services represent key preconditions to smart, sustainable, and inclusive growth. The article is organized as follows: First section introduces concepts of sustainable growth, inclusive growth and smart growth. Second section describes characteristics of the sector of productive services. We, in addition to other things, explain why we chose this term and how our description of possibilities offered by the sector resembles the possibilities that were offered by the sector of industry during the Industrial Revolution. The third section then brings connection between the sector of productive services on the one hand and smart, sustainable, and inclusive growth on the other hand. It is shown why we conjecture the sector of productive sectors is the key precondition to smart, sustainable, and inclusive growth. Fourth section concentrates on the essence of transferred price, explains its principles, and shows how transferred price is able to solve some risk associated with the situation, where some people that wish to invest in their knowledge abilities or skills do not have sufficient funds but other people are willing to lend them the necessary resources. We emphasize that the principle of transferred price is the general principle that can be used in many situations when income of one person depends on the quality of services that are provided to this person provided by another person. Human capital contract, sometimes suggested (e.g. Friedman 1962; Palacios Lleras 2004) as possible means how students can finance their education, then is a specific example of using the transferred price principle. Fifth section suggests how transferred price could be used in the sector of productive services. The suggestion is based on the idea that a provider of productive services should be lender who in some time provides its customers with the services. Customers are borrowers, who pay for the services not at time such services are used, but sometimes in the future, using their future income that is the consequence of such services, provided their income exceeds some threshold defined in the contract between

the lender (provider of productive services) and individual customers. Sixth section shows that transferred price provides useful feedback about the productive service quality to its provider, client, and other subjects. The seventh and final section discusses the obstacles that prevent the broad use of transferred price. We believe that some of them are only imaginary, i.e. they only exist only in the people's mind and can be overcome relatively easily. Others are real; however, and their existence is the main reason why the transferred price concept is only seldom used. The barriers to entry into the market (sector) of productive services and tough regulations of the sector are among the most important in our view. We develop our opinion in the section and suggest what should be done for achievement of smart, sustainable, and inclusive growth.

1. Concept of sustainable growth (development), inclusive growth, and smart growth

This chapter introduces the concept of sustainable growth (development), inclusive growth, and smart growth. Let us start with sustainable growth/development. There are many definitions of these terms, but the most frequently quoted definition comes from the publication *Our Common Future*, also known as the Brundtland Report (UN 1987): "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: 1. the concept of needs, in particular the essential needs of the world's poor, to which overriding priority should be given; and 2. the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs." Therefore, what can we derive from the definition? At first glance, it includes a clear ethical motive of responsibility to future generations, which have the right to live at least under the same conditions as the present generation. Moreover, it talks about the meeting of needs of the present; based on this, we can assume that the objective is not to suspend or limit economic growth. Quite the opposite. Only sustainable growth is the basic precondition to escaping the poverty gap and to meeting individual needs. UN (1987) explicitly mentions that the present needs always refer to the basic needs of the poorest people on the planet. Otherwise, the term "needs" could be statistically misinterpreted: although the global situation might seem relatively good, consequences of a potential disaster would most severely affect the poorest population groups (e.g. seaside populations of developing countries in case of more significant ocean level rise, where developed countries would be able to deal with such defect relatively successfully). The development in the term "sustainable development" is a dynamic element, a process of constant change, where the meeting of the needs of the present generation and of the future generations is harmonized. It is not defined, which needs matter more. The decisive measure is the preservation of natural resources and the development of the quality of life. The phrase sustainable development fully characterizes the global perspective of future development. Development characterizes change in time, with the subject improving. Sustainable development emphasizes permanent, long-term nature of the given activity. Our paper will rely on the aforementioned, with some expansion. In our understanding, sustainable growth will refer to the following growth that also:

1. Meets the needs of the present without compromising the ability of future generations to meet their own needs.
2. Does not, in the conceivable future, hit the barriers given by the limitations of natural resources or the barriers determined by the limited ability of natural resources to absorb the consequences of human, and particularly economic, activity.

The expansion consists in the fact that the objective of sustainable growth is not only the preservation of natural resources, but also the limitation of people's dependence on the nature, i.e. to ensure that people need less natural resources to meet their growing needs or that the

use of such resources is more effective, as appropriate. This also achieves the goal of the natural resources preservation.

Let us move to the terms inclusive growth and smart growth. OECD defines inclusive growth as⁵ “a growth that combines strong economic growth with improvements in living standards and outcomes that matter for people’s quality of life (e.g. good health, jobs and skills, clean environment, community support).” Ali and Hyun (2007, p. 1) write: “*Growth is defined as inclusive if it increases social opportunity function which depends on two factors: 1. average opportunities available at population; and 2. how opportunities are shared among population.*”. Generally speaking, the concept of inclusive growth emphasizes that the growth is beneficial to all people of the given society, where the growth takes place, and that if there are some population groups that do not profit from such growth, there should be instruments for including those groups within those that do. At the same time, the inclusion should not be in the form of redistribution, but by ensuring that those, who were previously excluded, will start contributing to economic growth through their activity, thereby increasing their income and ability to meet their needs.

The term “smart growth” is associated with the terms inclusive growth and sustainable growth and is mainly used within the context of the European Union. All three terms can be found in The Europe 2020 Strategy, where the following is mentioned: “The Europe 2020 Strategy⁶ is about delivering growth that is: smart, through more effective investments in education, research and innovation; sustainable, thanks to a decisive move towards a low-carbon economy; and inclusive, with a strong emphasis on job creation and poverty reduction.” The Strategy further declares that: “Smart growth means improving the EU’s performance in⁷:

- Education (encouraging people to learn, study and update their skills)
- Research/innovation (creating new products/services that generate growth and jobs and help address social challenges)
- Digital society (using information and communication technologies)

2. Characteristics of the sector of productive services

It is clear from the above mentioned that all three terms (sustainable growth, inclusive growth, and smart growth) are associated with investments in human and social capital. The definition of the term smart growth explicitly mentions investments *in education, research and innovation*. Sustainable growth may only exist if we can find such ways that would make it possible to meet our needs without limiting the needs of the future generations. We can agree with the opinion of Kim and Lee (1999) that such fulfillment of our needs is only possible as a result of advanced technology, which is only possible thanks to investments in human and social capital, with people gaining knowledge, skills, and capabilities in respect of such technology and its application in the society. The concept of *inclusive growth*, when the members of disadvantaged groups are included among people, whose activities contribute to economic growth, can only be implemented if the members of disadvantaged groups develop their skills and abilities, but first they have to receive knowledge on how to develop them. In this paper, we rely on the conviction that a lot of knowledge, skills, and capabilities

5 The definition is taken from <http://www.oecd.org/inclusive-growth/about.htm>.

6 The details about Europe 2020 Strategy are cited from http://ec.europa.eu/europe2020/index_en.htm.

7 EU targets for smart growth include: 1. Combined public and private investment levels to reach 3% of EU’s GDP as well as better conditions for R&D and Innovation. 2. 75% employment rate for women and men aged 20-64 by 2020 – achieved by getting more people into work, especially women, the young, older and low-skilled people, and legal migrants. 3. Better educational attainment, in particular: reducing school drop-out rates below 10% and at least 40% of 30-34-year-olds with third level education (or equivalent).

cannot be obtained and/or developed by people on their own. In such case, some people must exist that would assist with the obtaining and development thereof. These people may be parents and other relatives, neighbors, friends, as well as people working in specialized organizations that provide knowledge to their clients and develop their skills and capabilities. Schools, educational agencies, etc. are the typical example of such institutions. If we somewhat expand our view, such organizations may also comprise entities, the objective of which is to ensure that people maintain and are able to use their knowledge and skills, or to ensure that they are able to obtain and develop them for as long as possible throughout their life, as appropriate. This concerns, for example, medical facilities, spas, entities providing sport-related services, etc.

In general, entities that offer the acquisition, development, and preservation of knowledge, skills, and capabilities to their customers may be referred to as entities operating within the sector of productive services. Why did we choose this name? We believe there are the following reasons for this:

1. The production of this sector may lead to sharp and long-term increase in the productivity of labor employed within industry and personal services associated with industry. In other words, this sector offers services that make it possible to increase the productivity of human activity.
2. The production of this sector may lead to sharp and long-term increase in the productivity of all resources originating from land as the factor of production as well as resources in the form of capital goods in the area of industrial and agricultural production. Similarly as in the previous subsection, it holds true that the given sector offers services that make it possible to increase the productivity of human activity.
3. The sector may gradually employ the decisive quantity of labor or human capital, as appropriate.
4. The production of this sector may predominantly be applied within the sector itself. It also comprises the innovations' center of gravity.
5. The sector may significantly expand the range of people's needs. At the same time, this concerns needs that are more and more met by the production of the educational sector. The substance of such needs consists in the fact that the meeting thereof as well as the utility associated therewith, including the pleasure associated with such utility, immediately relates to the development and preservation of human capabilities. The given needs may then be referred to as the capability needs.
6. As a result of the above mentioned, this sector has a predominant share in the overall production and economic growth, the form of which is determined by the nature of its production (i.e. production, which is in the form of educational and other services aimed at the development and preservation of human capabilities).

In most subsections, we knowingly use the term “may” (e.g. “The production of this sector may lead to sharp and long-term increase in the productivity of labor employed within industry...”). The reason for doing this will be explained in Chapter 5. We believe the term sector of productive services is more precise than the normally used term knowledge society. The term sector of productive services is wider, encompassing not only the area of acquisition of knowledge, but also areas leading to their preservation (e.g. through medical and spa care, sports) and longest possible application (by extending the period, for which people can be economically active). At the same time, the term sector of productive services emphasizes that this sector offers production, which is aimed at increasing the productivity of other sectors. Since the production is most frequently in the form of services, the given word is emphasized. We should also note that the given characteristics of the sector of productive services are based on an analogical role, which was played by the industrial sector during the 18th and 19th

centuries, i.e. the period of the Industrial Revolution⁸. The following also applied for the industrial sector:

- The production of the sector led to sharp and long-term increase in the productivity of labor for people employed in agriculture.
- The production of the sector led to sharp and long-term increase in the productivity of all resources originating from land as the factor of production.
- The sector gradually employed the decisive quantity of labor.
- Industrial production is predominantly applied within the industrial sector; the sector also concentrates innovations.
- The sector significantly expanded the range of people's needs, which are more and more met by the industrial production – i.e. through products and services produced by industry.
- As a result of all the aforementioned factors, the industrial sector has a predominant share in the overall production and economic growth, the form of which is determined by the nature of the industrial production.

Economic effects, which come into being within the sector of productive services, take the form of accelerated professional fulfillment, better professional performance, development of productive fulfillment capabilities, and longer zenith and horizon of productivity in terms of its clients. In plain terms, customers of the sector of productive services are able to carry out more activities as a result of the services provided by the sector, whereas the given capabilities are obtained faster, given activities are performed more efficiently, and customers are able to perform at least some of the activities for a longer period of their lives. The productive services refer to services that make it possible to acquire, develop, preserve, and apply human capital. It concerns services such as education and healthcare, as well as relaxation, recreational, pedagogical, and cultural and other services. All these services may be included in the area of social investments and social insurance. Social investment refers to the provision of services, through which people acquire and develop their human capital or which are used to preserve it, as appropriate. Social insurance refers to any and all activities that protect people from the risk of losing human capital.

3. Sector of productive services and smart, sustainable, and inclusive growth

How does the sector of productive services contribute to sustainable growth, inclusive growth, and smart growth? We will start with sustainable growth. The production offered by the sector represents substitutes of other goods and services. However, such other goods and services have more significant adverse impact on the environment – e.g. due to the fact that they utilize more natural resources or their effects impact the environment more. In case productive services play a major role within the economy, then the consumption will burden the environment less, consequently contributing to sustainability. Reduction of the environmental impact of people may be described as a first-degree effect of the sector of productive services. However, the importance of this sector lies within the second-degree effect. It is based on the fact that the development of people's capabilities (i.e. not only of individuals, but on a team basis as well, as part of the social division of labor, as appropriate) is also immediately associated with their ability to innovate. In case people acquire, develop, and preserve their knowledge, skills, and capabilities, they are able to innovate. Consequently, they contribute to economic growth. Moreover, the ability to innovate retroactively affects the development of other knowledge, skills, and capabilities. As a result of acquiring, developing, and preserving the given capabilities, people that had been previously excluded from the

⁸ For detailed characteristics of the Industrial Revolution, see e.g. Watt (2009).

opportunity may participate in economic growth. Therefore, such growth may be referred to as inclusive growth. *Due to its nature, it may also be referred to as smart growth. The ability to innovate also relates to the sustainable aspect of the growth. As a result of innovations, we are able to reduce (even significantly or even radically in many cases) the quantity of natural resources per single unit of utility.* In other words, the sector of productive services increases the level of productive human capabilities, which immediately determine how quickly and to what extent economic growth becomes independent on natural resources, i.e. to what extent the environmental burden and impairment are reduced. The resulting effect of reduced consumption of material or energy inputs per single unit of useful effect immediately depends on the technical and technological progress; such progress then depends on the level of productive human capabilities, whereas the level of productive human capabilities depends on the effectiveness of productive services that aim the acquisition, preservation, and application of human capabilities.

4. The essence of transferred price

In case it is possible to attain sustainable, inclusive, and smart growth through the sector of productive services, it is worth asking why such growth is not taking place. To answer this question, we will formulate a thesis that the transition to the economy of productive services requires the involvement of entities operating within the sector of productive services to ensure that their clients truly acquire, develop, preserve, and apply their human capital and that other clients have sufficient income and utility from such capital. In case an entity operating within the sector of productive services is motivated to develop its clients' capabilities to ensure that they maximize their income or utility, this sector will develop and may actually become the dominant economic sector. Therefore, we call for the creation of feedback between the effects of productive services and the financing of entities that provide the productive services.

Investments aimed at acquiring, developing, or preserving human capital meet the general characteristics of investments in many parameters. The given entity invests in the capital, because it assumes the given investment will generate returns. Some entities may have budget constraints – i.e. they may not have sufficient funds for the given investment. In such case, they may look for someone willing to lend funds to them to cover the investment. As already noted by Friedman (1955 and 1962), a lender that provides funds to a borrower for investments in human capital is disadvantaged compared to a lender that provides funds to a borrower for investments in physical capital. Physical capital may be pledged in favor of the lender – i.e. in case an investment in such capital fails, the lender may recover at least some of the loan by selling or using the physical capital. Human capital cannot be pledged. From this perspective, investments in human capital are riskier than investments in physical capital; the guarantee of recovering an investment is lower. It may easily happen that a person with low budget constraints is unable to convince any lender about the profitability of his investment and will fail to acquire a loan. If his investment could have been successful, then not only the given person incurs a loss, losses are also incurred by the lenders, he could not convince, as well as by the entire society, because he cannot contribute with activities he would have been able to perform as a result of acquiring, developing, or preserving human capital.

Economic theory (e.g. Friedman 1962; Palacios Lleras 2004) proposed a solution to the given problem in the form of human capital contracts that mainly relate to investments in education. A Human Capital Contract (HCC) is a voluntary private contract between a student and an investor in which the student commits part of his future earnings to an investor for a fixed period of time in exchange for capital to finance his education. The main parameters for producing an HCC are the percentage of income and the repayment period. Because of its voluntary nature it works best when market forces determine the contract parameters. The

advantages of an HCC are that it decreases the risk of the investment for students by adjusting the payments they will have to make according to the amount they earn after completing their education. If a student's investment in education does not result in higher earnings afterwards, the payments required for financing the education are small. Conversely, if a student can earn a higher income after his education, the payments are much higher. On average, those students who can pay, because of the higher earnings they obtain as a result of their education, cover the costs of those who do not obtain higher earnings.

The significant characteristic of HCC is the fact that the contract uses the transferred price principle. The principle⁹ means that:

1. A lender provides funds to a borrower today as an investment in acquiring, developing, applying, and preserving the borrower's human and social capital.
2. The borrower only makes payments from the earnings generated from the funds provided by the lender and invested in a defined manner.
3. The borrower makes payments based on the amount generated from the funds provided by the lender.
4. The borrower makes payments directly to the person that provided the given funds (i.e. to the lender).

Briefly speaking, the borrower pays to the lender using his future earnings. It is a type of contract, which transfers the future earnings into the present – hence the name “transferred price”. The basic contract parameters are set down today; the given amount to be paid is transferred from the future. The borrower's payments to the lender take place in the future – provided the contract terms are met, i.e. the funds invested by the borrower in human and social capital actually start to generate such earnings for the borrower that he is able to repay his liabilities. Therefore, the borrower's payment to the lender depends on the borrower's future earnings. In case the borrower's earnings are too low, no payments are made. The amount of the earnings then determines the success of the borrower's investments in his human and social capital. The transferred price eliminates the borrower's budget constraints, making investments in human and social capital possible even for those entities that currently do not have sufficient funds. Moreover, the transferred price increases the number of entities that are involved in the borrower's success. It is no longer only the investor – currently acting as the borrower – but also his creditor. The creditor (lender) provided funds to the borrower and in case the borrower fails to repay such funds, the lender incurs a loss. In case an investor might, for various reasons (e.g. lack of information, his personal qualities, etc.), prefer investments in such structure of human and social capital that does not lead to successful investments, the lender shall also act as the borrower's corrector. Obviously, even the lender may be wrong. However, if there are several lenders or in case one lender has several borrowers, the pressure on the elimination of error further increases.

We must underline that the transferred price does not have to work solely in the area of investments in education, but in other areas as well – investments in health (e.g. with regard to medical, spa, and sports services), old-age security, etc. Therefore, we believe the transferred price principle is applicable in all situations where one person provides some goods and services (most frequently services) to another person, whereas the other person's earnings are, at least partially, determined by the quality of such services¹⁰. This is why we use the term “transferred price” and not “Human Capital Contract” throughout our paper. We believe that an HCC, i.e. contract relating to investments in human capital, is only one of the contracts

⁹ We believe the transferred price principle is the most important part of the Human Capital Contract. This is why we given this principle such significant attention.

¹⁰ The transferred price principle may be applied in purely commercial areas. For example, Valenčík (2014) mentions the compensation of tennis coaches from professional players, where the coaches' remuneration may be determined as a specific share from the players' earnings.

where the transferred price principle may be applied. In other words, we believe the transferred price principle is a universal principal, whereas an HCC is a specific contract that utilizes such principle. The transferred price differs from a “regular” price to some extent, specifically:

- Transferred price has more parameters: amount of earnings, from which payments start – payment amount set as a percentage, repayment period;
- Transferred price does not have a primary nominal value – its nominal valuation may only be determined on capital markets, on a secondary basis;
- Transferred price amount is derived from the valuation of the effect of services associated with the acquisition of human capital on professional markets.

5. How to use transferred price in sector of productive services

Economic theory (Valenčík and Budínský 2011) points out that in case the transferred price principle works on the basis of a three-way relation of the lender, borrower, and entity that provides productive services to the borrower, the lender is in a difficult situation. It is in his interest to monitor, whether the service provider really provides high-quality services, on the basis of which the borrower would get such human capital structure that would ensure the borrower’s earnings are sufficient to repay his debt to the lender. Nevertheless, such monitoring is quite costly for the lender, whereas he may not be sure, whether his ideas about the borrower’s investments are in fact met. This situation is referred to as information asymmetry (e.g. Akerlof 1970). In case the lender cannot eliminate such information asymmetry, he may not provide the funds to the borrower at all. Alternatively, the lender may request high interest rate during the period such funds are not being repaid or high share from the borrower’s future earnings. The given conditions may discourage some potential borrowers, particularly the low-risk ones, who may find the repayments unbearable. This situation leads to a vicious circle: the lender’s loans are only sought by high-risk borrowers with lower likelihood of success. In case lenders do not provide loans to risk-free clients that could cover the losses of high-risk clients, their demands will continue to increase, discouraging other lower-risk borrowers.

The situation discussed in the previous paragraph does actually occur in real life. The “My Rich Uncle” (MRU)¹¹ program offering loans to students in the USA covering their tuition fees and other costs of studying is one of the most remarkable examples. The company started its operation at the beginning of the 21st century, lending money covering the cost of university education directly to debtors (university students) at an annual rate of 7.85%. Borrowers had to return the principal and the interest over 10 to 15 years after the completion of their education. They had to pay a fixed rate of 0.1% to 0.4% of their gross annual income. Naturally, the owners of MRU did not have enough money to lend. MRU obtained funds from financial investors, who were not willing to continue financing MRU after the start of the financial crisis in 2008. As a result, the company filed for Section 7 US bankruptcy in February 2009 and suspended all its operations. The financial crisis was not the only problem that worried MRU. Even before the crisis its interest rate was higher than the rate of unsubsidized government loans. The company faced adverse selection: especially people who could not get government loans, i.e. people with a higher risk, were interested in borrowing from MRU. The delinquency rate of MRU clients was higher than the rate MRU investors were prepared to accept. The experience of MRU shows that the success of an HCC as a private market instrument depends heavily on the investors’ willingness to give money for an appropriate time. Credit failure is quite probable in the time discrepancy between the period

¹¹ The facts about MRU are taken from http://www.huffingtonpost.com/anya-kamenetz/myrichuncle-is-out-of-cas_b_165352.html and <http://collegesavings.about.com/b/2008/08/26/myrichunclecom-legit-lender-or-loan-shark.htm>.

that investors are willing to lend money for and the period in which borrowers pay their loans. This was the case with MRU: investors gave the company money for a shorter period than the borrowers needed – borrowers could start paying money back after finishing their education (leaving school). MRU had to revolve its financial resources and could not do so during the crisis because of insufficient resources to continue revolving.

However, the solution of the aforementioned does not have to be complicated. The only thing that needs to be done is to directly involve the providers of productive services in their customers' success. How? It is necessary to ensure that the providers receive some of their customers' earnings. Therefore, customers will pay for the productive services rendered by means of the transferred price, i.e. certain percentage of earnings generated by the productive services. The contract between a customer and a provider may also define other parameters, such as: a) moment (together with other conditions), from which a customer shall start his payments (e.g. a customer must reach certain income level); b) period, for which a customer is required to repay his debt; c) circumstances, under which it is possible to suspend or discontinue the repayments, including a situation where the customer's earnings drop below a certain threshold; d) whether the payment is calculated from the customer's total earnings or only their part (e.g. difference between the customer's earnings and a minimum wage), etc. Therefore, the transferred price concept we propose comprises the following:

1. Provider of productive services acts as the primary lender. The provider may be an educational institution, medical facility, spa resort, etc. We may even assume that if individual providers of productive services, who finance their services by means of transferred price, operate in different segments (e.g. one of them in education and another one in healthcare), they will start cooperating, because the earnings of one provider also depend – to some extent – on the services offered to customers by the other provider.
2. Buyer “pays” for the provided service scheme based on the benefits of the acquisition, development, application, or preservation of his capabilities through the productive services system – i.e. he pays certain amount (e.g. 3 to 5% of his earnings) from his earnings after the service is utilized and usually after some income threshold is exceeded (a multiple of statistically expressed average earnings) either for a predetermined period of time (10 to 15 years), which settles the obligation (irrespective of how much and when was actually paid), or until the full settlement of the debt (which may or may not be subject to interest).

In case the provider of product services is involved in the amount of earnings to be generated by his customers, whereas the amount of earnings is an effect of acquiring, developing or preserving human capital, as a result of which the customer has more and better capabilities, the provider will also try to provide the customer with such services that would develop and preserve his human capital and ensure the customer actually reaches the given income level. Naturally, some customers may fail to reach the given income level, thereby making no or only very low payments to the provider. However, in case the provider has many customers, the risk of the given loss (costs incurred by the provider in connection with providing the services to a customer) will be covered by the customers, who generate such earnings that would not only cover the provider's costs, including opportunity cost – i.e. including the provider's alternative returns, associated with the successful customers, but also the provider's costs associated with the unsuccessful ones. It is also necessary to underline the aspect of the long-term horizon. In case the provider of productive services receives returns from his customers for a relatively longer period of time, he will be committed to ensuring that the customers' knowledge, skills, and capabilities may be used for such prolonged period of time. This partly contributes to a long-term growth, and partly limits efforts aimed at short-

term profits that may have negative effects in the long-run¹². In case the customers of the productive services providers repay such services for a longer period of time using the transferred price, the following will happen:

- The given system allocates funds to the service providers associated with the acquisition of human capital, whose production is the most successful on professional markets. The providers' clients will logically prefer those providers, who will ensure the highest returns possible for them in respect of their investments.
- The given system "bridges" the specific "lender – borrower" relationship, which arises in connection with investments in human capabilities (e.g. a student / graduate, who "purchases" educational services and also acts as a borrower/debtor, and a university that acts as a "seller" and a lender/creditor simultaneously) and a capital market. This bridge consists in the fact that capital markets may be interested in purchasing contracts by and between customers and productive services providers – i.e. they may thus be subject to secondary valuation. In case the providers sell their receivables (even as a package of receivables) to capital market entities, they will receive the funds earlier. However, capital markets will only invest in contracts based on the transferred price, if they believe it might be beneficial. This will further promote the interest of the productive services providers in ensuring that their customers maximize their earnings, thereby maximizing the returns on the receivables of the providers from their customers, making them as attractive as possible for capital markets. The following applies in terms of the capital market entities: it is less costly to monitor a provider of productive services (one entity) than the provider's customers (many entities). It is easier for them to obtain information from the provider about the success of his customers. To some extent, this eliminates the problem of information asymmetry and the associated adverse selection problem¹³.
- In case the productive services providers are truly involved in the success of their customers, it is safe to expect the characteristics of the sector of productive services described in Chapter 2 will be fulfilled. In other words, it will no longer be necessary to use the term "may" (e.g. "The production of this sector may lead to sharp and long-term increase in the productivity of labor employed within industry..."), but the theory will describe actual events (e.g. "The production of this sector leads...").

6. Feedback of transferred price

The transferred price meets all the traditional price roles (e.g. Besanko and Braeutigam 2008), i.e. informational, allocation, and motivational role. The allocation and motivational roles consist in the fact that the provider of productive services is motivated to maximize the quality of its services in terms of its customer's success on professional markets, receiving financial funds based on the success of its customers on professional markets. The informational role is connected to the allocation and motivational roles: based on the earnings generated by the customers of the providers of productive services, these customers as well as other people interested in the given services get information about whether the given service

¹² As an example of such short-term profits with negative effects, we may refer to mortgage loan financing during the first decade of the 21st century in the US, where providers of such loans were – in terms of their short-term returns and profits – interested in providing as many loans as possible, even to people unable to repay such loans. This subsequently led to the mortgage loan crisis emerging and long-term negative effects.

¹³ It is necessary to emphasize that the problems associated with information asymmetry and adverse selection may be mitigated; however, not completely eliminated. These problems arise in respect of most human interactions, because individual participants do not have the same information in the vast majority of such interactions and to achieve the same level of information is too costly or even impossible. See e.g. Bowles (2004) for details. On the other hand, we are convinced that increasing human capabilities will make it possible to find solutions to the given problems, i.e. their effects will decrease.

is beneficial, to what extent is the given provider competitive in relation to other providers, etc. In terms of the informational role, it is also worth noting that the repayment of the customer's liabilities to a productive services provider may take place through a central registration system, which provides information to all system participants (in an anonymous and appropriately aggregated form) about the forecasted earnings for various productive services. It is safe to assume that successful providers will be interested in the establishment of such system, solely for the reason that it would be easier for them to generate funds from the capital market entities (in the above mentioned form of purchases of receivables of the productive services providers from their clients, or in the form of loans and investments made available by the capital market entities directly to the providers).

In terms of the standard roles of a price, the transferred price also provides feedback. It provides feedback not only to the productive services providers and to their customers, but also to third parties (e.g. capital market entities or other prospective/actual customers of productive services, existing and potential competitors, etc.). All entities learn about the profitability of investments in productive services, about the success of individual providers of such services. In terms of economic theory, the feedback falls in the area of microeconomics. It will allow optimal allocation of resources – productive services providers and their customers will invest in the services they believe to be most profitable for them according to the feedback¹⁴. Nevertheless, the feedback also has macroeconomic implications that contribute to the fact that the development of the given system, where productive services are provided, is in the form of sustainable growth, inclusive growth, and smart growth. Why is feedback necessary for attaining the given growth and why is the transferred price able to provide it?

1. Feedback is necessary for creating sufficiently motivating and competitive environment on the productive services market. The nature of productive services contributes to promoting competition. As a result of the services, economic activities may be performed by people, who would not be able to perform them or would only be able to perform them to a limited extent without such services given. Thanks to the capabilities, barriers to market entry are either eliminated or reduced for such people, leading to increasing production and reduced price. Naturally, the sector of productive services is also a market. In case entities operating on the given market receive feedback, they will be motivated to maximize the effectiveness of their activities, including environmentally friendly activities, activities that use minimum resources, are available to previously excluded population groups, etc. Aggregate activities of all entities operating within the sector of productive services will then generate smart, sustainable, and inclusive growth. Thanks to their impact on other sectors, with innovations generated through the sector of productive services contributing to growing productivity of such other sectors (see Chapter 2), the smart, sustainable, and inclusive growth may take place in all sectors – i.e. on the level of the entire economy.
2. The feedback is necessary to ensure that the provider of productive services, who significantly contributes to growth, can expand its activities similarly as innovations are disseminated in any productive area. Moreover, it is necessary for ensuring that the dissemination of innovations process eliminates ineffective entities from the given area or, as appropriate, that they are forced to switch to effective forms of activities in the area of services that enable the acquisition, preservation, or application of human capital (as in any well-functioning competitive environment. In case all or most entities are forced to operate effectively, where such terms comprises the reduction of the material intensity of inputs, involvement of other people, utilization of

¹⁴ Naturally, we assume that the productive services providers and their customers also consider other information, in addition to the feedback.

innovations, it is clear that the growth of the given community will meet the characteristics of smart, sustainable, and inclusive growth.

We must emphasize that, in addition to the traditional roles, the transferred price also has other roles that are not ensured by “normal” price. We have already discussed these roles, so in short:

1. Investment (credit) role: Each person has access to productive services, irrespectively of whether he/she does/does not have sufficient funds to pay for them;
2. Solidary-insurance role: More successful customers of the productive services providers pay more than the less successful ones (those, who fail, do not pay anything). This concerns certain solidarity of less and more successful (unsuccessful) customers, a method of preventing / diversifying the risk borne by the provider of educational services. However, such risk may be transferred to another entity through the capital market.

7. Discussion: Barriers to applying the transferred price mechanism and their elimination

Generally speaking, the necessary precondition to attaining smart, sustainable, and inclusive growth is the development of the productive services sector (as we defined the sector), whereas the way for ensuring this sector becomes the dominant economic sector is to allow the payment for services offered by the sector through the transferred price mechanism. If this is the case, why do not various entities operating within the sector start using the transferred price mechanism on their own? After all, the implementation of the mechanism is an innovation. In case the given innovation is prospective, individual entities should be motivated to use it. Why is it not the case? Standard objections to the transferred price mechanism are roughly as follows:

1. Effects generated by productive service customers will be reflected in their earnings in a long period of time. This weakens the ties between the services and the relevant earnings. Moreover, in case of a prolonged repayment of the given debt of the customer to the provider of productive services, the provider of such services will recover its costs and generate its profit a long time after the provision thereof. Immediate benefits are not clear; providers are exposed to a number of risks (they may lose client’s contacts, have problems with corroborating the amount of earnings – i.e. whether a client is/is not required to pay, etc.). All this causes the providers of productive services to opt for standard forms of financing their activities (directly or in the near future).
2. The amount of client’s earnings results from a number of factors. The fact a client was a customer of a productive service, contributes to the amount; however, it is not the only factor. It is difficult to estimate the impact of each factor, including the productive services, in advance. The impact of productive services may easily be overestimated or underestimated, which will be reflected in the transferred price parameters (contract duration, payment amount, minimum income amount – with clients not paying anything if the threshold is not reached, definition of the amount, from which clients make payments, etc.). Clients, for whom the impact of productive services was overestimated, will pay too much, thereby reducing their interest in productive services. On the other hand, clients, for whom the impact of productive services was underestimated, will pay too little, with the productive services providers not being able to cover their costs. Therefore, the easiest way is for clients to pay right away. In this case, the price may be determined based on the costs associated with the service, which at least reduces the risk of the service providers.

3. In case the productive services customers generate higher earnings in the future, and such increase is not related to the productive services, it seems unfair for those customers to pay anything from the given earnings to the service providers. Customers may try to conceal the given earnings or to ensure their payments are made in a way that prevents the need to pay the relevant share to service providers. This is associated with high transaction costs. Some customers may not even accept the higher earnings, including a situation, where they do not start performing activities that are directly associated with higher earnings. All this has negative microeconomic and macroeconomic implications, including an impact on economic growth.
4. Future repayments require high-quality monitoring system to limit the motivation of the productive services customers to hide their earnings. Moreover, it is necessary to ensure an effective debt collection system in respect of the providers' receivables from their customers. All this is difficult and costly. It is not clear whether the costs associated with the aforementioned would not outweigh the benefits. Some objections may also be ideological. Let us at least mention two of those:
5. The application of the transferred price would result in an increased role of the market in areas that are traditionally viewed as areas ensuring public goods, providing positive externalities that contribute to the socialization of people, ensure interpersonal solidarity, raise individuals to citizenship, their involvement within the society, etc. This increased role of the market will lead to further moral devastation of the given segments, which have already been stigmatized by substantial commercialization and cease to serve their original purpose. As a result of such commercialization, some entities are already unable to consume public goods and goods and services with positive externalities, because of the barriers arising from the commercialization. Further promotion of the given market role will result in a rising number of such people.
6. The proposed model works with the idea that people are able to think long-term and can be motivated by long-term expectations. This is not the case in reality. Most people prefer immediate benefits to long-term ones. After all, even economic theory (e.g. Perloff 2008) clearly states that the value of present goods and services is higher than the value of future goods and services. It is difficult for people to image all the potential benefits of investments in their human and social capital. The effect of such investments is too long to be comprehensible for people.

We believe that most objections may be resolved - both the practical ones (points 1 through 4 of this Chapter) and the more or less ideological ones (pointns 5 through 6 of this Chapter). It is obviously true that customers will only start repaying the costs associated with the provision of productive services after some period of time and may be repaying for a relatively long period of time. However, there are other areas, where investments generate returns after the completion of the given investments, with a longer period of time from the moment they start to generate returns until the full settlement of all investment costs (including opportunity cost). There are various experiences with long-term repayments and mechanisms for addressing them. With regard to an objection that debtors usually have some assets that may be pledged in favor of their creditors in case of these forms of investments (as mentioned above in Chapter 4) and that this is not true for investments in human capital, we can answer that even though it is not possible to pledge the human capital of a debtor (borrower), it does not mean that a debtor does not have or will not acquire after the conclusion of the transferred price contract other assets that could be pledged in favor of the creditor. The method of monitoring and other issues relating to the debtor's earnings may also be addressed in a repayment contract. With regard to the contract parameters aimed at ensuring that debtors do not pay either too much or too little, as well as potential repayments

from earnings that do not result from investments in human capital, it is safe to assume that the invention of people will seek answers to the given issues. Realistically speaking, we can assume that the transferred price principle will start evolving gradually. For example, the providers of productive services will ask for a partial payment in the standard manner – i.e. at the moment the services are provided, whereas the remaining amount will be paid in the form of transferred price. The providers and customers will gradually learn how to value effects of the given service, distinguish the effects resulting/not resulting from the given service, and this will be reflected in the contract parameters.

The ideological objections may also be addressed. With regard to the fourth objection relating to the expansion of the market to areas previously reserved for the public sector, it applies that the role of the public sector is to eliminate imperfections of the market mechanism and provide goods and services the market cannot provide, or provides them in a non-optimal manner (produces more/less than the market optimum). The public sector is not set down forever. If, as a result of human invention, it is possible to expand the market to areas that were previously associated with market failures, if it is possible to eliminate or mitigate such market failures, then there is nothing wrong about this. After all, the market is gaining ground in other areas that were previously viewed as the public sector domain, whereas such progress is possible as a result of human invention. The financing of highway construction, previously viewed as the public goods, in the form of toll collection or public private partnership projects is a good example. Logically, even the area of productive services need not be predominantly or largely ensured by the public sector, but they may also be provided on the basis of the market mechanism.

With regard to the fifth objection that the nature of the transferred price promotes the tendency to long-term thinking of people: People react to incentives and in case such incentives (also include the transferred price) motivate them to long-term thinking they will start to act in such manner (or at least some of them). The long-term thinking is also associated with an attribute of responsibility – people, who tend to think in a long-term horizon, do not consider solely immediate (or short-term) effects of their thinking that may have negative consequences in the long run, but they also take into account wider implications of their actions. The fact that the transferred price works with a long-term horizon is not its flaw, but actually its benefit. We may, at the same time, express a hypothesis that our current global society (i.e. not sometimes in the future, but in the present) needs to extend the time horizon we take into account in our decision-making process. We need this to learn, from an early age, how to project a lifelong path of professional fulfillment and anything that is associated with it. The transferred price principle thus comprises not only a rational element, but also an ethical one. In this case, the ethical element is not an external precondition, but something that originates and will increase in importance proportionally to the increasing role of productive services. In other words: The ethical dimension of the problem area is not exogenous, but rather endogenous element. In terms of the game theory, the following applies: The ethical dimension is not a mere precondition to the game, but mainly its outcome¹⁵.

Therefore, if the above mentioned and usually given objections to the transferred price application are not the most important ones, which in fact are? We believe it is the currently limited competition in many parts of the sector of productive services. Areas such as university education, healthcare, spa sector, etc. are subject to strict regulation, with barriers to enter these sectors. Let us, for now, disregard the fact that some regulation makes sense to

¹⁵ We must underline that, in our view, the given fact (The ethical dimension of the problem area is not exogenous, but rather endogenous element. The ethical dimension is not a mere precondition to the game, but mainly its outcome.) generally applies to all forms of human behavior. Therefore, it is not specific to transferred price. Detailed analysis exceeds the scope of this paper. For details, see Graafland (2007), for example.

prevent risks to life or health of customers within the sector, to ensure at least minimum quality of the offered services. The public choice theory (e.g. Buchanan and Tullock 1999) points out that regulation may also serve in favor of the regulated entity – it may be set up in a way that limits (and sometimes even eliminates) competition of the regulated entity¹⁶. In such case, the regulated entities do not have to make such efforts to generate their profits. Moreover, the existing system insufficiently discloses, whether the services provided by such entities in fact have the required quality. Since customers pay at the moment a service is provided (if they pay at all, i.e. unless the costs of providers of productive services are covered from public budgets), there is no feedback that would clearly reveal/disclose the quality. The existing system is beneficial for existing providers; the application of the transferred price principle – even to a limited extent – would impair such benefits – this is why they prevent it¹⁷. Economically speaking, many providers of productive services operate in oligopolistic segments with low competition. Barriers to market entry are significant – i.e. the providers' earnings and profits are guaranteed.

Some providers may introduce the transferred price principle, in spite of the above mentioned, and agree that customers would pay for the services using their future earnings. At first glance, it should be beneficial for the provider: customers do not have to pay right away, but payments are postponed until they have money or until it is clear, whether the provision of the services was in fact meaningful, as appropriate. However, if this provider operates within a regulated industry, where some providers receive state support and are not forced to offer their services at market prices, it is disadvantaged. The services of such provider are mainly sought by clients, who are not – for any reason – eligible for the state-subsidized services. This usually involves high-risk clients. The example of the company My Rich Uncle mentioned in Chapter 5 is quite expressive. It clearly shows why most providers of productive services do not apply the transferred price principle. Their risk would increase, similarly as the likelihood of bankruptcy.

We believe that current regulated systems also fail to stimulate long-term thinking, create barriers to monitoring the customers' earnings and to assessing the contribution of productive services to such earnings. In case the customers' earnings are at least partially, often even indirectly, regulated, it blurs the relationship of the income level and productive services. This relationship becomes unclear, in case there are significant redistributions within a society, where earnings of some people are withdrawn *ex officio* and attributed to others. In this case, the income level also depends on different factors than the quality and success of productive services. Existing states, where the share of taxes or public expenditure in GDP, as appropriate, often exceeds 40%, may be described as societies with significant redistribution. This is only the visible part of redistribution. Further redistribution takes place, as some people have various privileges (e.g. are able to meet terms and conditions for receiving investment incentives, financial incentives for doing business in various segments) and other people do not. Both the existence and nonexistence of such privileges affects the performance and consequently remuneration of individual people.

In general, regulations prevent qualified estimates in respect of future development of earnings for a person that has used some productive services. As a result of the regulation, earnings may greatly depend on the regulation parameters and not on the quality of such

¹⁶ In this context, we should recall the conclusion of the public choice theory (Stigler 1971) that regulated entities are often able to gain control of the regulator and set up regulation to reflect their own interests.

¹⁷ For instance public universities in the Czech Republic, whose financing heavily depends on public budget, opposed a suggestion to establish deferred tuition although it could increase their revenue, and tuition was not established. The tuition could assist in revealing the quality of the public universities' services and such revelation was not in the interest of public universities. For example, see Wawrosz and Heissler (2012) for details.

productive service. Moreover, regulation may change – they reflect political cycles and other aspects of public choice¹⁸. Therefore, even if earnings of a person / recipient of productive services are, due to regulation, currently at a level that makes it possible to make payments to the service provider, this may not be the case after potential regulatory change. We believe the current environment is too risky, erratic, and unstable for the application of transferred price. For this reason, the given method of financing is only applied minimally. However, it results in a lower involvement of providers of productive services in the quality of such services as well as the fact that there are some people, who cannot pay for the services directly due to their existing budget constraints and will not ultimately purchase them. It further leads to insufficient level of economic growth, whereas such growth does not meet the required parameters to be referred to as smart, sustainable, and inclusive growth.

Naturally, we cannot rule out that the financing of productive services through the transferred price principle will win competition even in present condition and that the sector of productive services will actually start having a dominant role within individual countries' economies (expressed as a share of the sector in GDP, for example). However, unless the barriers to entry into the markets of productive services are reduced, such development will be difficult and subject to a longer period of time. Moreover, the principle may also be applied through undesired actions, where the current sources of growth are exhausted and where entities, whose income declines as a result of such exhaustion, will start to protest and perform other undesired actions. Therefore, we believe it is already worthwhile to eliminate various barriers to entry into markets of productive services. This is the only way we can, in our view, at least partially meet the goals of the *Europe 2020 Strategy*, i.e. *delivering growth that is smart, sustainable, and inclusive*.

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¹⁸ See e.g. Sobel et al (2001) for details.

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Abstract

Ethics is a part of human behaviour in a social context. It is a factor of social behaviour that translates into economic and business activities. In the same way the ethic can be perceived in academic environment. Due to massive use of modern technologies, globalization has changed the business systems and this development has impacted on human behaviour and it is altering all: moral values, ideals and attitudes.

This paper aspires to find answers to question “what aspects of ethical behaviour are currently taught at Universities and business schools.” Ethics of teaching and learning is one of the objectives of the 20th century. Violations of academic ethics on the part of researchers and teachers also assume providing an illegal design to students and novice researchers.

Ethical principles should help a person in conflict situations to decide for an ethical option. Academics are subject to complex pressures arising under the internal tensions and external expectations. In the Czech Republic the Assembly of Academic Sciences received the Government Resolution on the ethical framework of research in the 2005. This represents the researcher’s Code of Ethics in the Czech Republic. In modern applied ethics there exist basic principles by which it is possible to approach ethical dilemmas. Each option is based on the different traditions of philosophical framework.

Each possible approach is relatively simple to apply, but at the same time it significantly differs in its impact and it is stemming from different principles: (1) the result is important, (2) compliance with rules and regulations is important, (3) compromise between the two options is the best. Respect to ethical principles in business also creates fair conditions of economic competition, and that has a positive impact on the achieved economic results.

Keywords: *Ethics, business schools, ethical dilemma, code of ethics, teaching ethics*

JEL Codes: A12, A13, Z1

Ethical behaviour is permanently developing not only in business but also in education, especially at Universities. Ethics is a part of philosophy and it has been around since 2 500 years ago. At that time, the ancient philosophers were trying to find answers to questions of ethics and they highlighted mainly human virtues. Ethical behaviour can be based on the notion of maximizing benefit and minimizing damage. Ethical behaviour is also inspired by behavioural standards of duty and morality. An unethical or unfair behaviour may bring short-term gains to the enterprise, but in the long run such behaviour will damage the mutual consistency of all corporate participants (stakeholders). Ethics deals with human behaviour and with moral values, ideals and attitudes. It also analyses what is good for individual and for society. Ethical theory elaborates on a set of principles of human behaviour. The basic question of our paper is: *What aspects of ethical behaviour are currently taught at Universities and business schools?*

1. Introduction: The relationship between ethics and business

One of the basic questions of business ethics is the question of the compatibility of ethics and business. The central point of the definition in discussions about the relationship between business and ethics (morality) is the individual and social responsibility. On the very general level there is a consensus that it is such behaviour when one can justify own actions and stand up for them in front of himself/herself and in front of the others. In business, manager, employees and owners have to solve various often ambiguous situations, where the integral part is an **ethical dilemma**.

The purpose and use of learning ethics

Managers often ask a question whether it is nowadays necessary for them to deal with ethics. Managers and working practitioners often hear that ethics is useless. Managers basically have three reasons for this attitude. They simply state that their basic aim in an organization is to generate a profit. However, at the same time managers also admit that profit should be

reached legally. But even this attitude still does not explain why managers should be concerned with the ethics.

Managers are aware of the need to behave ethically. But in their understanding the ethics assumes only **an obligation to generate profit in a legal way**. Managers do not see the need to understand **ethics in the broad sense of the word**. According to them there is no need for further education in ethics. Managers need to understand finance and law and the processes how to conduct a good business.

Currently, the prevailing opinion is that business activity contains decisions on economic and technical processes (production, sales, marketing, etc.). However, almost every business decision entails also some ethical elements. Thus, when managers ask, why they should behave ethically, they are actually asking another question. What is the **motivation** for managers to maintain good and ethical behaviour? Is there anything positive for them? **Any reward?**

Regarding the motivation for ethical behaviour: good and ethical behaviour does often bring a reward, but not always. If the good has always been a commodity of high interest, we would not need to study business ethics. We could simply be selfish and forget about responsibilities. People have invented ethics precisely because human behaviour is not always associated with their own **self-interest**.

2. Ethical problems at University environment

In terms of academic ethics it is important to realize, that the university ethics involves management of issues by concrete human individuals. Ethical issues at university concern the terms of ethical management, finding the best sources for the university. In addition, each employee of the University is responsible for further development of the reputation of his/her particular university. An important feature that, current and previous employees have gained through their working effort and responsibilities of previous generations of scientists and teachers of the university.

Ethics of teaching and learning is one of the objectives of the 20th century. It is an academic tradition in public universities and universities to provide free education (Brown & Krager, 1985). Free education calls for a discussion of values and morals. Research on ethical responsibilities at universities covers faculties of education across all fields, e.g. Baumgarten, 1982; Brown & Krager, 1985; Callahan, 1982; Deutsch, 1979; Dill, 1982; Hook, Kurtz, & Todorov, 1977; Schurr, 1982; Scriven, 1982; Wilson, 1982.

Callahan (1982) in his research of pedagogical activities analysed a number of ethical problems at universities, such as abuse of students, tolerating cheating and plagiarism of students, irresponsibility in teaching uninterested students, consulting activities against obligations to school, teachers and students to use education to indoctrinate students with teacher's with favourite topics or failure of teachers in feeling responsibility towards the wider society. Callahan (1982) in his paper cited harsh words from former vice president of CBS Television Charles Steinberg, who in 1972 expressed the view that in the academic environment, ethics and responsibilities are perceived only academically, and that academics actually behave like in the jungle. While the academic jungle, according to Steinberg worse than the natural, because there is no killing in the interest of physical survival, but it is often and unfair completion of cruel ambitions.

Violations of academic ethics on the part of researchers and teachers also assume providing an illegal design to students and novice researchers. Such a negative example is provided also if it ignores the unethical behaviour of teachers, or if there is a gain of the scientific or pedagogical rank of someone who has behaved unethically. The media are full with encounters highlighting teachers' plagiarism and unauthorized use of degrees of public officials. On the part of students there is a relatively widespread cheating.

According to Griljava, Nowell and Kerkvlieta (2006) students are cheating across all cultures and disciplines. Students exploit the Internet for cheating and they can be seen on both the high and secondary schools. McCabe (in Mangan (2009)) based on extensive research found that in the USA the most widespread cheating exists in schools that focus on training managers (MBA programs), of which up to 56% admitted that in the last year at least once cheated. Just behind them follow American students of communication. Cases of cheating include e.g. Copying, copying from the internet and unlawful assistance to another student. Preiss, Nohavova, Stuchlikova (2013) specialized in student cheating in the Czech Republic. The authors specialised in honesty and various types of cheating analyzing the work and related social and economic factors. A mare (2005) deals with cheating of students by electronic means, the types of cheating, explains the terminology and describes the detection possibilities of electronic cheating.

3. Causes and origin of ethical issues

Academic ethics also deals with the possibilities of emerging causes of ethical problems not only in terms of academics, but also in terms of students. Reasons for the origin of academic ethics and violations by academics arise when academics come under more pressure and should decide for some kind of behaviour as a response to these pressures (Callahan, 1982). Ethical principles should help a person in conflicting situations to decide for an ethical option. Academics are subject to complex pressures arising under the internal tensions and external expectations. Traditional mechanisms for identifying and addressing ethical issues arising under this pressure are no longer sufficient. The dilemma does not put in conflict a decision between a good and bad behaviour, but it is about should giving priority to one reasonably good option before the second one (Callahan, 1982). The example is the requirement for a teacher at the university to teach a number of students who are satisfied with his work, and at the same time to produce quality research activities and publish scholarly articles. Furthermore, the senior academic it should help colleagues at the university while working in his qualification process.

Similar problems can be seen in the academic environment. One of them is the number of evaluable results in so called RIV19 which is an important criterion for allocating financial funds for Czech universities. This often leads to crediting colleagues as co-authors, requests for a quote, and to recycling result – self-plagiarism. Academics who decide to focus mainly on teaching and helping students to understand the problems, and who create a high quality and interesting study materials, provide individual consultations to students are in the end getting bad signals from their immediate superiors, because they do not bring to their institutions "points for scientific activity" and are therefore useless.

Violations of ethics from students have multiple causes. One is that students feel that the process is less important than the result. The final degree is good no matter how it was achieved. Minor fraud can be tolerated (Mangan, 2009). A motive for cheating can also be unattractive assignment and assumption that evaluation work is unimpressive even for the teacher evaluation (McCabe, Pavela, 2004). Another instance, when student resorts to fraud is, when the student is not interested in the subject of study and he/she only wants to gain the diploma. The violation of ethical principles also lead the students if they see that cheating is tolerated in their university, and that some of their classmates have gained a good evaluation by fraud. Deception can be occurred also because students are not familiar with how to avoid cheating e.g. they do not know what plagiarism is and if they are not instructed in these matters. They are not explained, why they should not do not cheat, if their study should bring the expected benefits. Student cheating are caused by bad habits of their high school. It can be

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summarized, that the causes of problems of the lack of student ethics at universities are similar in all countries.

4. Code of Ethics at Universities

Ethical codes of universities in the USA have a long history. In 1991 the International Center for Academic Integrity (ICAI) was founded to facilitate collaboration on the methods of combating cheating, plagiarism and academic dishonesty in higher education. The Center was involved with cultivating a culture of integrity in the academic community worldwide. One of the main topics discussed was the controversy over the importance and the form and content of ethical codes of individual universities. Opinions on the necessity of such a document are indeed different and range from necessity to uselessness.

Author Daniel Callahan (1982) has opinion is midway between supporters and opponents of the Code of Ethics for academics. The first problem was the fact that the codes almost never help solving ethical problems. They either just help to formulate the best practices for a given profession, or worse, they helped professionals to create the appropriate profession shield to the public, enabling professionals to do what they want. The second problem is to formulate a universally accepted and adequate Code of Ethics usable for the profession useable Code of Ethics. Callahan (1982) suggests only two options: The first is that the Code of Ethics will very be comprehensive and it will contain only the basic principles upon which to lead everyone to agree. Such a code will not solve anything on its own. The second possibility is that the code tries to capture all the rights and obligations of members of the academic community. Then it would result in a very complicated document that it would not be implementable.

In the 2005 the Assembly of Academic Sciences of the Czech Republic received the Government Resolution on ethical framework of research. This represents the researcher's Code of Ethics in the Czech Republic. This sample was then followed at many universities by sample Code of Ethics for academic employees at universities, approved by the Assembly of Higher Education Council in 2007. Subsequently the Ethical codes of individual public universities were created. The approach to creation of these codes at different universities widely varies. Some universities have literally transposed the sample code of ethics in their organization whilst some universities have not adopted any code of ethics. Yet another group of institutions have developed and adopted their own codes, often inspired by foreign models. These codes are generally available on websites of individual universities. In connection with the adoption of codes of conduct at various universities there often arises a question: *Why is it beneficial to each college to formulate own Code of Ethics?*

The purpose and objective of the Code of Ethics is to express in this regard universities as attitudes towards the public, and especially to the academic community – teachers, scientific workers and students, as regards compliance with certain principles and ethical attitudes in a spiritual environment of universities.

Adopted ethical codes differ from each other by their legal meaning (Telec, 2010). Sometimes the code of ethic is a part of statute of the university. This is the most important legally because the statute is legally binding for both students and academics, elsewhere it is only a moral liability, but that would be reflected in the labour requirements for each regular output of university academic work.

5. Ethical Dilemmas and solutions

In ethics there exist basic principles by which it is possible to approach ethical dilemmas. Each option is based on the different traditions of philosophical framework. Each possibility is relatively easy to apply. It significantly differs in its consequences and it is managed by different principles:

- a) The result is important,
- b) The regulatory compliance is important,
- c) The middle way compromise is the best.

a) Decisive is the result

This principle from a philosophical point of view is based on **utilitarianism**. According to this approach, it is an *ethical decision, the result of which is the most good for the most number of people*. It is however not possible in each situation to know exactly which would be such a solution. Therefore, it is necessary to consider and think about what kind of results would bring to that solution. According to this principle, if the results of this meeting are correct, then we are doing the right thing. For example, in the case of an entrepreneur who decides to give small bribes in order to continue to "give" the work of his employees.

b) Decisive are rules

This approach is based on **Kant's Categorical Imperative**, according to which "*everyone should be held morally so that his manage could become a universal rule.*"²⁰ For Kant, the result does not important, but the motives and rules of certain practices. According to this principle would be representative of the firm Alistar announce the bribery because it contradicts the rules of honesty and morality. Also, he would have tried to avoid it, even at the cost that this action could threaten the distribution of medical supplies. Entrepreneur, according to this approach, refused to give bribe, even at the cost that would have gone bankrupt and had to lay off their employees.

c) The middle way is the best

Some businessmen, however, may seem an approach that takes into account the result of too pragmatic. On the contrary, the approach emphasizing respect for rules may be perceived as not reflecting the outcome of their discussions. This rule requires that an individual empathize with the position of someone else, which affects his decision.

These three rules, however, do not represent a universal solution to all moral dilemmas. They show only the tool, how they can be accessed. Individuals have to consider themselves which of the alternatives to choose and which ethically more adequate and better conclusion to accept. Different situations require different application of principles. Business and daily life are similar in that they work with people. Therefore, as in life, even when business should ask question *what we should maintain with respect to others?* The decision will be always individual and depends on professional and **moral behaviour** of the decision makers. But the rules (formal and informal) have considerable influence on decision-making.

6. Formal and informal rules and moral attitude of managers

Decisions of managers are significantly influenced by the environment in which they work. The rules of the game, the institution in terms of institutional economics, we understand as restrict that regulate interpersonal interaction, relationships and they are give some form of economic, political, social and other phenomena and situations in society.

Formal institutions

Formal institutions have rules in the form of laws and other standards regulating, or restrict the activities of individuals and organizations. It is a formal, explicit, codified rule of behaviour. They represent "hard consensus", which is managed by the company given time unambiguous agree.

²⁰ ANZENBACHER, A.: *Úvod do etiky*, Praha: Academia, 2001, s. 60.

Informal institutions

Informal institutions mainly relate to the conventions and standards of personal honesty. This is called. *Informal rules* (patterns of behaviour, respected values, customs, traditions, culture, ethics), which are based on internal understanding and acknowledgment of certain values by actors whose benefit they believe the company itself, and therefore apply and develop.

It is not always appropriate to have everything in the company "hard" regulated because it can restrict the freedom of choice of companies and it can also be quite costly system, moreover, it is very difficult to squeeze diverse economic realities in clear and unambiguous rules.

Therefore it is so important to have informal rules which they act as sole regulating mechanism. If the informal rules are based on morality, it often brings economic benefits as well.

Experience shows that companies with well-developed social capital generally achieve even better economic results, because they can take advantage of the initiative, motivated individual organizations while significantly reducing transaction costs. Furthermore, it is increasing predictability management, easier to manage relationships within the so-called. Incomplete contracts (*contract theory*). For cooperation between companies is significant confidence, i.e. social capital.

E.g. countries with low levels of corruption can achieve greater efficiency in public procurement, as they can provide public sector workers with greater flexibility, relying on their correct behaviour. Conversely, countries where this does not apply, must have more detailed rules on public procurement in order to cover the widest possible spectrum of possible situations, but this makes the system less flexible. Such countries are working with relatively high costs, and therefore less effective.

The respect to ethical principles in business also creates fair conditions of competition, which in turn has a positive impact on the economic results achieved. *E.g. if procurement firms receive the best offer and not those that are to finalize them through corrupt behaviour, are not only saving public funds, but it does mean that grow naturally firms that are more efficient.*

The question here is again the moral equipment makers who decide on the contracts, because individual bid will not have the same or comparable parameters, which could easily be compared to grade and then **a clear decision.**

7. Conclusion

This paper we dealt with the question "what aspects of ethical behaviour are currently taught at Universities and business schools." This question as well as "general" problem of moral dilemma may be the subject of another discussion about what should actually be taught at universities of business type. We have found that ethical dilemma can be approached from three different ways.

The requirements in academic environment put an increasing emphasis on the quality of university education. The current environment is rather complex for correct ethical behaviour and honesty of academics, because their decision depends on other activities in academic environment. It is the quality of teaching students that can be compromised, while publishing quality scholarly articles must be maintained at the same time.

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Sergey I. Kretov: Human Capital in the Deep Ecology Paradigm

Several thousand years passed and nobody, but Confucy gave the most overwhelming and precise characteristics for Human being of the Future. Till now his "noble man" may be regarded as the goal looked for by the whole educational and training system for a new generation.

The frameworks of this presentation do not allow to open up all details of the thesis declared in the first paragraph. We shall specify only several parameters of the "noble man" category as an ideal materialization of the abstract scientific term "human capital" and absolute target for educational and training system.

In Confucy's era, apart from many existing till now positive and negative human qualities, an important one was aristocratism. Intellectual-aristocrat radically differs from intellectual-liberal because the former was free from thoughts about personal material consequences while researching any problem, decision making and taking responsibility for it. Aristocrat moral self-appraisal was prosperity of compatriots influenced by his decision and his own reputation among the people. Translating this thesis into the modern language of cybernetic epistemology, one can declare that undisputable values for noble man, intellectual-aristocrat was the principle "the gain for the society ruling subsystem is the gain for the society guided subsystem".

Can we see something similar in modern intellectual-liberals' behavior? No. The most vivid illustration of this contradiction is the comparison of public speeches delivered by Czech President V. Klaus, who, in the modern history, managed to approach as close as possible to the title of "noble man" and by his antipode Barack Obama. The latter is not only constantly demonstrating his bad plebeian behavior, cynicism, neglect to the people, peoples and states, but publicly puts on air his "new barbarism" as the top achievement of American democracy. At that, one has to underline that this is not the guilt of Obama and majority of modern high-ranking representatives of the main "developed" countries-debtors, but their misfortune, because modern educational system, stuck in cultivating egoistic and greedy individuals for the needs of capitalitarian model of human society, does not have even the most general comprehension about such necessary quality of any noble man.

Scientific analyses of the current situation using the cybernetic epistemology (complexity theory) methodology requires introduction of new categories. We all remember recent interest in class theory of society construction, the remnants of which one can still notice in some marginal Marxist publications. However such primitive and ideological approach to complex dissipative system of society can only lead to the revolution, bloody and ruthless. Scientific analyses and complexity theory^{21[i]}^{22[ii]} allow to split any system into two obligatory subsystems: the Ruling Subsystem (further-RS) and the Guided one (further-GS). RS is ruling until it becomes inadmissibly much too simple in comparison with complexity of GS. In such case machinery and instruments will go off in technical systems. In living ones, the substitution of biological species happens in the form of natural evolution. In human society the historical change of socio-economic formations takes place.

The best historical illustration to prove the point is the USSR destiny. If one regards the events which took place in USSR-Russia in the past 40-50 years, interesting historical phenomena will be discovered. The reforms in the USSR were begun because its RS kept on becoming more and more primitive, while its economy and society objectively reached unprecedented complexity. In other words organized, complicated and well educated society and multilevel diversified economy of the USSR was resistant to the total directive regulation and imposing of primitive will of the ageing minority - RS. GS of soviet society reached out

^{22[ii]}The essence of "complexity system" category is defined by 3 interdependent components of the pattern of organization. These are synergy, autopoiesis and recurrence.

of the RS control of Politbureau and the CPSU Central Committee which broke about the collapse of the State. It happened so catastrophically rapidly due to the fact that process of RS reformation was accelerated by both inside and outside "help".

In the trouble waters of so called reforms, the new Russian RS was formed from even less professional, interested in personal enrichment and, the most important, socially irresponsible characters. It meant, it became even more primitive in comparison with soviet epoch. So called Russian reform actors and their numerous advisors from foreign intelligence services²³[iii] felt it and therefore quickly began to solve the problem of RS-GS relative complexity. But instead of increasing the complexity of RS in accordance with the meritocratic principle, they began to simplify GS, trying to bring it in line with their level qualification, interests and moral.

As a result, the systems of state planning, forecasting and management, financing, price formulation, taxation were wiped by paper laws of "national treachery epoch"²⁴[iv]. Scientific researches, education, medical care and culture were put on the brink of survival. All enterprises and branches of 4th technological wave (by Kondratiev) and those engaged in creation of 5th wave technologies were destroyed along with scientific and technical infrastructure. Active scientists were pushed abroad or generally out of science by economic strangulation. Agricultural production and transport system were ruined as well. Drastic simplification of all sides of economical, political, cultural and social life in Russia continues by enforcing Universal State Examination (ЕГЭ) in the schools, with western standards of pupil's education, introduction of paid education and medical care and so on. The achievements in GS simplification allowed to begin the final stage of Russian Academy of Science demolition, regardless its 300 year history, traditions and continuity. Nobody, nowhere and never even tried to put scientists among which are a lot of really noble men, in dependence from lower educated, lower qualified and only profit thirsty managers, unless the idea was to destroy the science corporation.

Second, also fundamental problem, is the scientific search for such tools, which could allow to train and educate noble men for meritocratic build up of RS for future society out the existing primitive human capital, oriented on profit maximization by all means. Here we can fully rely on cybernetic epistemology²⁵[v] (Complexity). The key idea for understanding the process of training and education is the process independent from our will and consciousness of "territory into map" transformation or transformation of facts and phenomenon from the sphere of functioning into the images (pattern components or subconscious images) by which only human consciousness operates.

For simplicity sake we shall regard, how such an ordinary thing as "stool" is kept inside human head and transforms into recognizable by all and everyone image of "stool".

According to the laws, discovered by scientists, sound vibrations, arising from spoken word, reach the humans ears. There, without consciousness interference according to bio-physical-chemical process they transform into the certain electrochemical signal, promptly entering the brain via hearing nerve. This is researched by sciences with prefix "neuro-".

Subconsciousness (this is already physiology) in response on this signal gets from its

²³[iii]In one of his public speeches V.V.Putin drew attention to the fact that during the period of privatization in 90th "as today became known, in close quarters of Mr. Chubais professional agents from CIA were working as advisors. Under US laws they were forbidden to make business on their insider information. But they violated it – corruption, so to speak" In more details: <http://www.politonline.ru/ventilyator/13467.html>

²⁴[iv]This is the formula by well known all over the world philosopher A.A.Zinoviev

²⁵[v]Methodology of complexity theory applied to complex socio-economic systems is being developed by author with the respect to the research results of many scientists. These are: A. Bogdanov (Russia), F.Capra (Berclly), I.Prigogene (Brussels),U.Maturana (Santiago), F.Varella (Paris), L.Morgulis (USA),B.Mandelbro (USA), G.Beatson (USA), S.Kaufman (USA) and others.

bibliotheca of the pattern (subconscious image) of organization components²⁶[vi] (further POC) for decoding of the received electrochemical signals combination. In our case they are "sitting place" and "support". Subconsciousness delivers to the human consciousness on the inside kind of dialogue, unconscious for man level, these POCs, so explaining the meaning of those vibrations that entered the ears. In the regarded case, the stool itself might not be present. The same POCs will be delivered if man sees one of the numerous models of stool or reads this word in the newspaper, feels familiar smell of wood or even hears the characteristic sound of the falling stool. POCs are delivered by subconsciousness in response for any familiar signals, coming from hearing, seeing, smelling, tasting and even from the sensations called 6th human feeling. It is exactly the subconsciousness that is driving the consciousness and selfconsciousness of any human being, school boy, student or scientist delivering to their understanding, by means of corresponding POCs, what they heard, saw, felt etc.

Unfortunately majority of scientists and professors ignore this defining process, which is called in cybernetics "transformation territory into map", or real fact into image. Such misunderstanding is particular catastrophic for education and training systems of what is called "human capital".

The example is clear, if sound vibrations came from the familiar word "stool". In case if some signal came transforming from unfamiliar sounds, for example, from unfamiliar word or concept, the subconscious keeps silent until it is informed by other channel or some other way, that this new electrochemical signal corresponds to certain POC, kept in subconscious. POCs do not depend upon language, by which man receives information. The routine term "market economy" sound differently in different languages, but its POC is uniform, because these are the "basic stones" which support the consciousness interaction with the environment by assistance of our organs of feelings. Subconsciousness explains consciousness two principally different words in foreign languages by the same POCs and one can understand the foreigner. So, it is the subconsciousness, which is unavoidable and dominating intermediary, which provides understanding between the people basing on its internal dialogue with consciousness. This understanding is the key to the radical change of the whole system of training and education. And the scientific thought requires transition to the system of permanent education for renovation of quick ageing POCs.

In foreign language western term "components of pattern of organization" is used, which further will be regarded as foreign analogue of Russian term "components of subconscious image". Those two scientific categories have uniform POCs. But it has to be noted, that "components of pattern of organization" is category in some sense external in relation to the pair "consciousness - subconsciousness" of the human being. This is, so to speak, an element of "external memory". "Subconscious image" is a phenomena appearing inside human brains, in the process of thinking, independent from man. In this sense Russian version of the

²⁶[vi]It is interesting, that modern scientific paradigm has no doubts, that Earth is rotating around its axle. But it means very little for a consideration of Planet's population, who continue to consider that the Sun is moving around the Earth, basing on their daily observations. According the data, published 11.02.2011 one third of Russians (32%) consider that the Sun is Earth's satellite. These are the results of the public poll, conducted by Whole Russian Center for Public Opinion Studies on the eve of the Science Day. Sociologists mark, that in comparison with 2007, the number of Russians considering that Sun is moving around the Earth all but increased, since previous poll gave results only 28%. But this is not all. Some time ago at the end of January, beginning February 2011 a video clip was placed in the Net, where a Frenchman, participant of the game "Do you want to become a millionaire?" was asked: "What is rotating around the Earth?" The multiply choice answers included 4 variants: 1 Sun; 2 The Moon; 3 Saturn; 4 Jupiter. The potential millionaire and erudite, missing the answer, asked help from the viewers. The result of their voting was that 53% of them confirmed that the Sun is moving around the Earth. And this is the opinion of the most educated part of French society, who want to make money by their knowledge!

category ("subconscious image") is more precise and organic category to characterize the process of transformation the "territory into map".

"Territory into map" transformation is typical not only for the cognition process. Most important, that it is definitive for the processes of teaching and training people. In other words the process of human relations and cognition is realized through the time interval and unconscious process, which defines human perception of the environment according to POC, created in the process of previous education and experience stored in subconsciousness without our conscious participation. Understanding of this property of human perception explains majority if not all the problems of misunderstandings, quarrels, scientific arguments and discussions, which sometimes bring about grave consequences for certain people and entire nations.

In this connection, it is fair to formulate the main fundamental task, one might say, even mission for education and training system. It consists of humanistic POCs bibliotheca creation for society members, which excludes their behavior outside of frames, for example, of Godly commandments. As for rating of current education system, it can be formulated very shortly – modern citizens confidently perceive the boundaries of their knowledge as the boundaries of Universe. This example highlights the quality of modern human capital.

The regarded facts – they are only one side of the coin. The other objective one, is also important and has to be taken into consideration by education system. To present it, let us bring into picture the wonderful Gödel's theorems on incompleteness²⁷[vii]. The essence of first theorem in simple terms one can present in the following form. In any non contradictory system of images, based on the counted number of basic axioms, it is always possible to formulate an expression, which principally cannot be solved within the frameworks of accepted axioms. To solve it, one has to introduce into the system a new axiom. In this way Euclid's mathematics was transformed into Peano's mathematics, where axiomatic line is not closed, but is open.

All modern socio-economic theories in the final count are based on three fundamental axioms. They are exactly the ones, which form the POC backbone of biological life on Earth.

First component is dead nature, matter, substance and methods of natural energy transformations on the way to heat balance (entropy growth) in accordance with second principle of thermodynamics.

Second component is cell, as complex micro formation, capable for self organization and self development, increasing its degree of order and moving in reverse direction to the chaos of dead matter world.

Third component is macro process of primitive organisms' evolution into human being. This is component of enterprising innovation of Nature which, without scientific research institutes, designing bureaus and even without parties and governments, succeeded to create the most perfect creature on the planet – human being, possessing an intellect.

These 3 components were presented by F. Engels following Feuerbach, in the "Nature Dialectics"²⁸[viii]. However, the socio-economical process, which rapidly develops in the world, already is impossible to explain within these three axioms. Globalization is unpredictably stopped by world crises of a millennium. Following fascism and socialism the last ideological construction – liberalism²⁹[ix] is falling. Only listing of the western

²⁷[vii]To learn better these theorems of genius, look, for example, Uspenski V.A. "Gödel's theorem on incompleteness in popular form. Digest "Successes of mathematical sciences", v. XXIX, issue 1 (175), January-February 1974.

²⁸[viii]Engels F. Nature Dialectics, Marx K. and Engels F. 2nd edition, v. 20, p.213-215.

²⁹[ix]Robert Mandell, Nobel Prize winner 1999, the scholar of M.Flemming in 2010 during the interview to The Wall Street Journal publicly refused the liberal paradigm («Where Do We Go From Here») <http://online.wsj.com/1>

publications expose the deepest crises of the liberal paradigm. Beginning from foresight of genius What's Wrong With Economics? Ward, B. (1972), following by: Econometrics – Alchemy or Sciences? Henry, D. F. (1980), The Crises in Economic Theory Bell, D., Kristol, I. (1981), Why Economics is not yet a Science Eichner, A.S. (1984), Economic in Disarray Wiles, P., Routh, E. (1984), The Intrinsic Limits of Modern Economics Theory Kirby, M. W. (1992), The Death of Economics Ormerod, P. (1994) and ending up by Economic of the 1%. How mainstream Economics serves the rich, observes reality and distorts policy John F. Weeks. (2014), the scientists raise their voice to demand thorough investigations of the current processes. IX Congress of Polish Economists "Economizing for the Future: to Discover Nature and Reasons for Economic Phenomena" which took place in Warsaw 28-29.11.2013 following its leader G. Kolodko^{30[x]}, closed the neoliberal page in science and in practice.

The new task is facing the humanity (it is formulated in accordance with the Gödel's theorems) which has no solution in the frameworks of 3 classic axioms, which were formulated in 2 extreme forms: Homo Economicus in the West and Homo Sovieticus in the USSR. To answer the challenge of modern civilization and education system crisis it is necessary to formulate new axiom, which is offered by the author.

The fourth axiom (POC) until now had never been formulated by any researcher. It can be represented as autopoietic (from basic autopoiesis), independent from processes in education and science, consciousness evolution process, which comes into materialization in two forms:

- in innovations as the method to magnify human capabilities **for Nature conquering**;
- in paper laws as the methods for **RS to take control over GS** for redistribution of public product in private interests of minority.

The discovery of the millennium is the understanding that in the base of the socio-economic relations in general and relations in connection with education and training in particular, **lays the human consciousness evolution**. The future of relations in the process of production activity was described yet in 1967 in J.K Galbraith's book "The New Industrial State"^{31[xi]}. He showed 4 consequent stages of human activity motivation: 1) physical enforcement; 2) economic enforcement; 3) internal need to be useful for other people; 4) creativity in a pure form. This 4th axiom, interpreted as humanistic transformation of our consciousness and pushing out of it the egoism, greed, individualism etc., explains the roots of modern crises and unsolvable contradictions. It brings forward principally new tasks for education and training system, as long life uninterrupted process and offers the outlines of further socio-economic construction of our civilization.

As the conclusions, we can formulate the following thesis.

1. Development of reciprocally complimentary system of education and training should take into consideration both autopoietic and objective process of consciousness evolution and handmade processes of "getting in line" corresponding POCs in process of education and training.
2. For forming the authentic representatives of RS – Noble Men, principally different programs of forming POCs are needed, contrary to modern ones forming "millions of little tyrants" according to very accurate K.Popper's expression.
3. Objective process of consciousness evolution brought about final crash of ideological and economic paradigms of fascism, socialism and liberalism.
4. In the base of future socio-economic structure of society the ideological economic paradigm of humanism will lie, the main elements of which will become:

30[x]G.Kolodko «Where the World Goes: Political Economy of the Future», M.: Magister, 2014, 528 p.

31[xi]John Kenneth Galbraith. "The New Industrial State", Houghton Mifflin Company Boston, стр. 130-131.

- reformation of modern hierarch principles of public institutions structures into the form of cooperation and interaction of "communities of communities";
 - meritocratic principles of RS formation will provide increasingly complete execution of truly democratic principle "gaining of RS – gaining of GS";
 - the forms of individual and collective private property will naturally transform into the form of associated private property of citizens, which will provide (following the studies of J.M Keynes and program theses of German Ch.D.P.) full and unconditional satisfaction of all human beings vital needs on the Planet by the fact of their birth (as it is guaranteed for billion years to all other biological species on Earth);
 - Marx's money, as self growing value will be pushed out by Gesell's money with demurrage, which eliminates financial capital, parasitizing on labor of all people, turning it into market tools for vital consumption economy development.
5. Objectively being formed in the world Humanistic Socio-Economic Formation can be built solely by the people of new way of thinking, who should be educated and trained by the new education system. This is realistic and achievable.
6. If these conclusions and results will not be taken into consideration at the point of bifurcation of modern civilization, we shall face the long period of renaissance after the fall into the modern medieval relations of beast instincts and law of the strongman, which already had been in the human history, after autopoetic demolition of Greek-Roman civilization. All is in the hands of scientists, who have to make maximum to avoid negative scenario of outcome from the point of bifurcation and appeal to Humanity to move towards the heights of humanistic formation, acting as new RS – Noble Men.

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