Factors Affecting the Public Judgement of Consumer Protection Authorities

CSILLA MARGIT CSISZÁR
ASSISTANT LECTURER

e-mail: csiszar.csilla@uni-miskolc.hu

SUMMARY

The article first introduces the state-provided institutions for consumer protection in Hungary, then examines and systematises those factors having a significant impact on the public judgement of the work of consumer protection authorities. The study is based on the presumption that the public judgement of the work of consumer protection institutions is affected by many factors, and that these factors can be grouped and counted. After examining the main fields of activities of consumer protection institutions and the main factors and aspects affecting the judgement of the public, a model for the measurement of satisfaction is proposed.
Keywords: institutional system, function of consumer protection, public judgement model of consumer protection authorities
Journal of Economic Literature (JEL) code: D18, P46

INTRODUCTION

National bodies carrying out consumer protection tasks have a vital role in state administration systems in all countries, and in our country as well. This can be seen through the fact that since the beginning of 2012, Hungary placed consumer protection on a constitutional level, so the government "shall ensure the conditions for fair economic competition, act against any abuse of a dominant position, and shall defend the rights of consumers" (The Fundamental Law of Hungary, 2012). This article introduces a model that organises the main factors affecting the judgement of consumer protection institutions. The study is based mainly on the literature, a review of the relevant laws and annual reports of institutions.

MAIN CONCEPTUAL CRITERIA OF THE STUDY

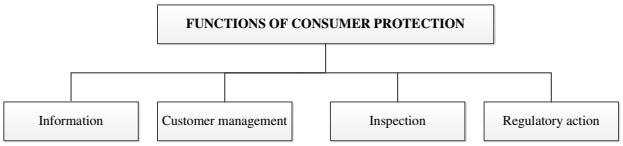
In the literature national bodies carrying out consumer protection tasks are classified as authoritative supervisory institutions. Before the definement of the term "authoritative supervision" I find it important to write a few words about the definition of supervision, because it is often disputed in the literature of this field. Many studies are concerned with the content and development of this term, as well as with its differentiation from guidance, supervision and control. As Zsuffa wrote in the mid-seventies regarding the differentiation, it is "total chaos" (Zsuffa, 1975: 42). Bércesi and Ivancsics (2003) still agreed with this statement some 30 years later. This article takes the view that supervision is a type of action aiming to alter the functioning of another body. In the scope of the supervisory activities we can find the control and observance of the supervised bodies or people (Fekete, 2011). The definition of market surveillance can be easily connected to this topic, as it can be defined as a control and supervisory activity of an administrative body appointed by the state, based on law, aiming at the monitoring of the markets of goods and services from a safety-oriented point of view (Szűcs, 2003). The aim of market surveillance is the removal of unsafe products from the domestic and EU markets. This includes the information for the consumer about hazardous products[1] and ensuring negative legal effects commensurate with the seriousness of the violation of law.

Authoritative supervision is one of the activities of administrative authorities, with a sort of a defensive aspect (Balogh, 1999). In countries having an enhanced administrative system, this supervision normally aims to help by assisting the supervised body in its activities and to preven errors occuring. Regarding its types, one can find many types of groupings in the related literature. This article adopts the conceptual grouping of Madarász, who differentiates general, special and legal authoritative supervision (Madarász, 1998). Most authorities execute fundamental supervisory duties, if these duties are not assigned by law specifically to one of them. Their typical rights are authoritative control, action and sanctioning. In most cases special bodies only supervise those fields where a stricter protection of society is needed, like labour safety or consumer protection. In the case of legal supervision the range of the supervising bodies is limited by law; one of these institutions is the legal supervision of the public prosecutor.

Authorities carrying out consumer protection tasks are rated amongst special supervisory authorities. Their main feature is that they have the right to perform control and sanction over institutions posing a threat to society in some ways (Balla, 1998).

This article examines the consumer protection function of the supervisory bodies as shown in Figure 1. The first group is the information, which means the provision of information for consumers and businesses and keeping in contact with other partner authorities, institutions and non-governmental organisations. Customer management involves activities relating to customer flow, as the whole process of the management of incoming reports, requests for information and complaints belongs here, as well as their investigation, forwarding to other authorities, and informing or rejecting.

[1] *In practice the rapid alert system of the EU (RAPEX) or the Central Market Surveillance System (CMSS) of the consumer protection authority can be added to this category.*



Source: own elaboration, 2012

Figure 1. The main fields of authoritative consumer protecting functions

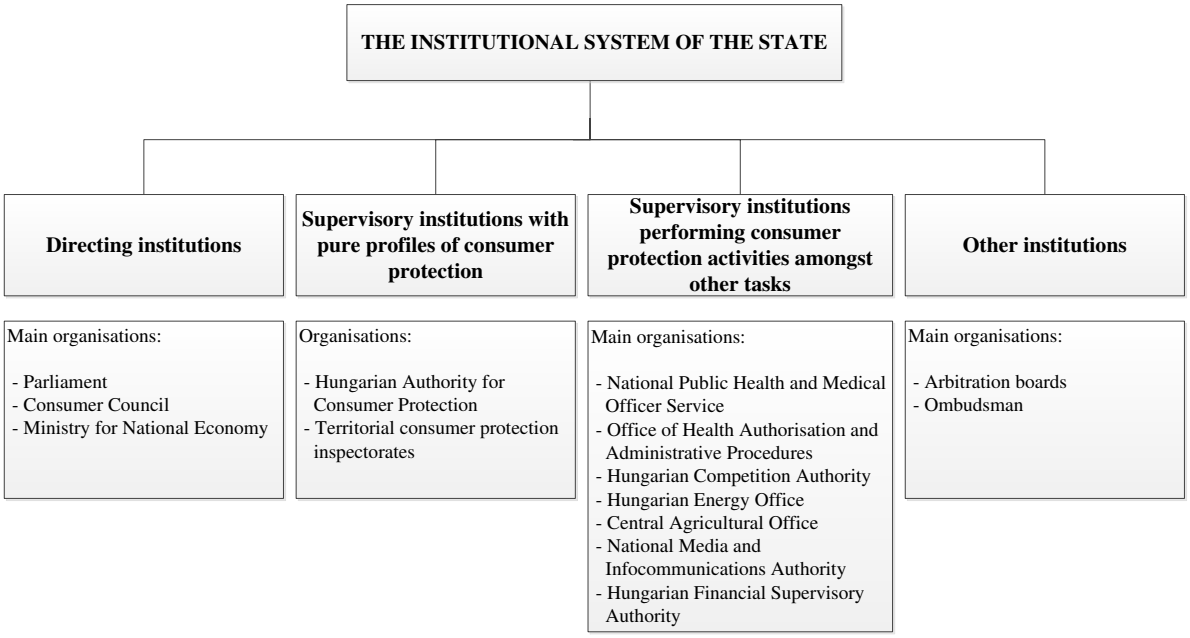
The third group of function is the *inspection*. In the broadest interpretation it means the comparison of tasks still to be fulfilled with tasks already fulfilled, examining whether the results meet the pre-defined goals or not (Balás and Hegyi, 2000). Under inspection the article means a type of supervisory control, as well as an activity of investigation aiming to learn whether an action, process or event can be judged right or wrong according to a pre-defined measurement system. Its main function is the enhancement of safety (Vigvári, 2002). On the field of inspection activities we can differentiate types of consumer protection, market surveillance, advertisement surveillance and activities aiming for food safety.

Regulatory action can be interpreted as a separate field, which contains administrative and sanctionating actions attached to inspection. Administrative measures are, for example, obligation, laying down of conditions, prohibition, or the imposition of fines (consumer protection, quality, advertisement fines, etc.). Sanctionating measures are a warning, imposition of a fine on the spot, seizure, etc. Remedies, like a plea, an appeal or a litigation also belong to measures.

THE STATE-PROVIDED INSTITUTIONAL SYSTEM OF CONSUMER PROTECTION IN HUNGARY

The role of the state in the complex system of supervisory activities is vital. It is mainly the duty of the state to ensure the observance and execution of the law on consumer protection and to ensure sanctions against lawbreakers and initiate legal actions (Bodnár et al., 2001).

In Hungary, the activities of supervisory consumer protection are all performed by the institutions of the state. These institutions also constitute the first pillar of the institutional system of consumer protection (Figure 2). Apart from them, there are also interests representing (non-governmental) organisations and institutions of local governments, constituting an independent pillar of the institutional system of consumer protection.[2]



Source: own elaboration, 2012

Figure 2. Classification of the state-provided system of consumer protection in Hungary

The following groups can be formed regarding the institutions of the state:

- directing institutions;
- institutions with pure profiles of consumer protection;
- institutions performing consumer protection activities, amongst other tasks;
- other state institutions performing consumer protection activities, amongst other tasks.

Under directing institutions I mean those institutions having the right to control legislative and supervisory institutions during the process of consumer protection related law-making. Currently the body responsible for consumer protection is the Ministry for National Economy as one of the inspection institutions. There is only one institution with a pure profile of consumer protection, which was created intentionally to carry out the consumer protecting function. This institution is the Hungarian Authority for Consumer Protection (HACP). Considering this, the fourth policy of consumer protection (Govt. decision, 2012), which is in effect until 2014, names only consumer protection inspectorates (working under the aegis of government offices with countywide or capital city-wide cognizance as their specialised bodies) and the HACP as the consumer protection authorities.

[2] *For a more detailed explanation see: Csiszár, 2012*

The Hungarian Authority for Consumer Protection was established by the government on 1 September 2007 by the merger of regional consumer protection inspectorates. Since 2011 these inspectorates belong to government offices as their specialised bodies, but their control is still the right of the HACP. As a central authority, this institution supervises the execution of the law on consumer protection and promotes consumer information as well as education. As part of its market surveillance duty, it coordinates and performs product safety tests, promotes the work of advisory offices and performs laboratory research (NFH, 2012).

The institution itself is self-managing in its finances and it has full rights over the sum of money provided for its operation by the national budget. The two main financial sources financing its fundamental tasks are income from operations and the subsidies of the national budget (since these fundamental tasks are the tasks of the state) which makes up almost one hundred per cent of all income (NGM, 2011). Data regarding the function of the HACP is shown in Table 1 below.

Table 1
Main data of HACP sorted by its function

Function	Description	2008	2009	2010	2011
Customer management	Number of customers	113,862	113,654	93,064	85,759
	Number of applications, complaint reports	17,046	17,494	20,817	21,045
Inspection	Number of inspections	51,537	60,439	52,765	27,548
	Inspections uncovering breach of law or rules (%)	49	35	23	30
Regulatory action	Actions of first-grade authorities	29,525	27,346	21,351	17,649
	Administrative decisions made on second grade	2,304	1,851	2,635	2,306
	Number of administrative lawsuits	N/A	N/A	306	214
	The amount of fines (million HUF)	2,595	1,306	852	N/A

N/A= data not available
Source: own elaboration based on annual reports of the Hungarian Authority for Consumer Protection, 2012

The HACP and the regional inspectoriates handled the most customers in 2008, as a result of the establishment of the national system of consumer contact offices in 2007. These offices are currently operated by local authorities with the assistance of NGOs. Three years later the establishment of the nationwide system of Authoritative Advisory Offices took place to increase customer orientedness. The number of customers has been declining ever since 2009, but the number of applications and complaints is rising continously. The data may indicate that the authority has become more customer oriented and more efficient in disseminating information, but more research is needed to verify these presumptions.

From the data of 2008 regarding inspection functions we can learn that the authority carried out 51,537 inspections. This number increased by 17% to 60,439 until 2009. This increase was probably caused by the change of inspection methods causing higher effectiveness. The number of checks began to decline in the next year, together with the rate of breaches of law or rules, except for 2011, when next to the lower number of checks we can find a 30% rate of breaches. It may worthwhile to investigate its causes further.

Examining the authoritative actions, one can see that first-grade actions – these are the actions of the regional inspectoriates – are declining year by year, similarly to customer numbers. For first-grade actions measures were taken in the 23% of customer appeals, while for second grade actions – actions of the HACP – this rate is 11%. The number of incoming applications and complaints, as points of reference, also show a declining tendency, as we can see that statistically in 2008 there were almost two actions taken per application or complaint, but the rate between the two fell to 0.8 by 2011. The sum of fines is also declining continously; while in 2008 authorities imposed fines in the sum of 2,595 million forints, it declined to 852 million forints in 2010. The declining tendency can indicate either the enhancement and decline of efficiency; more research is needed to be able to make a more accurate guess.

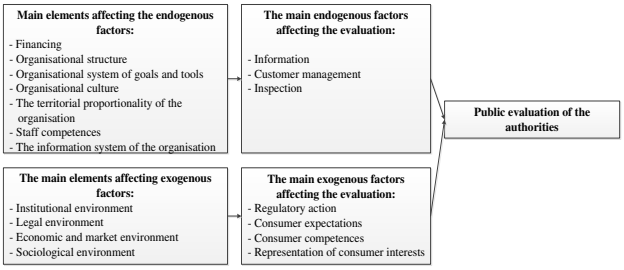
Aside from the HACP there are also institutions performing consumer protection activities, amongst other tasks. While these institutions mention consumer protection amongst their tasks, their activities are not exclusively focused on it. The most significant institutions of this type are the Hungarian Financial Supervisory Authority (HFSA),[3] the Hungarian Competition Authority (HCA), the National Media and Infocommunications Authority (NMIA), the National Food Chain Safety Office (NFCSO) and the Hungarian Energy Office (HEO). There are also authorities not constituting the protection of consumer rights anywhere, but whose intention to do so can be seen clearly. These are, for example, the National Public Health and Medical Officer Service (NPHMOS), the National Institute for Quality- and Organizational Development in Healthcare and Medicines (NIQODHM) or the Hungarian Labour Inspectorate. Institutions not mentioned as members of the aforementioned three categories – like the ombudsman – are placed in the other category.

THE MEASUREMENT MODEL OF FACTORS AFFECTING THE PUBLIC JUDGEMENT OF CONSUMER PROTECTION AUTHORITIES

Judgements in most cases represent transitions between quantitative and quality oriented points of view and always examine performance. I based my quantitative judgements on output data of consumer protection activities, while my quality-oriented judgements are based on public opinions regarding to consumer protection by the authorities. During the examination of the effects affecting the public judgement of consumer protection authorities I divide these effects into two groups (Figure 3). I rate the consumer protection competences of the organisations into the endogenous[4] group, while the factors affected by external effects (self-consciousness or expectations of consumers) are rated into the exogenous group**.** Figure 3 shows the main elements affecting both the endogenous and the exogenous group, as well as those factors affecting the judgement.

I based the collection of the factors affecting the judgement of supervisory consumer protection authorities on the model of Hetesi, who wrote a similar study in relation of energy providers (Hetesi, 2002)- and on the works of Bodonyi et. al. (2002), who examined the elements needed to learn the activities of administrative institutions. The measurement of consumer self-consciousness (awareness, competence, interest representation) was a new element in the model of Hetesi, which I found very important in the relation of this study as well.

[3] *The HFSA is even more differentiated in the group, as since 1 September 2009 this is the only official consumer protection authority (Govt. decree., 2009).*



Source: Own elaboration based on the publications of Hetesi (2002:211-213) and Bodonyi et. al. (2002: 27-30)

Figure 3. The main factors affecting the public judgement of authorities

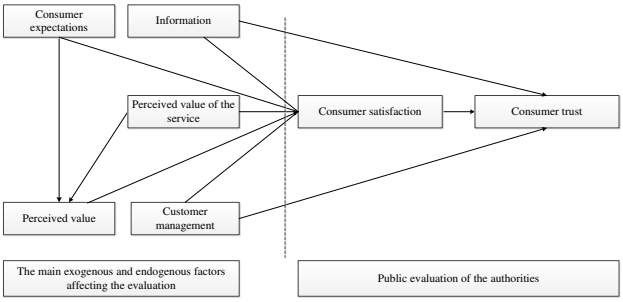
The measurement model of the judgement is based on the measurement models of consumer satisfaction. There are many ways known to measure consumer satisfaction, from which the procedure used in most cases is the one emphasising on the judgement of service efficiency by the consumers. This study is also based on the identification of the factors for the public judgement of the service, which is the execution of its consumer protection function. Amongst the aims of consumer satisfaction measurements we can also find the provision of assistance to institutions by their self-judgement and by the comparison of efficiency levels (Hofmeister et. al, 2003; Bruhn and Murmann, 1998) The aim of the measurement model of effects affecting the public judgement is also to help achieve these goals.

Although studies regarding satisfaction levels clearly have a traditional background, one can not find a clear description belonging here either. I base my study on the notion of Stauss and Seidel (2006), which is one of the result-oriented approaches. According to this notion, consumer satisfaction is nothing more than an after-purchase effect, which shows how the consumer evaluates the products and services bought. Pursuant to Section 2 of Act CLV of 1997. consumers are: natural persons acting in favor of goals not included in their normal scope of independent professional and economic activities in those cases, when they buy, order, receive or use goods or when they are the adressees of commercial communications or offers relating products. (In addition, pursuant to the law, NGOs, churches, blocks of flats, alliances for apartment maintenance, and micro, small and medium-sized entreprises also can turn to the arbitration bodies. These organisations are considered as consumers in arbitration bodies' operation.)

The very first aligned national measurement system in the world that was capable of consumer satisfaction measurement and of the improvement of products and services on an intercorporate and inter-industrial level was established in 1989 in Sweden. This system was adapted by the establishment of the American Customer Satisfaction Index (ACSI), which, after many positive experiences coming from the USA and Sweden, was followed by the European Customer Satisfaction Index[5] (ECSI) (Gronholdt et al., 2000).

In most cases, national and international studies of satisfaction are based on the ECSI model. This is an equilibrated model that attaches consumer satisfaction to its factors and with its effect, namely with trust (Figure 4). The determinants of consumer satisfaction in this model are the following: consumer expectations, the experienced quality of services, the experienced value, the information and customer management, those factors likely having an impact on satisfaction. The fundamental aim of the model is not the measurement of the level of consumer satisfaction, but the factors having an impact on it.

The only factor in the model, which is observed directly and which is measured by one statement is consumer expectation. The consumer will be satisfied if the service holds value for him (Dumond, 2000), meaning that expectations also affect satisfaction levels.



Source: ECSI model, own elaboration based on the studies of the ECSI model published by Bee et al. (2012) and Ball et al. (2004)

Figure 4. The measurement model of the public judgement of consumer protection authorities

In the middle of the focus of the model, next to the measurement of the satisfaction, the perceived value of the service can also be found. The experienced quality can indicate the level of fulfillment of the most important needs, which may have a positive effect on the satisfaction levels. the perceived value of the service consists of two elements. One of them includes the features of the services, in this case the details of consumer protection function (control, regulatory action), while the other includes the elements of interaction, like the environment of the consumer protection services or the competences and interest representation abilities of the consumers. The perceived value[6] indicates the ratio between the price and the quality, which is measured in the model in money. The quality of information and customer management influences satisfaction and in the long term trust as well. Similar to the model of Ball, I found important to put emphasis on these factors in order to achieve a more exact result.

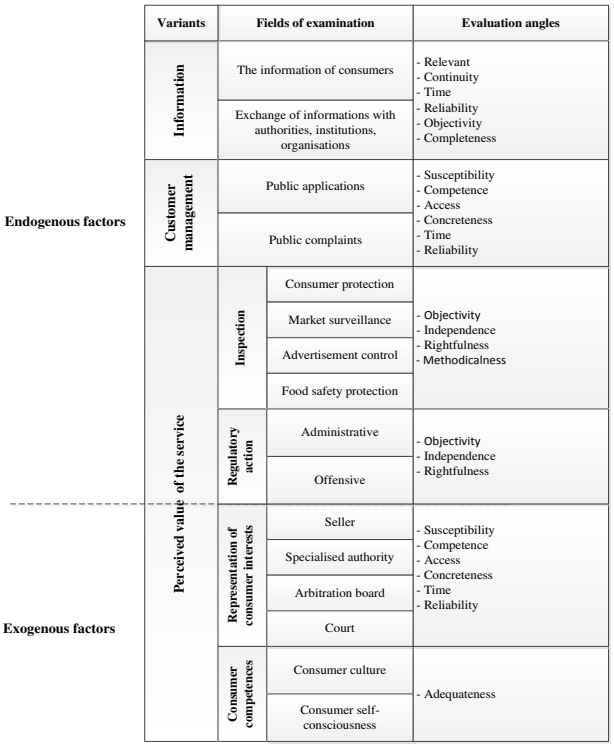
THE FURTHER DIRECTION OF RESEARCH

The main variants of the model introduced in Figure 4 are latent variants and therefore, those are unmeasureable in a direct way, so researchers have to attach measurable indicators to these variants. I also separated the individual elements into different examination fields and searched for possible judgement angles attached to these fields (Figure 5).

In my view it is useful to divide the first variant – information – into consumer information and keeping contact with partner authorities or organisations in order to enhance information exchange. I would attach the evaluation to the quality-related demands attached to informations (Kacsukné and Kiss, 2009), so in relation to information I would find it important that information should be relevant, meaning that it should be able to answer the questions of the decision maker.

[4] *Endogenous means "caused by internal influences", while exogenous means "caused by external influences".*
[5] *The establishment of ECSI was a result of a cooperation of organisations, including the EOQ (European Organization for Quality), the EFQM (European Foundation for Quality Management) and the European Academic Network for Customer-oriented Quality Analysis.*
[6] *The study does not analyse the experienced values regarding the supervisory consumer protection authorities.*

Continuity is attached to this, so the flow of information needs to be continuous and the provision of data must be repeated regularly. It also have to be at the right time, meaning that the information needs to be available in time to be taken account of in decision making. Reliability, objectivity and completeness are also very important, because the information should communicate real facts, should carry those meanings of the words best describing the situations and should cover every vital aspect, allowing authorities to provide their customers with every knowledge needed to solve a problem.



Source: own elaboration, 2012

Figure 5. The detailization of public judgement of consumer protection authorities

The second variant is consumer management, in which I plan to examine the fields of public applications and complaint reports. I will begin with the examination of effects affecting consumer satisfaction (Parasuraman et. al., 1985), one of the angles of the judgement, so before other factors I would find the examination of susceptibility important, which shows the level of willingness of authorities to fulfil the needs or requests of the customer. Here it is also useful to examine the professional competences of the staff of authorities, and access, which indicates the ease, comfort and means of getting in touch with the authorities. Regarding concreteness the material circumstances of the service provision are the factors worth being put in the center of an exam. I will examine the period of time of the process and the reliability as well.

The third variant is the perceived value of the service (its elements are supervision, regulatory action, consumer interest representation and consumer competence), which I break down further. I will examine inspection by each type and will base the judgement on its fundamental requirements. Objectivity is an important angle, meaning that the inspection has to be based on facts, on their examination and judgement, and at the same time it has to be uninfluenced by subjective elements and by elements altered by various interests. The question of independence attaches to objectivity, because the inspection has to be independent, which means that neither the inspection body nor the people executing an inspection could be held directly or indirectly responsible for the activities of the inspected body and they cannot have an interest in these activities. The third important requirement is legality, meaning that inspection always have to be based on laws, it cannot divert from their application, it cannot makeor alter rules, because its main role is the discovery of noncompliance with law and rules. I find the methodicalness of an examination to be also a very important judgement angle, which means that the inspection has to be filed in an inspection workplan and it has to be executed following its inspection program (guidelines, schedules) predefined in detail (Bodnár et. al, 2001).

I intend to analyse regulatory actions by administrative and offensive actions, and similar to inspection, I would examine the independence, the objectivity and the righfulness here as well. It is worth carrying out an examination of consumer interest representation along with the possible means of solving problems occurring, so I plan to analyse the opportunities of problem solving available by the seller, the specialised authority, the mediating institution and by the court in the first round. I would start my examination based on the facts influencing satisfaction here as well, so I would examine susceptibility, competence, access, concreteness, time and reliability. In the field of consumer competences I will examine adequateness of consumer culture and consciousness, but because its judgement can be difficult, I will execute a correlative analysis of the data of other countries.

Consumer expectation is a factor not shown in Figure 5, because information is already available from secondary sources on this topic. According to the current consumer protection policy, from the side of the public there is already a demand to extend the activities of authorities over all products and services without respect to their original competences. They are demanding the provision of information, especially via the operation of competent customer service to assist their decision making (Govt. decision, 2012).

SUMMARY

The article has examined the factors influencing the public judgement of supervisory authorities undertaking consumer protection tasks. The study was based on the presumption that the state-provided institutions for consumer protection are influenced by many factors and that these factors can be grouped and counted. I grouped the factors of public judgement of the authorities into endogenous (information, customer management and inspection) and exogenous (regulatory action, consumer expectations, competences and interest representation) factor groups. To define the factors the article first examined the function of consumer protection authorities and then introduced the domestic institutional system, especially analysing the Hungarian Authority for Consumer Protection. In the case of this authority the analysis resulted in the conclusion – which may be valid for other authorities as well – that in order to promote more effective operations, it would be useful to examine activities according to the scope of the function of the institutions.

The article's discussion of judgement was based on the measurement models of satisfaction with consumer protection authorities and the trust placed on them. The writer proposed her measurement model of public judgement regarding supervisory consumer protection authorities, which was based on studies of the measurement of consumer satisfaction. She attached the predefined factors to the model and then as a further direction of the study she identified judgement angles to enhance the tangibility of elements in the future.

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Estimation of Social Benefits in Cost-benefit Analysis

BEÁTA FODOR
PH.D. STUDENT

e-mail: vgtfodor@uni-miskolc.hu

SUMMARY

While examining the cost-benefit analysis related to public policy decisions in the Hungarian and international literature, this paper is looking for the answer to the question of what the methodological principles are according to which the benefit impacts can be determined. The processed Hungarian and English-language studies indicate that the theoretical-methodological questions of the determination of benefit impacts are not clear cut. The author has constructed a model that contains the most important method-components of the benefit impact analysis. Based on six major factors, the model illustrates the analysis of the benefit impact, divided into elementary methods.
Keywords: cost-benefit analysis, benefit impact, method-components of benefit impact analysis
Journal of Economic Literature (JEL) code: D61

INTRODUCTION

Even though the method of cost-benefit analysis was elaborated in the United States in the early 1800's, in Hungary it gained attention only after the change of regime in the late 20th century. In the progress of the development of democracy, cost-benefit analysis is gaining even greater importance in the preparation of Hungarian municipal decisions. Due to its usefulness, nowadays it is indispensable to perform a cost-benefit analysis when a non-business project is linked to EU support. According to the related system of rules and based on the calculations, the proportion and amount of the aid can also be determined.

Basically, the methodology is a decision-supporting procedure that compares every monetary and non-monetary, i.e. the full scale benefit impact of all decision variants, to the costs. In this approach, it is mainly used to substantiate public policy (municipal and governmental) decisions. Theoretically, it could be applied in the business sector as well, however, in that sector the interests are linked to yield-effects manifesting themselves in the form of money.

In this paper I am focusing on the major types of benefit impacts and the analysis of the recommendations of the literature related to the methodological opportunities of the estimation of their value.

THE GENERAL BACKGROUND OF COST-BENEFIT ANALYSIS IN THE LITERATURE

Cost-benefit analysis as a theoretical scientific category is a method related to the welfare economics which can be used to analyse public assets. Even in the 19th century there were recommendations related to this in the literature, however these were only very initial cost-benefit analysis-like calculations.

The first to go into this issue was Albert Gallatin in 1808 in the USA. Following his advice, an evaluation of the costs and benefits of a water related project was attempted (Hanley & Spash, (1993), p. 4.). In Europe, the first application of cost-benefit analysis can be attributed to Jules Dupuit, a French economist who, in a paper published in 1844, realised the concept of the consumer surplus that still plays an important role in the measuring of the social benefit to be determined in the cost-benefit analysis. Generally, the benefit is in connection with the value judgment of the customer. In other words: if something is advantageous for the customer, it can be regarded as a benefit. In the application of the method, the extent to which a person appraises or estimates something is determined by the extent he/she appraises the public assets. Dupuit pointed out that, for example, the benefits originating in the use of roads and bridges exceed the tolls to be paid for their use (Mishan & Quah (2007), p. 243).

The next milestone in the application of the method was the Flood Control Act of 1936, issued with the contribution of the U.S. Army Corps of Engineers, which required the costs to be determined and the benefits to be estimated for federal water resource projects. These required analyses that were not yet based on the methodological basis of cost-benefit analysis and, compared to that, they can be regarded as rather crude solutions.

In the United States in the 1950's, the application of cost-benefit analysis was extended to areas in connection with public interest other than water management, such as education and public health-care. With the help of economists, the "Green Book" containing the principles, norms and processes related to the carrying out of cost-benefit analyses for projects related to the hydrological basin of rivers was published in 1950. In its initial form, however, the method was not yet concerned with social values. Later, the Green Book had been updated several times.

In 1958, Otto Eckstein defined a more modern variation of the cost-benefit analysis. Eckstein laid out the foundations of the method to be later known as social cost-benefit analysis in welfare economics as well as its application in the field of water resources development (Tanzi (2011), p. 172).

The real change in the development of the method was triggered by President Ronald Reagan's Executive Order 12291 of 1981, which requires a so-called regulatory impact analysis (the initial method of the cost-benefit analysis) to be performed in case of government projects whose costs exceed USD 100,000 (Rodriguez (1988), pp. 505-546).

In Europe, the development of the method was different from that in the United States. Its application started in effect with the directives elaborated by the European Union that

require a cost-benefit analysis to be performed in case of major investments.

THE STATE OF COST-BENEFIT ANALYSIS IN HUNGARY

The cost-benefit analysis applied in the Hungarian practice has become a widely applied practical method since the change of regime in 1990. Compared to the initial solutions, it has undergone considerable changes in the meantime. The changes are still in progress. Compared to international practice, however, there is not yet a practice in this area that could be regarded as full-fledged. We can encounter the obligations and requirements related to the application of cost-benefit analysis in several areas of Hungarian and European law.

The turn of the millennium brought an upswing in the application of the method in Hungary. The government resolution related to the years 1999 and 2000 which required that "every ministry and the central administrative authorities [...] has to take care of a cost-benefit analysis of the decisions and the performance analysis of the work done. The tasks related to them are determined in the annual schedule" [Government Resolution 1052/1999 (V.21.)].

The government resolution related to the next two years (2001-2002) contains more detailed requirements for the practical application of the method. In this resolution, there is an even more considerable emphasis on the cost-benefit analysis destined to substantiate the method applied these days. The Government Resolution 1057/2001 (VI.21.) requires that:

- methodological assistance has to be provided to the development and support of a wider-range application;
- the legal background of the application of the analysis has to be elaborated (which organisations and institutions, under what conditions and circumstances, shall be obliged to perform an analysis);
- the current application opportunities of the method and the factors obstructing them under the current circumstances – concerning IT, human resources and access to the appropriate database – have to be analysed;
- it has to be analysed which areas have to be developed in order to eliminate the identified obstructing factors. The term and schedule of the realisation shall also be analysed.

In the literature we may often encounter cases indicating that the cost-benefit analysis playing a major role in public policy decisions may also be applied in areas where – unlike the business sector where the condition of the threshold of operability is that the total profit shall cover the total costs (Illés (2002), p. 44) – there is no income produced to such an extent that could be compared to the costs. Such an area is, for example, road construction (except for the case of toll roads) where the organisation financing the construction works will not have income in the future (Internet-reference: evaluation of transport development plans). A similar case is the renovation of the areas of common use of a settlement, the development and keeping clean of the stormwater drainage system, the installation of a local fire or police department as well as the development of the public transport.

As far as public policy decisions are concerned, the practical application of the cost-benefit analysis required to substantiate municipal decisions is still in its infancy; however, it is gaining in importance with the increasing social demands. The local municipalities of Hungary have different tasks and scopes of authority, part of which are mandatory and part of which may be undertaken by the municipality's own resolutions. In other words, there can be municipal tasks and administrative tasks where the decisions manifest themselves in the form of a resolution or a decree. A considerable part of the municipal decisions are related to the installation and maintenance of public assets (for example parks, roads, drinking water provision, canalization, etc.), a part of whose costs are covered by government funds (Act LXV of 1990). The economic substantiation of the spending of public funds supports the decision-making process related to the questions concerning the society. With its accession to the European Union in 2004, Hungary obliged itself to comply with the requirements (detailed in the guides) to analyse the investment projects supported by the EU (Council Regulations (EC) No. 1260/1999 and No. 1267/1999). These guidelines detail the tasks to be performed in the execution of the projects. A member state, after informing the Commission, has to provide the executive authority with information on the nature of the investment, the scheduling and realisation of the investment, the result of the cost-benefit analysis along with the financial costs and benefits, the analysis of social-economic benefits, the impact on the employment, environmental effects, etc.

In Hungary, COWI Hungary Ltd. (COWI Magyarország Kft.), commissioned by the National Development Agency (Nemzeti Fejlesztési Ügynökség) published a series of guides in 2009 based on the European and international theoretical and practical experiences. Each guide encompasses a sector: there are, for example, guides on the methodology for sewage disposal and treatment, waste management, road development, railroad development and public transport projects. The purpose of the guides is to provide uniform guidance on the economic evaluation of projects to be realized with EU support (National Development Agency (2009a, 2009b)).

THE CLASSIFICATION OPPORTUNITIES OF THE PROJECTS

Projects may differ from one another; however, we can find properties based on which they may be grouped. Görög (2001) classifies the projects as follows:

- investment projects: "the project is a one-time, complex process of activities the result – the defined goal – of which is a ready-to-use facility that can be described via predetermined technical parameters and the realization of which is determined in terms of money and time as well" (Görög (2001));
- research and development projects: the result of these projects is a new product or technology, an improvement in an already existing product or technology, the introduction of the production of a new product or a new technology, the introduction of a new product or service to the market, or the reduction of the costs of the existing products or services;
- intellectual service (management) project: as a result of the project, the operational circumstances of the organisation will be changed, for e.g. changes in the ownership structure, re-organisation of the operation of the organisation, etc.

According to the literature, further classification aspects may be, for example, the content and the size of the project, the sector to which the analysed project belongs, the group of population affected by the project, etc. Important relationships may be found between the above-listed classification aspects. For example if a project is about keeping a public cemetery clean, it can be considered as either a minor or major project with the same content. While the keeping clean of the public cemetery of a small settlement is certainly considered as a minor project, however, this is not so self-evident in the case of

a larger town. Other than that, the requirement of proportionality has also to be kept in mind, i.e. how much expense a given task requires and whether the costs are proportionate to the result that can be expected. We may often encounter the assumption that in the case of minor projects (such as keeping clean areas of common use) there is no point in performing a cost-benefit analysis; that can only be regarded as a reasonable requirement in the case of major projects (reconstruction of public institutions, development of sewage network). It runs contrary to this if we are thinking about decisions related to the projects to be realized by the municipality, such as spatial development, country planning, economic development or human resources development. As for the size of the project, a project has to be considered as a "major project" if the total investment cost of the project is equal to or higher than 50 million EUR or, in case of environmental protection investments, 25 million EUR (Article 39 of the Council Resolution (EC) No. 1083/2006).

The projects falling within the competence of public policy decisions may be realised in different sectors, such as the manufacturing industry, construction industry, commerce (organising primary producers' market or weekly fairs), public catering, education, health care, etc. When analysing projects to be realised in these sectors, Florio et al put emphasis on taking the following impacts into account:

- in the case of traffic: the expectable local and global impact of the air pollution on people, nature and environment, the impact of the noise pollution on people, moreover, the savings on travel time, the changing of the accident risk,
- in the case of sewer systems, sewage disposal and treatment: the impact on subsurface waters, the protection of the geological layer, impact on public health,
- in the case of waste management projects: the impacts related to the elimination of illegal waste disposal sites, impacts originating in the reduction of land use, the reduction of the emission of greenhouse gases, impacts on public health, protection of source water systems,
- in the case of maintenance and development of areas of common use: the impact on the general state of health of people,
- in the case of a company founded by the municipality: the impact on the employment of the local population and on the infrastructure of the settlement.

It helps the assessment of the impact of investment and non-investment projects on other sectors (projects) if we first consider the relationships between the sectors (projects) which have to be taken into account when calculating the benefits. For example, traffic development may have impacts on commerce, on the state of health of people and therefore on health care, etc. (Egyházy (2007)).

Recommendations in the Literature Related to the Process of the Cost-benefit Analysis

In case of most projects, the cost-benefit analysis is preceded by a preliminary, sketchy financial analysis in which only those cash flows have to be taken into account that effectively emerge in the given project (National Development Agency (2009b) pp. 11-17). The numerical determination of the costs and incomes within the financial analysis is followed by the most important part of the analysis: the cost-benefit analysis itself, which may be regarded as a social-economic analysis as well. Here we determine the impacts that do not form part of the financial analysis, such as environmental impact, re-distributional impact, subsidies, etc. (Határon Átnyúló Együttműködési Program (2006), pp. 9-12).

The steps of the cost-benefit analysis are listed in most of the sources as follows (Bartus et al. (2005), pp. 5-6):

1. deciding whose preferences, i.e. benefits and costs, are taken into account,
2. choosing the alternatives to be evaluated,
3. specification of all possible impacts and the selection of the appropriate index number,
4. forecasting of the impacts,
5. monetisation of the impacts,
6. discounting,
7. summarising the costs and benefits,
8. sensitivity analysis,
9. choosing the alternative providing the best net social benefit.

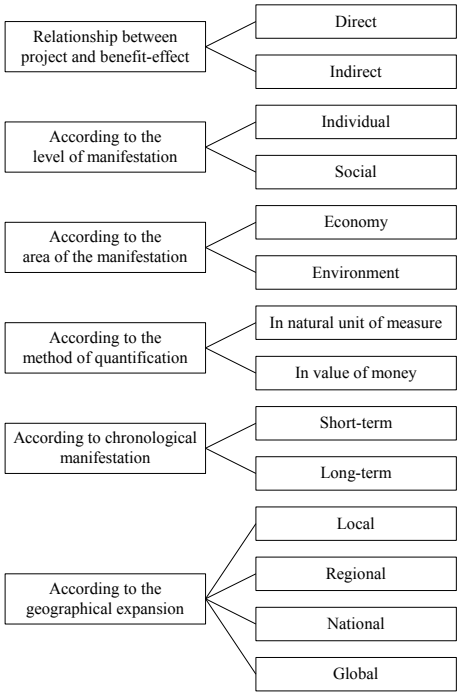
The special case of the cost-benefit analysis is when a task determined as mandatory by legal regulations has to be performed. For example if a sewer network required for sewage disposal has to be installed, which is a very significant communal interest, it is not necessary to perform a "real" cost-benefit analysis; in this case the most important task is to reduce the costs. In 1996, the Rhine–Westphalian Technical University (Rheinisch–Westfälische Technische Hochschule Aachen) presented a revised, simple aid for cost-analysis related to sewage treatment and sewer systems. The analysis is well illustrated by the case where the objective is to solve the channeling and sewage treatment of two settlements. In this case, there are several variations elaborated for the construction of the sewage treatment facility. The goal of the analysis is to find the variation where the investment costs are the lowest (Fekete, 2011).

The Appearance of the Benefit Impacts in the Literature

From the related recommendations of the literature, it is necessary to analyse those capable of casting light upon methods for the quantification of the benefits. It makes the situation more complicated that not even the theoretical-methodological questions are clear-cut. When analysing the benefits, we may encounter numerous cases in the literature. In the case of a given project, the realisation of not one but numerous impacts or even the drop-out of a part of the impact must also be taken into account. For example, if a municipality plans a community-building development but fails to inform the community about it ahead of time, for example does not organize public meetings or discussions related to the project, the original expectations may not, or only partly, be realised. Since a significant part of the project decisions are related to reconstruction (modernisation of a sewage treatment facility), development, renovation (for e.g. renovation of a playground, reconstruction of a stadium), or institutional or communal investment the benefit impacts emerging with the realisation of the project may be classified according to various aspects:

The benefit impacts may simultaneously be characterised according to six major aspects, so there are simultaneously six features related to the benefit impacts. The benefit impacts, according to the main features, may be divided into elementary methods. These elementary methods are not completely independent from one another; the application of certain methods may simultaneously result in other possible solutions as well. It may also happen that a benefit impact analysed according to a certain aspect is simultaneously characterised by different elementary methods. For example, the benefit impact

may simultaneously manifest itself at individual and at social level as well.



Source: own construction

Figure 1. The most important methods of benefit impact analysis

The Relationship Between Project and Benefit Impact

In public policy decisions about projects, the benefit impact may manifest itself either directly or indirectly and it may also happen that the same benefit impact can be considered both direct and indirect simultaneously. The direct benefit impacts, with few exceptions, emerge for the former customers, for the potential consumers, and for the contractor/operator. Travel time savings or the improvement of the general state of health of the individual are considered as such benefit impacts (Mechler (2005), pp. 16-19). The indirect benefit (emerging in the economy) is not directly related to any of the public policy decisions; however, it increases the attractiveness of the given region. A direct impact may be, for example, the increasing employment of public transport that results in the reduction of the operating and maintenance costs related to the individual use of vehicles (Farkas, pp. 4-6).

The Level of Manifestation of the Benefit Impact

The first step of the cost-benefit analysis is to decide whose benefits will be taken into account in the analysis. In most studies, the effect components emerging with the realisation of the project are presented divided into individual and social effects. The private benefit is of great importance in public policy decisions. The private benefit may be increased by education, further training, work experience, or improvement in the state of health. The direct beneficiaries of the investments in the area of education are the people participating in some form of training and their families. According to Psacharopoulos (1995) in this case "the private benefits amount to what a more educated individual earns (after taxes), above a control group of individuals with less education. "More" and "less" in this case usually refers to adjacent levels of education, e.g., university graduates versus secondary school graduates" (Psacharopoulos (1995), p. 2.). In case of the projects where time saving can be expected, for example in the field of traffic development, the analysis is important because the time saved may be spent on working, recreation or other activities. According to Mishan, if the traveling time will be shorter due to an investment, the savings will be measured on the basis of the amount of money someone could make during a period of time equaling to the saved period of travel time (Mishan (1982), p. 293).

When making public policy investment and non-investment decisions, for each effect component it is the determination and quantification of the social benefit – that becomes social benefit through the individuals – that is of great importance in the cost-benefit analysis; however, its interpretation requires particular care. The social benefit means chiefly the circumstances and opportunities becoming more advantageous for the population (Mishan and Quah (2007), pp 179-201), such as social admittance, equal opportunities, being in the labour market, higher educational and cultural level, way of life, more spare time, etc.

The Area Where the Benefit Impact Manifests Itself

The benefit impact may manifest itself in the area of the economy and in that of the environment. The economic effects manifest themselves chiefly in the areas of employment-unemployment, competition, relationships between market participants, innovation effects, R+D effects, etc. The purpose of the assessment of the environmental impact is to analyse the effects of the project on its natural environment, such as pollutant emission, assessment of the changes in the impacts on natural habitats. In Hungary, the regulations related to environmental impact assessment are laid out in Government Decree 314/2005 (XII.25.). In this impact assessment the harmful or advantageous impacts partly or entirely taking place in the environment have to be analysed. The assessment covers the changes occurring in the quality of soil, air and water, land use, energy consumption, waste treatment, etc. According to Koloszár et al. – who were concerned with measuring the benefits of environmental protection measures and regulations – it is difficult to determine the benefits of environmental protection. In a study published in 1997, they identify the difficulty of measuring the benefit in the fact that these commodities (for e.g. recreational opportunities, a fine view, etc.) do not appear on the market. In spite of that, the authors think the benefit can be measured by "attaching it to a product on the market, such as the popularity of the pleasure resorts, that can be measured" (Koloszár et al. (1997), pp. 24-25). One of today's most serious environmental pollutions is noise pollution. According to Baros (2012), the urban noise caused mainly by traffic can be measured via objective and subjective methods. The disadvantage of the objective method (instrumental measurement) is that it does not take the impacts on the individual into account. The most appropriate method for measuring such impacts is surveying (Baros (2012), pp. 4-9). The waste management which may modify the state of the environment may also influence the way of life and the scale of values of the population (Buruzs and Torma, pp. 2-3).

The Method of Quantification

The benefit impacts may be determined in natural units of measure or in a value of money. In order to make the benefits emerging as the expected results of a project comparable, sums of money have somehow to be attached to the factors determined in natural units of measure in order to make them expressible in value of money. Due to several reasons, the quantification of the benefit impacts is difficult in the case of project variations related to public policy decisions. It is important to emphasise that the benefits may either be monetised or they may not be expressed in terms of money; they can be of quantitative or qualitative nature, so thus, the benefits have somehow to be converted in order to make them comparable and enable the calculation with the entire economic value of the given investment project. For example, in Hungary COWI Hungary Ltd. – commissioned by the National Development Agency – prepared a detailed study related to the development of transport. Out of all effect components emerging in such projects, the travel time savings, the decreasing accident risk, the lower fuel costs and the environmental impacts are estimated. However, there are effect components whose monetization is not necessary unless the judgment of the project is not clear-cut. Such effect components may be the impacts on spatial development, wildlife and landscape. In order to simplify the quantification of the travel time savings and make it well arranged, the impacts on existing and new passengers are analysed separately (National Development Agency (2009a), pp. 73-105). The existing passengers may experience a change in terms of traveling circumstances and travel time, such as the reduction of travel time, crowdedness, and waiting time and increased comfort (Farkas, pp. 2-6). When analysing the accident risk, it has to be taken into account that with the increasing number of vehicles in traffic, the number of eventual car crashes may also increase. However, certain studies come to the conclusion that the accident risk decreases with the increase of the traffic, which could be accounted for by the decrease in the speed. The estimated value of this can be calculated on the basis of the probability of accidents classified as fatal accidents, accidents causing major injury, and those causing minor injury. In order to make the traffic development investments of the EU member states comparable, the European Union has launched the HEATCO (Harmonised European Approaches for Transport Costing and Project Assessment) project (Egyházy (2007), pp 144-146). The guides developed in Hungary determine the travel time savings and the changes in accident risk, as well as the difference in the environmental impacts based on the results of the HEATCO study (National Development Agency, 2009a).

According to the Chronological Manifestation

The cost-benefit analysis must cover the useful lifespan of the project proposals or, if this can not be determined, the application of a 20-30-year time span is recommended (IT Commission of Administration, 2009: p. 11). From a chronological point of view, the benefit impact may manifest itself immediately but also years or even generations later. As Adorján pointed out in his research concerning the field of education, the benefits presented in the cost-benefit analysis often manifest themselves only generations later. So thus, in case of such an investment it is not only the expected lifespan of the given institution that must be analysed, but also the length of the time span during which the benefits originating in the investment will manifest themselves for the society (Adorján, 1999).

According to the Geographical Expansion

The benefit impacts to be determined in the cost-benefit analysis may be analysed according to their geographical expansion. They may affect the inhabitants of a settlement, the population of a county, the society of the entire country or may even have an impact on the global society as well (Bartus et al. (2005), pp. 6-9). A certain part of the impacts manifest itself at local level. According to the Hungarian regulations, such is the environmental protection which has to be defined as a local task that may include the reduction of noise emission which may be realised as protection against traffic, industrial, etc. noise, as well as the protection of the natural and artificial environment which means the preservation and restoration of the values and their prevention from being damaged (Horváth (2007), pp. 17-20).

SUMMARY

The estimation of the benefit impacts in the cost-benefit analysis is extremely complicated. The processed English- and Hungarian-language studies are not uniform regarding the methodological principles used to analyse the benefit impacts. As a result of the research of the method, the author has constructed a model regarding the manifestation of the benefit impacts, based on which the benefit impacts may simultaneously be characterised according to six major aspects. The major classification determinants were the following: the relationship of the project and the benefit impact, the level of the manifestation, the area of the manifestation, the method of quantification, chronological manifestation and geographical expansion. The benefit impacts may be divided into elementary methods according to the major features. This means that, according to the major aspects, the benefit impact may manifest itself directly or indirectly, at individual or social level, in the field of the economy or the environment; it may be expressed in natural units of measure or in value of money, it may manifest itself in the short-term and long-term and it may expand to local, regional, national or transnational areas as well. These elementary methods are not completely independent from one another; this means that the application of certain method components may simultaneously lead to other possible solutions, and it does not exclude the chance that the benefit impact is simultaneously characterised by different elementary methods.

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Corporate Sustainability and Managerial Competencies

GYULA FÜLÖP, Ph.D.
UNIVERSITY PROFESSOR

e-mail: vgtfulop@uni-miksolc.hu

SUMMARY

This study deals with sustainability (a challenge to reshape conditions of company operations) and managerial competence principles. First, it provides a comparative review of the relevant and important international literature. In the next step, it summarizes six considerations that contribute mostly to the successful development of managerial competence compliance with sustainability requirements. These six interconnected specific guidelines are a common goal, long-range approach, emotional commitment, opening to the public, innovation and self - organization. Finally, it presents the major issues of the further research. This paper can make a contribution to put sustainable development into practice.
Keywords: new strategic challenges; corporate sustainability; managerial competences
Journal of Economic Literature (JEL) code: M14

INTRODUCTION

Together with the tendencies of earlier centuries, corporations operating in the 21st century need to face new, ever more significant challenges. One of the most striking challenges is sustainable development, or sustainability in itself, as it has become a central issue for today's corporations and it also has an outstanding impact on the majority of a corporation's business operations. According to Kerekes and Wetzker (2007), corporations bearing in mind such criteria for sustainability as economic goals, social orientation and environmental awareness have to be prepared for the fact that, while social and environmental standards have become more stringent, the social and environmental nature of their activities will eventually be one of the most important factors of their competitiveness.

The European Union is also paying increased attention to the issue of sustainable development. In 2010 the European Commission relaunched the Europe 2020 Strategy, identifying sustainable development as a particularly important driving force for recovering from the economic crisis (EUROPE 2020, 2010).

Nevertheless, the management of numerous corporations is committed to the belief that the more environmentally friendly their corporation becomes, the bigger their loss in competitiveness will be as a result of their efforts. They share the view that maintaining sustainability can only be achieved by involving extra costs and it does not bring immediate financial benefits. This, however, does not correspond to reality, as sustainability is a rich source of organizational, product and technological developments, which is reflected in both revenues and operating results as well. While the idea of sustainability deeply influences the life of corporations, they cannot state – especially in the Eastern European countries – that their activities are in line with the principles of corporate sustainability, mainly because of the lack of related theoretical and methodological knowledge and leadership shortcomings. This assertion is underlined by the findings of a previous experimental survey conducted among Hungarian enterprises (Fülöp and Pelczné Gáll, 2010):

- Regarding the options of adapting to the fundamental requirements of corporate sustainability, 61 percent of the corporations think the solution is to identify environmentally-friendly products (to use environmental labelling). In the meantime, making institutional arrangements more sustainable (making environmental claims against corporations) is preferred by 43 percent of corporate leaders.
  It is food for thought however, that the possibility of extending sustainability (by introducing explicitly written guidelines or laws) was selected by less than a third of managers (30 percent). In any case, this indicates a positive change in the mindset of corporate leaders, which may result in significant consequences for their practical efforts in the near future.
- The emerging obstacles to sustainability are explained by corporations with the following factors. Forty-three percent of the responding corporate leaders fully and 39 percent of them partially agree with the statement that the topmost hurdle is legal uncertainty (that is, regulations may exclude environmentally preferable products). The same number of the respondents with different distribution expressed their full (17 percent), or partial (65 percent) agreement in the inappropriate selection of the focal points of green procurement (from daily purchases and construction to delivery) as a major inhibiting factor. Reaching a partial consensus of 57 percent among the respondents, a further problem is the existence of internal institutional or organizational barriers (the lack of precise targets and systems for settlement). It takes many years for corporations to eliminate these obstacles by pursuing conscious and systematic activities in the field of sustainability, with the simultaneous development of leadership competencies.

Based on the principles of sustainability, those corporate leaders can be considered competent who, firstly, take the responsibility of operating their corporations in a broader sense that goes well beyond economic responsibility and integrates social and environmental concerns as well, and secondly, have the ability to integrate elements into their everyday decisions and activities that allow the practical manifestation of their

broader responsibility, as was noted by Szegedi in his study (2011).

It can be seen from the above notions that the development of adequate leadership competencies is far from being an easy task. In this study, therefore, the findings of the research and publications about corporate sustainability leadership competencies are overviewed first. The following section reviews the aspects related to the development of corporate leadership competencies according to the interpretation of corporate sustainability. Finally, the most important directions for further research are summarized.

LITERATURE REVIEW

In the literature (see van Kleef and Rommel's study, 2007) the competencies are seen as the basis of competitiveness. These enable a company to offer products and services of value to customers and to innovate in order to generate new products and services, while adapting to changing circumstances faster than competitors. For this reason our review of the literature set out to identify the research on competencies for innovation in the context of competitiveness and corporate sustainability.

The Competencies to Innovate for Competitiveness

Innovation is the process of inventing and applying a new idea (Galbraith, 1996). In order to support the continuous innovation, first, a company has to change rapidly, strategic variety and experimentation are more suitable to create competitive advantages than optimization (Tushman and O'Reilly, 1997). An effective combination of competencies for optimization and innovation may be found through the development of an ambitious, integrated organization with cultures for efficiency, consistency, reliability, and for experimentation, improvisation and entrepreneurial abilities.

Second, understanding innovation processes makes it necessary to take account of all the important factors that influence innovations. Together these factors form 'systems of innovation' (Edquist, 1997). In these systems, different types of actors experience different learning processes and therefore have different perspectives on problems and opportunities. Moreover, the innovative competencies of a company may be enlarged through co-production of knowledge with partners at all levels in the organization.

Companies strengthen their competence to innovate by developing the competencies of employees within the organization (Hargadon and Sutton, 2000). These competencies relate to systems thinking, learning, combining and integrating, thinking inventively, networking and coalition building. A key issue is how these competencies compare with those identified by authors who focus on the competence to innovate for corporate sustainability. In the next section we, therefore, consider what the literature says about innovation for corporate sustainability and competencies that support that form of innovation.

The Competencies Contributing to Corporate Sustainability

The definition of corporate sustainability states that economic interests cannot be isolated from social and ecological limits and interests. For example, sustainable business takes into account the interests of future generations, biodiversity, animal protection, human rights, life cycle impacts, and principles like equity, accountability, transparency, openness, education and learning, and local action and scale. Innovation for sustainability involves networks of actors with very different perspectives, interests, and cultures spanning different levels and contexts.

Table 1 shows the competencies that underscore the work of various authors and that support the competencies in innovation for corporate sustainability. In this table, six comparable competence categories are used. This competencies are in the fields of systemic thinking, learning, integrating, developing alternative models and methods, networking and building coalitions that span diverse groups. A quick comparison shows that the competencies for innovation for competitiveness and corporate sustainability partly overlap. This is not surprising as competitiveness is merely one part of the larger concept of sustainability. This comparison also suggests that innovation for corporate sustainability is a specific and complex organizational competence that is different from the competence of innovation for solely competitive reasons. A look in more detail at the nature of the main differences leads to two critical observations.

- The competence to discover new or unknown options (category 4 in the table) is rarely mentioned in the literature. In the case of innovation for competitive reasons less than half of the authors briefly mention this competence without references to methodical approaches to their development. In the case of innovation for corporate sustainability, only 4 out of 18 authors mention this competence. Moreover, as sustainability is seen to require radical innovation this competence becomes even more critical. Lack of attention to the development of methods and competencies for discovering unknown options is seen as a serious omission in both bodies of research, especially given the importance of inventiveness in the development of sustainable options.
- The literature on innovation for corporate sustainability often refers to networks of actors that are larger and more diverse than those in the literature on innovation for reasons of competiveness. For example, these networks involve interests representing environmental and social concerns, and the network specifically includes actors with local knowledge. Comparison of the six categories of competencies in Table 1 with those in the literature on innovation clearly shows the focus in innovation for corporate sustainability is on communicating and collaborating with very diverse and culturally unfamiliar (and or local) networks of actors, on integrating their diverse perspectives, criteria, and information processing and decision styles; these concerns are not found in the literature on innovation for purely competitive reasons. These qualitative differences in the type, scale and character of the issues are significant in the two kinds of innovation processes. Competencies have to be able to accommodate these very diverse perspectives while operating within a multi-organizational system that is sensitive to locality.

THE GUIDELINES FOR THE DEVELOPMENT OF MANAGERIAL COMPETENCES

In this section, based on both the above-mentioned literature as well as on the work of Fülöp and Hódiné Hernádi (2012), Kanter (2011) and Prahalad and Hamel (1990), six criteria are described below that may contribute to the

successful development of the most appropriate managerial competencies fitting to the current needs, resulting in a radical change in both leadership and corporate behaviour.

Common Goals

As companies grow, take over other companies or withdraw their capital from them, their business portfolio changes frequently; as a result, working positions and roles also often change. This brings uncertainty to the minds and actions of employees. The formulation of a clear set of objectives and corporate values can help to solve this complex problem.

Business uncertainty can be compensated by creating values based on a common goal. Sustainable corporations offer ideas containing a higher level of meaning and purpose than just resorting to offering business transactions and business portfolios. Being aware of the defined goal pervades the whole organization with meaning, "institutionalizing" the company as a close part of society, in a manner of speaking. One of the central tasks of corporate leaders is to provide a meaningful purpose for business operations and, in turn, that purpose provides coherence within the organization. Among other things, the determination of common goals and values includes activities aimed at creating and strengthening the culture of the organization but its meaning reaches well beyond that. Organizational culture is often a by-product of the series of previous steps, and it is a passive result originating from past activities. The definition of common goals and values is an investment in activities and relationships that does not immediately lead to results in terms of business but that reflects the set of values envisioned by the company and determines the key to its long-term survival.

Long-term Approach

In order to keep corporations alive, resources are needed and the logic of finance accordingly requires intense attention to figures. If a company is regarded as a social institution, a long-term perspective is established according to which the short-term financial sacrifices needed for the company's survival in the long run can be justified by the corporate goals. Sustainable corporations are willing to compromise on short-term financial opportunities which are not in accordance with their organizational values. Such values are in the focus point of a company's reputation, as are product quality, characteristics of the existing range of customers and the by-products of the manufacturing process. Companies may enter into an in-depth screening process for assessing the social norms and the financial state of their potential customers. As a result of the assessment process, they are able to give up on those potential customers who have failed the test of environmental and social responsibility. This short-term sacrifice actually means careful risk management in the long run.

Emotional Commitment

Utilitarian rationalism is not the only driving force affecting business performance and attitudes within an organization. Emotions play an almost equally important role. People's moods are often contagious and can have an effect on such factors as work absenteeism, health care, work efforts and the level of energy input. People have an influence on each other, and in this way they either enhance or offset each other's level of performance. If properly understood, corporate values and principles may be the appropriate sources for an emotional appeal that may increase employees' commitment.

If we adhere to the logic based on the foundations of common goals and defined values, the continuous expression of corporate values becomes an important part of business operations. At companies respecting the requirements of sustainability, work is accompanied by an emotional drive, and the operation of the whole organization conveys much more meaning than in the case of a less sustainable personal cult. Top leaders illustrate and communicate the values and goals of their corporation through their own activities and those values are shared by the whole organization, integrating into the tasks, objectives and performance standards. Instead of being dependent on the leadership of charismatic persons, sustainable corporations turn charisma into a "routine", pervading the organization as a whole.

Opening to the Public

For the sake of obtaining new business opportunities, it is not only needed to cross sectoral borders but corporations also need to deal with public affairs beyond their regular business activities. In order to achieve that, the establishment of PPPs (partnerships based on cooperation between the public and the private sector) is necessary in which corporate leaders weigh up social interests together with their own business interests.

The number and the significance of PPPs dealing with social demands is growing, being especially widespread among corporations representing social responsibility. At these companies, managers do not groom their relationships with public officials in order to demand any form of compensation in exchange or so they find it easier to get something done. Instead, they seek to understand and take part in the public affairs on the agenda, all the more if they have an influence on their development.

Many people's contribution is needed for building partnerships with the public. The more top interest corporate leaders show in external relationships, the greater the likelihood that others will also be involved and rewarded for establishing partnerships at the local and national level. When corporate leaders realize that they have a social goal, they can choose whether they wish to contribute to the realization of that goal at a local, national or even a global level.

Innovation

Companies stressing the importance of social and environmental responsibility can become credible when managers devote time, talent and resources to local or national projects without the prospect of immediate return, and when they encourage the population of a given country to serve the interests of a different country as well. The framing of a more comprehensive goal than just making money can provide guidance in determining sustainability strategies and actions, opening new sources of innovation, and helping people to enforce corporate and personal values in their daily work. The attention directed at social and environmental needs often gives birth to ideas that can eventually lead to innovation. Thinking over the insatiable needs of society and the growing number of environmental aspects may bring innovations that may end up in a business model innovation.

Reaching common sustainability goals is promoted when individuals are given the opportunity to serve the society and the environment with the assistance of corporate resources. Similar interactions express the values stressed by corporations and offer a valuable learning opportunity at the same time.

Table 1
Overview: Managerial competencies suggested by authors, to be developed for an organizational competence in innovation for corporate sustainability

Authors / Managerial Competencies	European Commission (2001)	Roome (2001)	Clarke and Roome (1995)	Sweet et al. (2003)	Partidario and Vergragt (2002)	Remmen (1995)	VROM-raad (2002)	Rip et al. (1995)	Herbold (1995)	Hawk (1999)	Boons and Berends (2001)	Jelsma (1995)	Shilling and Osha (2003)	Martens et al. (2003)	Foster and Green (2000)	Dyllick and Hockerts (2002)	Winter and Steger (1998)	Wynne (1995)
1. System thinking	v	v	v	v			v			v				v				
2. Competencies for learning and developing																		
a) To learn and translate learning into action, to deal effectively with the requirements, values, assumptions and cultures of various interacting network actors, to successfully understand and execute innovation activities with the network	v	v	v	v	v	v	v	v	v		v	v				v	v	v
3. Competencies for integrating business, environmental and social problems, perspectives and information																		
a) To integrate the perspectives and knowledge of different actors in the network	v	v	v	v	v	v		v					v					
b) To integrate traditional criteria of efficiency with eco- and socio-efficiency and effectiveness	v	v					v	v						v		v		
4. Competencies to develop alternative business models, methods and trajectories that are more synthetic, dynamic, and pragmatic, to enable radical or systemic innovation		v			v		v			v								
5. Networking and social competencies																		
a) To develop social relations with (culturally) unfamiliar actors in- or outside the organization for information gathering, experimentation and negotiation	v	v	v	v	v	v			v	v	v	v			v		v	v
b) To create and cultivate broad, diverse, inclusive networks for learning to cope with uncertainty and for gathering information and diverse approaches from actors	v	v	v		v	v			v		v	v	v		v			
c) To build trust, a shared vision and agreement on basic values		v		v	v					v	v							
d) To involve local actors & initiatives	v	v				v			v				v	v				
6. Coalition and collaboration building competencies																		
a) To promote joint action by many different (local) stakeholders, an open process of innovation and adaptation, building a shared vision, supporting collaboration and collective problem finding	v	v	v	v	v	v	v	v	v			v	v	v	v			
b) To integrate differences in information processing and decision styles, to deal with differences in the width of focus and the desired degree of maximization of the result				v														

Self-organization

According to the logic of corporate sustainability, people are neither hungry slackers waiting for their pay slip after making hardly acceptable efforts, nor robots that can be ordered to come up with an outstanding performance. On the contrary, employees decide themselves where, when and with whom they work. The allocation of resources is not only determined by formal strategies and budget processes but is also shaped by informal relations, spontaneous actions, and the preferences of people working at different levels of the organization.

The managers of corporations aspiring for sustainability assume that they can trust people, and aside from relying on rules and structures, they can also rely on relationships. They are more likely to treat employees as independent and unconstrained professionals who coordinate and integrate their activities through bringing in new ideas and self-organization. The managers of these companies are aware that the framework of formal structures, being either too general or too strict, does not allow the multi-directional flow of ideas and resources. Strict controlsuppresses innovation. Informal, self-organizing, unconventional and transient social networks are more flexible and able to quickly develop a relationship with people or resource groups. Employees working without formal instructions operate as explorers and entrepreneurs.

THE ISSUES FOR FURTHER RESEARCH

The aspects presented above are interrelated. They have numerous common characteristics, reflecting leadership competencies and styles that pervade the whole company. The managers of sustainable corporations make their decisions by taking these specific aspects into account. In doing so, they establish new competencies and models for action with which they can restore confidence in their business.

We discuss ideas and guidelines drawn from presently rather fragmented knowledge about the formal and informal organizational factors that enable the development of the managerial competencies. This leads us to suggest a number of areas for further research. While our research focus is on competences in the firm and its network it is also clear that there is a public policy agenda that follows from our findings in this paper. A set of key research issues seem crucial to a better understanding of innovation for sustainability in relation to public policy and management in firms. There are also some methodological issues for research identified below.

Among the research issues that arise from this paper we suggest the following.

- As competencies and skills for sustainable innovation are fostered in national innovation systems, this raises questions such as which national systems are most effective in fostering those competencies, and why are they successful?
- What policy actions and levers best promote and foster innovation for sustainability involving business and other social factores?
- What is the appropriate balance between the role of public policy and company practice in promoting innovation for sustainable development?
- In terms of the process of innovation within companies and networks involving companies, research is needed to address our understanding of the development of competences for participative innovation for corporate sustainability. In particular: how do we recognize the competencies in managers that build the competence of collaborative innovation for corporate sustainability?
- How do managers and others in possession of competence in inventive thinking and other competencies develop them, and how do they develop the capacity to take specific roles in the innovation process?
- How do these competencies fit together in ways that build organizational competence in bringing forward innovation for sustainability?
- In the case of management research there are critical issues about the way to study the development and deployment of these competences in a given company, or network, especially as their development through experience implies the need for longitudinal, historical or event studies that track changes in potentially tacit skills. How might the key competencies and roles be observed and measured and to what extent do they each need to be present in a team or network or organization to enable corporate sustainability to flourish?

In our opinion, these issues could provide a valuable contribution to the body of knowledge on corporate sustainability as a way to build a theory of innovation for sustainability, to develop education and organizational development programs that foster the competencies for corporate sustainability, and to guide companies and public policy in a transition towards corporate sustainability as a contribution to a more sustainable pattern of production and consumption.

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Green Accounting for Corporate Sustainability

BETTINA HÓDI HERNÁDI
ASSISTANT LECTURER

e-mail: vgtbetti@uni-miskolc.hu

SUMMARY

Today, corporate sustainability is one of the greatest challenges facing companies. Therefore, this study aims to show how accounting, as the language of business and the source of information, can meet the criteria of sustainability. This article starts out by analysing the different approaches to corporate sustainability, then it proposes the reinterpretation of the most important accounting principle, the 'going concern' principle. In the following section it outlines the characteristics of accounting from the point of view of sustainability. Finally, it proposes ways of transforming green accounting, both in name and content, into sustainability accounting.
Keywords: corporate sustainability; the 'going concern' principle; green accounting (environmental accounting); sustainability accounting
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INTRODUCTION

According to the Brundtland Commission (1987, p. 43), "Sustainable development is development that meets the needs of present generations without compromising the similar needs of future generations. The concept interprets sustainable economic, ecological and social development as a unity." Today's companies must also comply with the challenges stemming from this approach, and therefore they must also implement economic, social and environmental goals. The reduction of pollution, the equitable distribution of wealth and improved social services pose a challenge to management, as the value of the company has to be increased for the stakeholders in such a manner that social and environmental responsibility should not be neglected.

CORPORATE SUSTAINABILITY

The concept of sustainable development is generally understood at the global level, which is the most difficult to apply at the organizational level (Gray and Milne, 2002). As far as corporate sustainability is concerned, its interpretation poses a problem, due to the fact that the academic literature during the last decades (for example: Reed and DeFillippi, 1990) has interpreted the concept of sustainable as continuity. Consequently, we have to re-interpret the accounting principle of continuing the enterprise, since now the realisation of the ideal of sustainability is a necessary but not sufficient condition for a company's survival.

First, however, we have to clarify what is meant by corporate sustainability and determine if there is a precise definition which applies to all companies. On a company level it is not necessary to distinguish between sustainability and sustainable development. The reason the word sustainability is used in this context is because it is the commonly used term.

In the literature, there is currently no unified position on corporate sustainability, so we can group the approaches as follows.

a) John Elkington's (1997) name is linked to the triple optimisation of corporate sustainability, or the essence of the three-legged approach (Triple Bottom Line), according to which there are three pillars of sustainability: economic, social and environmental sustainability. Corporate sustainability is defined as a situation in which the organization has to achieve the highest performance in all three – economic, social and environmental – areas. However, two problems arise with this approach; firstly there is no clear balance between the performance achieved in the separate areas, and secondly, it is difficult to assess the acceptability and sustainability of social and environmental performance (Gray, 2006).

b) According to the Professional Accountants in Business Committee (2006), corporate sustainability and corporate social responsibility (CSR) are very commonly considered equivalent, and the two terms are often used interchangeably, because it is believed that CSR is the corporate approach to sustainability (Bansal 2005, Ransburg 2011). However, while the first term suggests a long-term perspective in order to increase the base capital of corporations along the three dimensions, CSR is seen as a short-term concept, i.e. the operationalisation of corporate sustainability. However, the problem with this approach is that while the company can strive to be responsible, it is not certain that the company will be sustainable. In practice, however, for many companies this is what is meant by corporate sustainability.

c) Wilson (2003) combined the above two approaches and, expanding the concept of corporate sustainability, defined it using the following four factors:
   - ➢ the concept of sustainable development, which designates corporate targets along economic, social, and environmental dimensions;
   - ➢ corporate social responsibility (CSR), which provides an ethical motivation as to why we need to achieve sustainability objectives;
   - ➢ the involvement of stakeholders (stakeholder theory), which takes into account the business-orientated reasons why the company must seek to achieve sustainability;
   - ➢ the company's reporting obligations, which set out the ethical reasons why companies have to report on sustainability performance.

d) Doyle (2000), Vágási (2004) and the Dow Jones Sustainability Indexes - Dow Jones Sustainability World Indexes Guide (2011) issued by the Sustainable Asset Management AG use a commercially viable approach to corporate sustainability, with the aim of increasing shareholder value (enterprise value) in the long term by companies exploiting their opportunities and reducing the risks in the areas of economic, social and environmental development. "Corporate sustainability leaders achieve long-term shareholder value by gearing their strategies and management to harness the market's potential for sustainability products and services while at the same time successfully reducing and avoiding sustainability costs and risks (Dow Jones Sustainability Indexes, 2011, p. 9). "However, the realisation of sustainability principles would mean that while there would be a reduction in our ecological footprint and social inequalities would become fairer, most of the companies listed on the stock exchange would be destroyed, because for the shareholders this is not attractive business behaviour, because it could lead to the reduction of their dividends. Since this only emphasises the interests of the shareholders, the following approach already takes into consideration the future needs of shareholders and other stakeholders.

e) Dyllick and Hockerts (2002), Danchev (2006), Ebner and Baumgartner (2006), and the Professional Accountants in Business Committee (2006) derive corporate sustainability from total sustainability, from sustainable development. They are convinced that the organizational approach to sustainable development is corporate sustainability, and, that just like sustainable development, it has three dimensions – economic, social and environmental – which interact with each other. In addition, according to Dyllick and Hockerts (2002), all the needs of the corporation's internal and external stakeholders (such as shareholders, employees, clients, pressure groups, communities, etc.) must be met in such a way that the similar needs of future stakeholders are not compromised. Furthermore, organisations must retain and increase their economic, social and environmental capital in such a way as to help the country's as well as the Earth's sustainability.

f) Marrewijk and Were (2003) argue that there is no precise definition of corporate sustainability, that is, every company has to decide what it means in order to meet its goals and objectives. Examining the for-profit companies listed on the Hungarian stock exchange three basic key factors can be highlighted in the interpretation of corporate sustainability: long-term shareholder value creation, corporate social responsibility and taking into consideration the interests of all the stakeholders together. The different approaches to corporate sustainability are summarised in Table 1, illustrated by a corporate example.

g) The heuristic multi-dimensional approach of Schaltegger and Burritt (2005) discusses corporate sustainability alongside the traditional three dimensions (economic, social, environmental), but focuses on their interaction. I believe that this is the most complex approach to corporate sustainability, as this describes in best way the essence of corporate sustainability; therefore, in the following sections I use 'corporate sustainability' in this sense. Since corporate sustainability is at issue, essentially we are dealing with profit-making companies, therefore, the harmonisation of the three dimensions can only be realised through the sustainability aspects of corporate sustainability.

The Multi-dimensional Model of Corporate Sustainability

A company will be considered economically sustainable if, firstly, it fulfils the principle of continuity, and secondly, there are no liquidity problems in the long run, and thirdly, as Illés (2002) expresses it: in addition to the fixed costs the owners' profit expectation (return requirement) is not only met, but moreover, additional earnings are also generated. In this regard, the company is economically sustainable if it maintains, or increases, both its own value and the shareholders' value. Of course, the company does not only need financial capital for long-term survival, but also the intangible assets (knowledge, reputation, corporate culture) that contribute to financial capital must be integrated into the concept (Kaldschmidt, 2011). The fundamental purposes of the operation of traditional for-profit businesses are economic considerations such as increasing shareholder value, increasing the profitability of products, or cost reduction. However, companies wishing to meet criteria imposed by social and environmental sustainability have to fulfill additional requirements. That is, the maximum economic results have to be achieved while also taking into account the principles of sustainable development. In practice the concept of an economically sustainable enterprise is derived from economic efficiency, which has two components. Environmental efficiency (eco-efficiency) has to be increased, while social efficiency has to be improved.

Table 1
Corporate sustainability as it is interpreted in practice

Approaches to corporate sustainability	Interpretation of corporate sustainability	Corporate Example
Long-term shareholder value creation	Sustainable Development, for us, means a corporate commitment to the balanced integration of economic, environmental and social factors into our everyday business operations, to maximise long-term stakeholder value and to safeguard our licence to operate." (MOL)	MOL Nyrt.
Corporate social responsibility (CSR)	"The key part of the Richter's strategy is the sustainable development: its long-term plans are formed regard to economic, environmental and social expectations, thereby creating security for its investors, environment and employees. The part of the corporate social responsibility is continuous dialogue with the partners, investors, representatives of civil society and the various authorities" (Richter) "Besides its business success OTP Bank, as the largest bank in Hungary pays special attention to the financial support of activities and events that serve the improvement of social values by the responsible operations, and contributes to the realization of important social goals. Our goal is to convert risks into opportunities, reinforcing the Group's long-term sustainability and the strengthening of trust." (OTP)	Audi Kft., CIB Zrt., E. ON Hungária Zrt., K&H Bank Nyrt., Gedeon Nyrt., Richter, OTP Nyrt., Vodafone Zrt., Zwack Unicum Nyrt.
Taking into consideration the interests of all the stakeholders together	"The key element of the company's strategy is the sustainability. For the Company, this management approach means striking a long-term balance between the interests of stakeholders in the course of implementing the company's strategy and operation. Based on this, it does not wish to make interests of any one group of stakeholders dominant to the detriment of the others." (E-Star Alternatív Nyrt)	E-Star Alternatív Nyrt.

Source: own elaboration based on company reports, 2012

Eco-efficiency (the efficiency of the use of natural resources) is a relative indicator, which is the ratio between the added value and environmental damage (with added ecological impact). The added value can, for instance, be the difference between the sales and acquisition costs of the purchased inputs, whereas the added ecological impacts can be the natural resources, energy, or water consumption of a product or activity, the amount of waste or pollution generated by them, i.e. the resulting adverse environmental effects generated during the company's entire product lifecycle or the environmental damage induced by corporate operation (such as the delivery process).

Social efficiency is a relative indicator by which we understand the social effects projected onto the company's added value. While environmental impacts are always negative, social impacts can be negative (work-related accidents, violations of human rights) or positive (job creation, business grants, donations) as well. Thus social efficiency can be increased by reducing the negative social impacts and increasing the positive potential of the company.

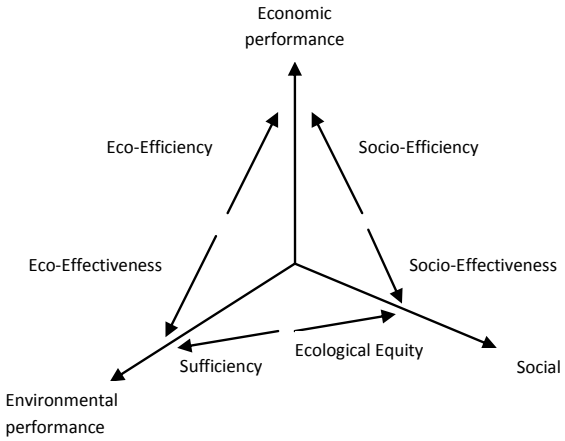
Economic efficiency can thus be improved by both increasing environmental efficiency (by increasing value added and/or environmental damage mitigation), and by improving social efficiency (increasing value added and/or negative social impact reduction, combined with increasing added value and/or positive social impacts). It is important to note that the efficiency indicators can consist not only of economic (financial) and natural ratios, since a financial relationship may not be necessary to establish indicators.

Through its operations the socially sustainable company contributes to the creation of social value by increasing individual human capital as well as by supporting social goals (Dyllick and Hockerts, 2002). The company's goal in this regard is to reduce socially undesirable impacts and to enhance positive social impacts. It is in this way that a company sensitive to sustainable development attains social acceptance and legitimacy (equity, justice, fairness), which may, indeed will, have economic consequences. Accordingly, we can talk about social efficacy (social performance), which shows the company's ability to reduce the negative social impacts in absolute terms, and the extent to which it can increase its positive social impact in the light of society's expectations. In this case we can also think of the different stakeholders.

Environmentally sustainable companies are characterised by rational use of natural (exhaustible) resources, the minimisation of the polluting effects (such as waste) of the enterprise's activities and the use of renewable natural resources by taking into account their renewable capacity (Állami Számvevőszék Fejlesztési és Módszertani Intézet, 2005). In addition to this there is the maintenance of biodiversity, namely the preservation of fauna and flora. In this context, environmental efficacy should be kept in mind. The concept of eco-efficiency (environmental performance) is understood to mean the company's absolute environmental performance, which is the most fundamental measure of the minimisation of its environmental impact. After all, an essential feature of environmental capital is that it is difficult or impossible to replace and it is finite, hence the need to examine the state of the environment in absolute terms. From the viewpoint of environmental sustainability the company must consider and mitigate both direct and indirect effects. Specifically, it is not enough to carry out its activities in an environmentally sustainable way, since in this sense a product or service it produces should by itself be increasingly environmentally sustainable.

Corporate sustainability therefore can only be achieved if the company is sustainable along all three of the above-mentioned dimensions. Thus integrating economic, social and environmental sustainability is essential; a challenge, which actually means the combination of economic, social and environmental aspects, as well as simultaneous compliance with this triple system of requirements; it is also an issue of methodological integration. For the realization of this integration the Sustainability Balanced Scorecard (SBSC) is an appropriate tool. Of course, this stage – achieving integration – is considered the most difficult according to Malovics (2009).

In this light we can talk about corporate sustainability if we take into account the interaction between both the economy (the company) and the environment, and the relationship between the economy (the company) and society. Figure 1 illustrates these relationships.



Source: own elaboration, based on Almeida (2006)

Figure 1. The multi-dimensional model of corporate sustainability

However we interpret corporate sustainability, it can only be attained if the owners and management of the company are committed to sustainability, and to achieve this a sustainability strategy is established and implemented (Fülöp and Hódi 2012). In the growth of the social and environmental activity of the company the role of accounting information – especially social and environmental information – takes on greater significance. The most important element in information related to corporate sustainability, which acts as a basis of the sustainability strategy, is information provided by green accounting and sustainability accounting.

CHANGES IN TRADITIONAL ACCOUNTING METHODS

The above-mentioned corporate sustainability, as the latest company objective, requires that companies are in possession of – among other things – a sustainability strategy and the kind of accounting information that can satisfy the new requirements and help the company's management to make decisions in the interests of the company's sustainability in a responsible framework. In other words the accountancy process, as the language of business and the source of information, must meet sustainability requirements.

The Principle of Corporate Continuity Versus Sustainability

One of the most important accounting principles is the 'going concern' principle, which declares that "the preparation

of the company report and company accounts must start from the principle that the operator of the business will also be able to maintain its operation in the foreseeable future, to continue its activities, and that the cessation of the business, or a significant reduction in its operations for whatever reason, is not expected." (Accounting Law C. 15. § (1), 2000). This means that the company does not intend to, and/or does not feel the need to, wind up or drastically cut down on its business activities. If the principle of continuity is not achieved, then several basic principles of accounting cannot be realised. For this reason it must be given great attention, since it is the basis of accounting regulations. The principle of accounting deals with the creation of the conditions for economic operations, and traditional accounting conceives of the economic organisation as a closed system, existing independently of its social and natural environment (Almássy, 2006). In contrast, corporate sustainability declares that the company can only have long term profitability if it does not ignore its effects on society and the environment and – reciprocally – the effects of society and the environment on the company.

So the problem lies in the understanding of the concept, since this suggests the idea that an unchanged external environment makes it possible for the company to continue its activities in an unchanged form, and this supposes that if the principle of corporate continuity is maintained, then the activities will also themselves be sustainable. In reality, however, according to Aras and Crowther (2008), companies just confuse continuity with sustainability. Therefore the external environment of the company must be part of the business environment in which the company operates, the local social environment in which the company finds itself, and the natural environment which restricts the company's operations.

In my view the principle of corporate continuity can be modified in the light of sustainable development. In other words companies must reform their activities in such a way that long-term operation is not just manifest in economic performance, but alongside economic (financial) considerations, the company, taking into account social and economic factors, ensures that the effects it has on society and the environment also make it possible to operate in the long term. Of course, this change will have an effect on all the basic principles of accounting.

What, in my opinion, might postpone (or at least slow down) the legislation necessary to change the company accounting system in favour of sustainability is probably the idea that market competition will eventually force companies to operate in a sustainable way, since otherwise they will not be viable in the long term. Therefore, at the moment this is a form of voluntary behaviour, with which companies can extract competitive advantage, but in the future those who do not conduct their activities in this spirit will be at a disadvantage.

Those Needing Accounting Information, and its Content

Since accounting is the source of information, and thus is used to prepare and carry out decisions, it is important that those needing information have the right kind at their disposal. In this sense two questions must be answered: who needs to be provided with accounting information, or in other words, who is it that makes up the group who can request information? And what should be the content of this information? Of course, traditional accounting answers these questions, it is just that with the spread of the concept of sustainability and the significant changes it brings, these questions must be examined again.

Accounting information must be provided to stakeholders, i.e. individuals or groups who have a mutual relationship with the operations of the company, and are in some way affected by the company's activities. Internal stakeholders are the owners, the management and the employees; external stakeholders are the government, professional or occupational organisations, social organisations and other individuals or organisations (auditors, tax advisors, legal representatives), etc. So the company must not only create value for the shareholders and the owners but must also take into consideration the interests of other stakeholders when making decisions, and thus provide them with the information they require.

In my opinion the group of external stakeholders could be expanded by at least two, but maybe even three, other affected parties, namely the general population or public opinion – which in effect is the same as society, the natural environment – above all at a local level, and the third element, which could be seen as internal as well as external, is no other than the FUTURE stakeholders: the future owners and employees, or the next generation, and the natural environment, since sustainability places emphasis on the coming generation, or the demands of future owners, such that they also are provided with the same decision-making opportunities which are given to those alive today. The future stands at the centre of corporate sustainability, which declares that decisions taken today should not restrict similar opportunities in the future. Companies' sustainable activities themselves influence organisations in the future; in other words the good social and environmental performance of a company really is an investment in the future. As Aras and Crowther state in relation to this, "the acceptance of any costs involved in the present as an investment for the future" (2008, p. 23).

According to the accounting law, "to achieve the operation of a market economy, it is essential that objective information about the current state and future development of assets, finances and the income situation of entrepreneurs and non-profit organisations, as well as other organisations conducting economic activity be available for actors in the market in order that they may make decisions." (Accounting Law C, 2000).

Thus the basic task of accounting is to provide reliable and true information regarding the operation of economic organisations in their reports for affected interest groups and actors in the market. Information contained in financial reports can serve current and potential investors, creditors and other individuals and organisations so that they can evaluate the future performance of investments and the value of the company. Companies often understand this to be sustainability (corporate sustainability), and show this in their reports, while omitting social and environmental considerations.

At the same time, by analysing economic organisations' financial, income and asset situations different kinds of information are required for the different interested parties. For market actors and authorities financial data is usually sufficient. For different environmental protection interest groups and the general population, information relating to environmental issues (pollution, protection) and social responsibility is required. Decision makers on the other hand can make the best decisions if they have all relevant and necessary information for that particular decision, including information about the environment and society.

For this reason an accounting system must be created where the environmental and social information necessary for various decisions can be collected, organised and reliably and faithfully interpreted in an appropriate form for internal and external stakeholders.

As we have seen, the spread of a changed conception of sustainability brings with it a change in the circle of those requiring information as well as in the content of the information itself. Accounting itself has also changed accordingly.

GREEN ACCOUNTING

Accounting which also takes social and/or environmental factors into consideration has been given several names over the last few years, including, for example, environmental accounting, triple bottom line accounting, and sustainable accounting. This in itself represents a kind of development in the history of accounting. The first research and publications to deal with the relationship between accounting and sustainability appeared two decades ago – at the same time drawing attention to the inadequacies of traditional accounting – and included Gray (1992), Schaltegger and Burritt (2000) and Almássy (2006).

Environmental Accounting

The name and concept of environmental accounting first appeared in the specialist literature about a decade ago. According to the definition made by Schaltegger and Burritt (2000, p. 30.), "Environmental accounting is a branch of accounting that deals with activities, methods and systems; recording, analysis and reporting; and environmentally induced financial impacts and ecological impacts of a defined economic system." Environmental accounting is that part of the development of accounting where non-monetary, physical and quality factors already receive great emphasis. Environmental (green) accounting comprises two sub-systems, one of them (environmental accounting) deals with the financial effects induced by environmental protection, i.e., environmental expenditures and savings, and the other one (ecological accounting) deals with the environmental impact of the economic activities of a company, i.e., with figuring to what extent the natural environment undergoes change as a result of the operation and activities of a company (Pál, 2011). The sub-systems of environmental accounting are the following (Csutora and Kerekes, 2004): in the focus of environmental management accounting is the collection and analysis of pieces of information derived from environmental costs and other costs and the preparation of internal analyses as well as the supporting of the rational decision making of management. Internal ecological accounting emphasises the analysis of changes that occur in nature as a result of corporate activities. Environment financial accounting prepares reports for external interested parties about environmental obligations and expenditures of the company that have an effect on the financial position of the company. External ecological accounting, similarly to internal ecological accounting, takes into consideration the environmental impact and prepares reports from these data.

Environmental accounting, while examining the economic (company) and environmental dimensions, leaves out the social ones. There are, however, approaches which consider society as a part of the natural environment and state that natural sustainability is the basis of human well-being (Yakhou and Dorweiler, 2004), and as such the two concepts do not need to treated separately.

There is now a relatively wide range of literature dealing with environmental accounting, and many researchers have studied the subject from a variety of perspectives, including the elements which make up environmental accounting and the methods and tools used, for example Csutora (2001), Ván (2008) and Lee (2011).

Triple Bottom Line Accounting

A new type of accounting, Triple Bottom Line accounting (TBL accounting) can also be found in the specialist literature, or more frequently encountered as the Triple Bottom Line concept, which shows separately the economic, social and environmental effects of the company's operations. The emphasis, however, is on the financial indicators and measurable factors, and it publishes the social and environmental results separately, in a non-integrated form (Gray and Milne, 2002). This approach is supported by the thinking in Wiedmann and Lenzen's (2006) work, according to which the objective of TBL accounting is, in addition to the growth of shareholder value, the attainment of social and environmental goals, and that TBL accounting is primarily concerned with quantitative, financially-expressed indicators, rather than qualitative, non-monetary economic, social and environmental ones, since according to them, for decision makers only information expressed in financial terms represents the development of sustainable performance.

Sustainability Accounting

In my opinion, if such things as corporate sustainability and sustainability strategy exist, then of necessity sustainability accounting must also exist, since if the objective of the company changes, this induces the introduction of new methods; despite this, the specialist literature only features a few publications dealing comprehensively with this concept.

Burritt and Schaltegger's (2010) principle of sustainability accounting represents the peak of accounting at the current time. Sustainability accounting goes beyond the two previously mentioned types by examining all three dimensions as well as corporate operations, and, what is most important, it emphasises the interaction between them to produce a heuristic, multi-dimensional approach to corporate sustainability.

From the changes of recent decades it is clear that traditional accounting does not offer sufficient relevant information for stakeholders about the creation of corporate sustainability, and thus it needs to be reformulated and expanded. This also leads to the development of accounting, but what is different about sustainability accounting compared to the earlier accounting types?

In the specialist literature we can find examples which attempt to establish the essence of sustainability accounting. Given that this is a new area in the process of development, there is no common agreement, but neither is there any widely accepted approach.

Schaltegger and Burritt (2010) begin their article by pointing out that there are several definitions of sustainability accounting; often different articles use the expression in the title, despite the fact that the authors use it in a different sense. One publication by Lamberton (2005) for example, gives a brief history of sustainability accounting, despite the fact that the author uses the term sustainability accounting in the sense of environmental accounting. We can also find examples of sustainability accounting in the TBL sense of the term, in Henriques and Richardson (2004) and from the Professional Accountants in Business Committee (2006), which maintains sustainability accounting is a tool with which the effects of corporate activity on social communities and natural environments can be rendered in numerical terms; in other words sustainability is expressed in financial terms. What causes these different uses of this concept? We only need to think back to the narrower and wider definitions of sustainability, in which the former only includes environmental sustainability, while the latter covers complete sustainability, or the three dimensions. In my opinion this can be one reason why the term is not clearly understood; the other reason being the differing conceptions of corporate sustainability. This problem is understandable, since if sustainability accounting is a tool to achieve corporate

sustainability, then the two concepts must be in harmony, and sustainability must mean the same in both cases. Consequently, we consider the broadest, most acceptable definition to be that of Schaltegger and Burritt (2010, p. 377):

"Sustainability accounting describes a subset of accounting that deals with activities, methods and systems to record, analyse and report:

- First, environmentally and socially induced financial impacts,
- Second, ecological and social impacts of a defined economic system (e.g., the company, production site, nation, etc.), and
- Third, and perhaps most important, the interactions and linkages between social, environmental and economic issues constituting the three dimensions of sustainability."

Traditional accounting deals with the financial aspects of corporate activity, as laid down by the law. In contrast, what is demonstrated from the perspective of the sustainability of corporate operations deals with sustainability accounting, which has no rules of application laid down in law, but which is, instead, a voluntary activity. At the same time the demand from stakeholders for information about companies' social and environmental performance is growing all the time. Companies that are willing to meet these demands have an interest in developing and operating a sustainability accounting system.

However, we are dealing with a new management and accounting system, which provides high quality, relevant information to help the company to achieve corporate sustainability (Schaltegger and Burritt 2010). It is, in other words, a tool to realise corporate sustainability. In addition, it makes it possible to reach decisions related to sustainability on the basis of information related to sustainability. It is a financial language for decision makers which can be used to ensure the success of efforts to achieve corporate sustainability. According to SIGMA (2003), sustainability accounting is a bridge which can carry the company to the shore of sustainable operations and behaviour.

We are entitled to ask the question whether sustainability accounting needs to be dealt with as a completely new, independent accounting system, or whether it should be a part or an extension of traditional accounting (financial accounting, management accounting). According to Schaltegger et al. (2006), the first option would be preferable, since it would offer the possibility of building the relevant economic, social and environmental advantages and risks, and the interaction between these dimensions, into the corporate accounting system. In practice, however, the authors believe that the second option is more realistic; the gradual modification and expansion of the existing accounting system represents a less drastic transformation for corporate management.

I believe that for this very reason it is useful and informative to compare the concepts of traditional, environmental and sustainability accounting, as is shown in Table 2. Since these three types of accounting examine different dimensions of the company, their information content is also different, as are the tasks the systems have to fulfil. The changed range of the tasks can be seen in elements of the accounting systems. The least developed area, which even today provides subjects for research in both traditional and environmental sustainability, is methodology. The methodology of sustainability accounting is still in its infancy. Since the accounting types mentioned above are built on each other, we believe that environmental accounting should be considered a part of sustainability accounting, and the methods applied there could be incorporated into sustainability accounting too. However, this is not enough, since because of the interaction between the three dimensions, it is likely that methods used by other branches of science will need to be introduced.

Table 2
Comparison of traditional, environmental and sustainability Accounting

	Traditional accounting	Environmental accounting	Sustainability accounting
Perspective	Corporate economic (financial) aspects	Link between the economy and the environment	Integration of the economy, society and the environment
Task	Show the general economic situation; Cost management	Show environmental performance; Show environmental liabilities and environmental costs	Show sustainability performance (economic, social and environmental performance)
Elements	Financial accounting Management accounting	Environmental financial accounting External ecological accounting Environmental management accounting Internal ecological accounting	Sustainability financial accounting Sustainability management accounting
Tools	Financial and accounting statements Internal reports, reports	Environmental reports	Sustainability reports
Methodology	Assessment procedures, Cost accounting	Environmental performance evaluation, Life-cycle analysis, Environmental cost-savings analysis	Other disciplines' (biology, sociology) methods; Sustainability Balanced Scorecard
Unit	Basically, financial units (excluding inventory)	Financial and natural units	Financial and natural units
Regulation	Legal regulation (financial accounting) Voluntary (management accounting)	Legal regulations require reporting of some elements of environmental performance	Not regulated
Obligational characteristics	Compulsory	Some elements are required	Voluntary

Source: own elaboration, 2012

CONCLUSIONS

Companies have a key role in achieving sustainability. Their current activities not only have an effect on today's world but on the future, too. Now, companies themselves are slowly beginning to understand this; however, relatively few know how to achieve corporate sustainability, and through this to contribute to total, global sustainability. Accounting can offer help in this endeavour. However, traditional accounting systems do not deal with accounting for social and environmental effects and are not capable of demonstrating them. For this reason, sustainability accounting, going beyond green accounting, must be emphasised, both by researchers – searching increasingly for methods and procedures applicable in practical life – and by companies, so that decisions based on the information provided by sustainability accounting contribute to economic, social and environmental

sustainability, and make it possible for the company to survive in the long term. The following research tasks are needed to achieve these goals:

- to provide proposals to discover and further develop the basic principles, tools and methods which are most likely to allow the successful creation of environmental and sustainability accounting systems;
- to carry out empirical research with Hungarian companies to find the answer to the central question of whether they use environmental or sustainability accounting, and in which form, and to what extent, they analyse the information provided to them;
- to prepare a case study to show how a sustainability accounting system should be operated in practice.

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Links Between Net Present Value and Shareholder Value from a Business Economics Perspective

MÁRIA ILLÉS, Ph.D.
UNIVERSITY PROFESSOR

e-mail: vgtilles@uni-miskolc.hu

SUMMARY

One of the oft-quoted theorems of finance is that decision making based on net present value will lead to the maximisation of shareholder value. The study analyses the reality background of this theorem within the disciplinary borders of business economics. Since finance is based directly on the bases of microeconomics, the study touches upon the presentation of the different disciplinary frames of business economics and microeconomics. The paper demonstrates that the economic content of shareholder value of a firm calculated from its business value and the project's net present value fundamentally differ from one another. With their summing up, in general cases, no index emerges with meaningful economic content. Moreover, only in exceptional cases does the ranking based on the net present value lead to the maximization of the shareholder value.
Keywords: business economics, capital budgeting decisions, net present value, shareholder value
Journal of Economic Literature (JEL) code: M21, G31, G32

INTRODUCTION

The debate over the order of preference of the application of the net present value and the internal rate of return (IRR) has been in progress for over half a century. The literature of finance expresses a very determined preference for net present value. In spite of this, when substantiating their decisions, the business professionals of developed countries apply the internal rate of return in a large proportion (see e.g. Arnold and Hope, 1990; Volkman, 1997). According to Volkman's (1997) research, the emergence of this contradiction could be attributed to the fact that finance propagates the more advantageous nature of net present value-calculation based on one of Fisher's works (Fisher, 1930) published in the first half of the past century while business economists (and business professionals) prefer the method of finding the internal rate of return based primarily on the works of Böhm-Bawerk (1889) and Keynes (1936).

Among the advantages of net present value, finance literature regularly mentions the theorem according to which the net present value indicates the project's contribution to the shareholder value (shareholder wealth). However, according to Woods and Randall (1989), this theorem remains unproven.

When transposing the theorems of finance into the corporate practice and re-interpreting them from a business economic perspective, a rather serious problem is caused by the different disciplinary frameworks. Finance, namely, is based on standard microeconomics, or as Volkman says "based on orthodox economic theory" (1997, p 75). Problems caused in part by microeconomic roots emerge in the research of Woods and Randall (1989) as well. Their article analyses the links between net present value and shareholder value on the scientific basis of finance. In the course of this, the article points out that some of the background assumptions applied by finance do not prevail in reality (for example an efficient market and full credibility). Some of the background assumptions mentioned are based on microeconomic foundations.

This study examines the links between net present value and shareholder value from the aspect of business economics by using its category system. Correct processing is made more difficult by the fact that there is a significant difference between the theorems of finance and business economics as far as the proximity to real-life problems is concerned.

With regard to the microeconomic bases of finance, the study also casts light upon the opportunities and pitfalls of the interoperability between microeconomics and business economics. The investigation's main purpose, however, is to clarify the question to which extent the net present value is appropriate for quantifying a project's contribution to the shareholder value.

DIFFERENT DISCIPLINARY FRAMEWORKS OF BUSINESS ECONOMICS AND MICROECONOMICS

Business economics as a scientific discipline evolved as an interaction of the general development of economy, management and sciences. Its roots can be traced back to the 16th century. At the different stages of its development, the nature of business economics changed as well. It's becoming an independent discipline can be dated to the 1920s (Du Plessis et al. 1981).

The individual disciplines have relatively independent fields of research, research objectives, research approaches and category systems. Business economics researches the operation and development of companies, taking environmental interactions into account. Considerable emphasis is put on the analysis of management operation and management-methodological relationships, on the methods of the preparation for decision making, and on the disclosure of the patterns of corporate behavior. Its level of abstraction is relatively low and a considerable part of its results – adjusted to the characteristics of the given company – may be directly used in management practice. The terminology of business economics is in accordance with the terminology of corporate management. However, it has to be mentioned that a certain kind of looseness is characteristic of the category system of business economics all over the world. (For more on this, see Illés, 2005).

Unlike the above mentioned, economics basically examines how the economy works. Schmalen (2002) describes this as follows: as far as economics is concerned, the aggregate processes, i.e. the links between the (aggregate) sectors of

"business", "household", "government" and the "rest-of-the-world" constitute the subject of cognizance.

Economics applies a high level of abstraction encompassing a huge field of topics. In the case of topics concerning a company, its central question is the link between rational business decision-making and economic balance. It analyses the company from a kind of external perspective and does not go into its internal structure, management-methodological questions or development tendencies. Its category system is stable and uniform world-wide. Even the notation is identical.

A source of several misinterpretations is that the names of several basic categories of microeconomics are identical to those of business economics, although there is different economic content behind the identical names. Such categories are, among others, cost and profit. Moreover, the high level of abstraction may also become a source of misinterpretation. Microeconomic researchers would like to express general relationships ("eternal truths") but they often do not emphasise the correct presentation or continuous awareness of the assumption system in which the disclosed patterns, relationships prevail in the business's reality. A considerable part of the assumptions leading to high level abstractions greatly differ from the real operation conditions of real business life. Without being aware of, and then resolving, these assumptions, it is not possible to arrive at knowledge that can directly be used by the business professionals. (Unlike business economics, management-methodological counseling is not among the goals of microeconomics. This is a correct relationship between microeconomics and business life.)

Most theorems and research results of microeconomics may be employed by business economics only after proper re-interpretation and synthesis. This is a consequence partly of the different levels of abstraction and partly of the different research goals, approaches and category systems. The passage between the two different disciplines requires a great deal of care. I have demonstrated the depths of this issue through the detailed comparison of the "break-even point", applied with an identical label but with different economic content in microeconomics and in business economics (Illés, 2011).

Despite the essential conceptional differences, we may often encounter the merging of the two disciplines in the literature, which may arise from both directions. Rather than, usually this is the crossing of disciplinary borders where the concept-system of the given discipline and the validity frames of the theorems are neglected. In order to interpret the theoretical relationships for practical examples, certain microeconomic publications often enter the area of business economics in such a way that they do not indicate the changing of the content of the categories. It causes interpretation difficulties, for example, when microeconomics applies an original corporate database but does not touches upon the fact that the costs in the database differ from the cost-concept of economics and does not correct them. Moreover, it should be emphasised that the sums in the profit column do not coincide with the sums of microeconomic profits.

Works in business economics adopt unadapted microeconomic relationships and theorems in a frequency and proportion greater than the above. (Examples are the books of Hornby et al. (2001) or Atkinson and Miller (2008), where among others the routine construction of U-shaped cost curves and furthermore the practical applicability of isoquant curves assuming the arbitrary divisibility of production factors are problematic.) Of course, these may cause significant drawbacks for the usefulness of the scientific results of business economics.

MICROECONOMIC FOUNDATIONS OF FINANCIAL THEORY

A general characteristic of the finance literature is that its disciplinary borders are unclear. It does not become clear whether it is about a purely theoretic question of economics or about a methodological recommendation applicable by practical businessmen. In this particular case it is problematic because a business economist does not have to be concerned with the critical analysis of the theorems of economic theory. However, he or she cannot leave the recommendations of the literature touching upon management practice out of account.

Even though finance constructs its recommended methodology and its analyses related to corporate finances on microeconomic bases, it usually presents its findings embedded in a practical context. (The questions related to the project's economic efficiency may also be counted here.) This is a very significant characteristic. At times there is a wide gap between the relationships arising according to finance models and the relationships prevailing in reality. I would like to illustrate the nature of this gap via a brief description of a real-life event. In the course of a discussion I mentioned that the average cost of drinking water per cubic meter is 280 HUF at one of the water public utility companies. Out of this amount, the marginal cost is 19 HUF. If the price of the water would be regulated according to the "price is equal to the marginal cost" principle of microeconomics, this company would soon go bankrupt. My colleague in finance reacted immediately: the reason for this is that there is no market balance. If there were market balance, no such problem would emerge. That was the point where I wound up the debate. For, based on the reality, no market balance can be imagined where approximately 93 per cent of the costs need not to be returned. Anyway, the debate would have gone on the ground of short- and long-run cost curves, and the existing chances of the arbitrary divisibility of production factors on the ground of reality.

The processing of certain theorems of finance from a business economics perspective is made more difficult by the fact that it does not become clear which assumptions and relationships originate directly from microeconomics and which come explicitly from finance theory. (Among these assumptions are, for example unlimited access to credit.)

Nowadays, there are finance studies that consider the clarification of the relationship with the practice as their goal. Clear views can also be found among them. For example "The WACC is neither a cost nor a required return: it is a weighted average of a cost and a required return. To refer to the WACC as the »cost of capital« can be misleading because it is not a cost" (Fernández, 2011, p. 9). It is a source of numerous misinterpretations that finance – just like microeconomics – calls the return requirements arising according to the opportunity cost a cost as well. In practice, however, only those items are called costs behind which there was, is or will be some expense. (Certain fields of business economics have partly adopted the cost-interpretation of microeconomics; however this does not become disturbing in a proper context.)

NET PRESENT VALUE AS A SURPLUS OF SHAREHOLDER VALUE IN THE LITERATURE

As mentioned in the introduction, in order to underpin the more advantageous nature of net present value, finance refers to, among others, Fisher's theorem according to which the net

present value indicates the extent to which the project contributes to the shareholder wealth. This, with some different significance can be found in the majority of the related works in finance. The elaboration of the theorem is not typical.

Many authors explicitly bring the net present value into direct connection with the shareholder value of the firm and the shareholder wealth. Two examples:

a) "When mutually exclusive projects rank differently because of cash-flow pattern differences, the net present value rankings should be used. In this fashion we can identify the project that adds most to shareholder wealth" (Van Horne and Vachowicz, 2008, p. 333).
b) "If shareholder value is the aim of the company's management and directors, the project that creates greater value, not greater rates of return, is the preferred choice." And later: "The NPV is the method that is preferred in all cases. It is the method that measures the contribution of the project to shareholder value" (Crundwell, 2008, pp. 191 and 193).

From a practical point of view, the unsustainability of the statements may easily be seen. For example with identical lifespan and a given investment amount, two minor projects together result in a net present value one-and-a-half times greater than a major project. When separately analyzed, it is the major project that provides the highest net present value. However, with identical risk conditions, it is not appropriate to choose that one.

Generally, the comparability of net present values is distorted by the differences of initial investment requirements, lifespans and the rapidity of payback. These distorting effects have been known for decades (for example Keane, 1975). Despite this, the one-sided recommendation of net present value remains: "The NPV can discriminate between projects with different sizes because it measures return in absolute dollars. When such a conflict occurs, once again the NPV provides the decision consistent with the goal of maximizing shareholder wealth" (Baker and Powell, 2005, p. 257). Laux (2011) says that academics consider the NPV approach is superior and some of them so find that over time practitioners have come to agree.

There are also a considerable number of authors who interpret the net present value primarily or simultaneously as the surplus of company value. Three examples:

a) "Those who prefer the NPV method argue that the method measures the monetary contribution which a project makes to the value of the firm, and is therefore more meaningful than a ratio of profitability" (Keane (1975, p. 13).
b) "NPV is the better method because it is a superior indicator of how a project will affect the value of the firm." (Baker and Powell, 2005, p. 255).
c) "A zero NPV would maintain the value of the firm; positive NPV projects would increase firm value." Laux (2011, p. 30).

This conception makes the relationships even more difficult, since the maximisation of the company's value is not the same as the maximisation of shareholder value. A project with a net present value of 0 (zero) to be realized by taking out a loan of large amount, in the first approach, increases the company's value according to the project asset's value but it does not affect the shareholder value.

Shareholder Wealth Maximisation as a Methodological Question

Fisher's assumption of the maximisation of shareholder wealth in the 1930's – given the characteristic circumstances of shareholder structure and management morale at that time – may partly be regarded as realistic. However, works in firm theory were published even in this period questioning the theorem according to which the corporate decisions, in their tendency, clearly serve the maximization of shareholder value. Berle and Means (1932) argued that the corporate person formally owns a corporate entity by the separation of corporate ownership and control. They say that in public corporations where the ownership and control is separated, the shareholders rely on the board of directors to represent their interests. Over time the boards become so dominated by the management that their supervisory role becomes ineffective and the executives get to have the final say.

Under today's circumstances of the companies' ownership structure and operation, the general theorem of the maximisation of shareholder value can be refuted, and this refutation can be found in a number of sources. Old and Shafto (1990) for example, in accordance with the professional opinion, state that the interest enforcement opportunities of the shareholders of big and free float joint-stock companies are very limited. The shareholders of such companies may encounter a number of difficulties if they want to organise the conditions required for having a relevant say in the company's issues. On one hand, the top management can informally control the appointing of new members of boards of directors so thus, it is not easy to achieve a breakthrough in this area. On the other hand, acquiring pieces of relevant information related to the company runs into a number of difficulties, as does conveying the information to thousands of shareholders. The general meeting – due to its regulated, scripted nature – is not a really appropriate platform for the enforcement of shareholder interests. By contrast, the chance for management groups with a relatively uniform situation of interests to enforce their interests is considerably better than that of the shareholders. There is a danger, and in some cases it happens, that the managers enforce their own interests at the expense of the shareholders. The corporate communication does not necessarily reflect but rather conceal the actually prevailing interest effects.

In today's modern market economies, the dominance of interests prevailing within the companies of different size, different organisation and different ownership structure shows very significant differences. Independent of this particular fact, a model and its calculation background whose the purpose is profit-maximisation and the maximisation of shareholder wealth can be analysed.

So thus, the main question in this case is not whether the pursuit for the maximisation of shareholder value does prevail in reality. Independent of this, the methodological relationship of whether the sum of net present value is able to measure the project's impact on shareholder wealth can be analysed.

Net Present Value and the Shareholder Value of a Project

The Main Task and Content of Net Present Value

The net present value is one of the means of judging the project's economic efficiency. With its help, it may be determined whether the given project meets the return requirement. The literature is not concerned with the clarification of its economic content. According to my research, the economic content of the net present value is clear only in case of investment projects with orthodox cash flow patterns. In this case the net present value is the sum of the surplus yield above the required one (or lack of that), discounted for present value. This is proved mathematically (Illés, 2012).

The net present value (NPV) calculation applied to orthodox cash flow pattern projects is as follows:

$$NPV = - E_0 + \sum_{t=1}^{n} H_t \frac{1}{(1+i)^t}, \quad (1)$$

where

E_0 = Initial investment. The investment sum occurring in the zero point of time, and investment amounts occurring earlier added up with required rate of return.

t = Serial number of years (t > 0).

H_t = Difference between cash inflows and cash outflows in year t, where $H_t > 0$ for orthodox cash flow pattern projects.

n = Duration of the project, where the time of investment realization does not constitute part of the duration.

i = Required rate of return.

The economic efficiency of a project and the project value are two concepts essentially different from one another. In the case of projects with a measurable return on investment, the question analysed while examining the economic efficiency is whether the return requirement is met. The project value, however, indicates the maximum amount that, at the time of the analysis, could be paid by a competent businessman when buying the project in question. So one question is whether the total expenditure and the yield requirement of the investment according to the required rate of return will be returned. The other question is how much the project is worth. The basic function of net present value is to answer the question of economic efficiency. The way of giving the answer is another issue. This answer simultaneously indicates the discounted sum of the surplus yield (or its lack) generated above the yield requirement. The discounted yield surplus, however, does not refer to the project's value. A zero net present value, for example, means that the required yield is just met. However, in such cases the project value is not zero. Based on all these reasons, it can be stated that, in a general case, the firm value and the net present value of the project can theoretically not be summed up.

It may happen that, due to an unexpected market impact, an investment project becomes uneconomic after the start. In this situation its net present value would be a negative sum. As long as the negative sum of net present value does not exceed the net replacement value of the project's assets, the project can be sold for some amount of money. It has a value, in spite of the negative net present value. It may be seen from this side as well that the project's value cannot be identified or substituted with the net present value.

Project Value and Firm Value

The value of a project is the maximum amount the organisation's leaders are willing to pay to get a project afloat. The value of an orthodox cash flow pattern project is calculated as the sum of discounted future cash flows. This can be regarded as a commonly known relationship, though it may happen that it does not yet have a scientific rank. The calculation formula is as follows:

$$V_P = \sum_{t=1}^{n} H_t \frac{1}{(1+i)^t}, \quad (2)$$

where V_P = value of the project.

Summing up the value of the project and the firm value seems possible in the first approach, provided the firm value is estimated on a DCF (discounted cash-flow) basis. The two values, however, in theory cannot be summed up, for the periods taken into account are different. The calculation of the firm value encompasses a long period, i.e. an infinite lifespan. When calculating the project value it is usually a period significantly shorter than that (according to the real lifespan) taken as a basis.

The problem of summing up does not emerge in the case of assets. The price of a building to be purchased today with a lifespan of 100 years and the price of the technological system operating within with a lifespan of 10 years can be summed up without any problem. The sum indicates how much the two assets are worth together today, independent of the fact that one will remain to function for 100 years, the other for 10 years. The difference in the lifespans does not disturb their summing up.

In case of the project's value e and the firm value, this analogy is not valid. In this case, a shorter lifespan means faster capital payback. With the faster payback, the capital may be re-invested earlier and it can be applied for gaining further surplus yields. Within the time horizon applied in estimating the firm's value, the project with a shorter lifespan or faster payback provides a chance for a further increase of the firm's value by a greater amount. The summing up of the project's value and the firm's value leaves this opportunity out of account. The summation would be undistorted only by the assumption that the yield rates of the re-investment opportunity emerging related to the project are identical with the required rate of return. There is no such a relationship in reality.

Shareholder Value of a Project

The difference between the firm's value and the sum of debts gives the shareholder value of the firm. Since it was proven that there is no direct logical relationship between the firm's value and net present value, it can be stated that there is no direct economic-logical link between net present value and shareholder value, either.

Theoretically, the project's shareholder value can also be analysed. This can be done according to the analogy of the method applied in the estimation of the shareholder value of the firm. Black et al. (1998) define of shareholder value of a firm as follows:

Shareholder value = Firm value – Debt

According to this, the shareholder value of a project may be estimated as the difference between the project's value and the debt related to the initial investment of the project. The formula is as follows:

$$V_{PS} = V_P - E_D,$$

where

V_{PS} = shareholder value of the project,

E_D = the sum of debt in the project's initial investment.

This formula can be made more detailed.

$$V_{PS} = \sum_{t=1}^{n} H_t \frac{1}{(1+i)^t} - E_D \quad (3)$$

In general terms the shareholder value of a project and the shareholder value of the firm (calculated totally by the DCF) cannot be summarised, primarily because of the different lifetimes.

Comparison of Net Present Value and Shareholder Value of a Project

By the collation of Equations (1) and (3) it can be seen that the net present value and shareholder value of a project in general case cannot be compared. However, the two values coincide if the total initial investment of project is realised entirely from debts [Equation (4)].

$$- E_0 + \sum_{t=1}^{n} H_t \frac{1}{(1+i)^t} = \sum_{t=1}^{n} H_t \frac{1}{(1+i)^t} - E_D \mid E_0 = E_D \quad (4)$$

According to one of finance's previously quoted assumption, the firms' access to capital sources is not limited (i.e. the capital stock may arbitrarily be increased through loans). In the sense of this assumption, beyond a certain boundary the marginal capital may only originate from credit. If in addition there is another assumption according to which reinvestment happens on the level of required rate of return, then and only then could the theorem according to which the net present value quantifies the project's contribution to the shareholder value be proven.

With the assumption of unlimited investment opportunities and the assumption that reinvestments yields equal to the required return, there are no comparison distortions in net present value. From the aspects of ranking the initial investment, the duration and the rapidity of capital payback become unattractive. In this theoretical case, the net present value – in addition to showing the project's contribution to the shareholder value – is indeed suitable for ranking and maximising shareholder value. (That is the project with the highest positive net present value out of mutually exclusive projects is acceptable.) With the assumptions mentioned above, but only than the statements that net present value measures the contribution of the project to shareholder value can be justified. Those statements, however, according to which the net present value indicates the increment in a firm's value, are incorrect and misleading even under these assumptions. Namely, the value of the company will be increased not only by the net present value, but also by the amount of debt (by appropriate investment cost).

In reality, the access to capital is limited from several aspects; moreover, the limiting assumption related to the profitability of reinvestment cannot be regarded as realistic. Based on all this, the theorem of finance according to which the analysis of net present values according to the conditions of existing reality may lead to the maximisation of shareholder value provides for what in practice is misleading information. For this maximisation purpose another methodological solutions are suitable.

Above, the DCF-based firm valuation method was applied as the background assumption theoretically best matching the structure of the net present value. However, there are several methods for estimating the value of a firm. Damodaran (2006), among others, provides a summarising overview of these methods. The practical applicability of DCF models, according to some of the literary sources, is dubious. The main problem is that a part of future cash-flows develop depending on future investment opportunities. One issue is how many years we can forecast as far as future investment opportunities are concerned. A relatively recent, brief summary of the debate over the method may be found in Laux's (2011) work.

There are methods for the estimation of corporate value where the firm's value (estimated independent of the analysed project) is increased by the net present value of the analysed project (regardless of the necessary amount of credit). Such a method may be, for example, when the company's value is estimated via the summing up of the net replacement value of the assets and the discounted value of free cash-flows arising in the future. Provided the amount of equity capital required to start the project is incorporated into the net replacement value of assets then it would appear that the project indeed increases the shareholder value by its net present value. However, the difference of time horizons taken into account in this case is still a problem. Therefore the net present value of future cash flows should include the yields of all reinvestments as well.

THE QUESTION OF MAXIMISING

The paragraphs above were primarily concerned with the analysis of the possibility of summing up the net present value and the shareholder value, as well as with taking the net present value as shareholder value into account. The assumption related to the maximisation of the shareholder value was only briefly mentioned. As for the latter, we have to touch upon that peculiarity in the literature that the goal is often expressed as the maximisation of the shareholder wealth. The definition of shareholder wealth, however, runs into several difficulties. With regard to this, in this paper I handle the shareholder wealth (in accordance with many of the sources) as a concept analogous to shareholder value. This solution can also be found in the statements quoted at the beginning of the paper.

With the assumption of unlimited investment opportunities and the assumption that yield rate of reinvestments equal the required rate of return, there are no comparison distortions in net present value. In this case the shareholder value will be maximised when the company implements all positive net present value projects, and the case of mutually exclusive projects implements the variant of highest positive net present value.

In reality credit is not unlimited for the firms. Taking this condition into account, the profit will be the greatest if – with a given risk level – the average internal rate of return (the factual profitability rate) is the highest, and if the difference between the required and factual average profitability rates of the selected projects is the greatest considering the available yields of reinvestments as well.

Based on net present values, it is not possible to directly come to this criterion, for the net present values of the individual projects cannot be compared; furthermore, the summation of these does not lead to a clear economic result.

The distortion factors mentioned above are the initial investment, the duration and the rapidity of capital payback. These factors are often mentioned in the literature of finance as well. By systematically eliminating these distortions in the case of orthodox cash flow pattern projects the net present value transforms into a special kind of rate, namely, the modified difference between the factual and the required rate of return. Ranking the projects to be realised according to these differences, we come to the ranking according to the internal rate of return (with identical risk levels). It is a very significant relationship that with identical project risks the ranking according to the net present values cleansed of distortions is identical with the ranking according to the internal rate of return. From this point of view, the order of preference of the two methods disappears, but only if the removal of distorting effects is done. If the respective risk levels are different, the ranking by the rate differences between the factual and required rate of return may be the relevant one. The expectable profitability differences of re-investment opportunities may justify further analyses as well (Illés, 2012). In the case of projects with unorthodox cash flow pattern, adapting caluculation related to the specific features makes it possible to obtain sufficient information (Illés, 2007).

It is an almost commonplace basic truth of economics that, in the competitive market, the capital goes where the highest return on investment can be achieved for a given risk. The ranking on the basis of net present values is not in accordance with this process. The net present value is known to be a difficult way to see the true profitability of an investment opportunity. For example, for an individual who is fixing 300,000 euro in a bank for one year, it is more meaningful to do so at an interest rate of 4.5% than to be told that he will get 3% interest on his deposit plus 4,500 euro more. This is more difficult to clarify for bank deposits with a long-term commitment.

CONCLUSIONS

The direct relationship of net present value (NVP) and shareholder wealth – according to the research of Woods and Randall – has never been proven. "One of the most widely accepted tenets of financial theory is that the objective of financial management should be to maximize shareholder wealth. This precept and the implication that shareholder wealth is measured by NPV is generally cited capital budgeting. However the links between NPV and shareholder wealth are not made explicit in the literature. Textbooks merely state the equivalence as a general premise without rigorous proof" (Woods and Randall, 1989, p 85).

In this paper I have examined this relationship from the business economics aspect. Based on a content analysis of the categories and the comparison of calculation models, I have come to the conclusion that in general cases existing in reality there is no direct link between net present value and the shareholder value of the firm. In other words, no index emerges that has meaningful economic content. Moreover, decision making based on net present value and the ranking based on this will not necessarily lead to the maximisation of shareholder value. Except for random cases, this occurs only with the unlimited credibility of companies and with the required rate profitability of the reinvestment amounts. However, these conditions are never met in reality.

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Barriers to a Real Competitive Business Environment on the Liberalised Energy Market

ÁGNES KÁDÁR HORVÁTH
ASSOCIATE PROFESSOR

e-mail: vgthagi@uni-miskolc.hu

SUMMARY

Liberalised efforts targeting opening public utility markets and emphasising the beneficial effects of creating a competitive business environment have been increasing in the past few decades. A number of strategically important sectors have already been liberalised (e.g., energy, telecommunication, postal services, railway services, etc.); thus, the circle of strategic sectors to be liberalised is gradually shrinking. The energy market has become completely market-oriented, which has brought about several changes. Liberalised processes have created new opportunities in purchasing energy. The experience gained in this process highlights some unfavourable impacts of liberalisation. The effective competition expected from structural changes in the energy sector has only partially been achieved. This study aims at analysing the main reasons for the evolved situation.
Keywords: demonopolisation, liberalisation of the energy market, market concentration, natural monopoly, network-based public utilities.
Journal of Economic Literature (JEL) code: Q41, Q49

INTRODUCTION TO ENERGY SECTOR LIBERALISATION IN HUNGARY

A transition situation had developed in the energy market in Hungary by the end of 2009, when full liberalisation of the energy sector was achieved. The Hungarian electricity and natural gas markets were characterised by a hybrid market model. This meant the co-existence of a public utility segment and a competitive market segment. Customers entering the competitive market, the so-called eligible customers, were able to choose a supplier. Although they negotiated a market price, the charges paid for the system used were administrative. The administrative charges for system use were passed on to end-users and the terms of payment were specified in contracts. Thus, eligible customers faced two options. They were able either to enter the competitive market or remain within the framework of public utility services. Public utility companies supplied consumers who were either not entitled or were entitled but chose not to enter the competitive market. These customers purchased the product by paying administrative prices.

When the market was fully opened, the public utility service ceased to exist. It was replaced by a universal service provision. The related Act obliged universal service providers to conclude sales contracts. Authorities that set prices in line with a definite price regulatory scheme regulated the universal service prices. It is important to note that the circle of customers entitled to universal service provision became much narrower compared to those who used public utility services. Only consumers who lacked any real bargaining power (residential customers and several small consumers) and found themselves in a defenceless situation were entitled to universal service provision. The others had to enter the competitive market. However, both residential and small consumers were able to purchase the required amount of energy on the competitive market. In this case, competitive market terms and conditions were applied to them.

MAJOR BARRIERS TO A TRULY COMPETITIVE ENVIRONMENT IN THE LIBERALISED ENERGY MARKET

All market players cherished huge hopes regarding the implementation of liberalisation of the energy market and its full benefits. Proponents of liberalisation expected that the shift to full competition would result in creating a competitive environment, eliminating monopolistic profit, falling energy prices, increasing efficiency, improving the competitiveness of energy- intensive industries, raising the employment rate and eliminating cross subsidies.

However, liberalisation brought about several negative impacts. Dickhaus and Dietz (2004), in their study "Public Services under Privatisation Pressure: Impacts of Privatisation and Liberalisation of Public Services in Europe" evaluated the experience gained in the liberalisation of the British energy sector. The opening of the markets had a favourable impact: a clear reduction in electricity prices and considerable improvement in the supply guarantee and quality of services. The objectives set in the environmental policy were achieved and the emission of hazardous materials was reduced. However, the authors claimed that systematic analyses of the consequences of privatisation were neglected. The issues of efficiency and social security were not examined. The authors' analysis highlighted some drawbacks of liberalisation that cannot be neglected. It was international oligopolies and not national monopolies that started to dominate the market. Transnational multi-sector (multi-utility) companies took up the dominant position in the market. A real competitive environment did not evolve. As for employment, massive staff reductions occurred. The employed were exploited since they had to work longer hours, their overtime increased and their wages were reduced. Price reductions were thus financed by the aforementioned ways (for example by staff reduction and reduction of wages). However, liberalisation in other countries failed to reduce prices. More and more articles about the

unfavourable impacts of liberalisation have been published recently. Stiglitz (2005) considers rapid liberalisation to be harmful. When conducting the analysis of liberalisation processes in the USA, he pointed out that liberalisation processes failed to promote fair competition and led to monopolistic practices. Senior managers gained considerable unfair benefits from liberalisation processes.

These adverse effects of liberalisation result from factors that form barriers to creating a competitive environment. This paper further investigates the most important barriers to competition.

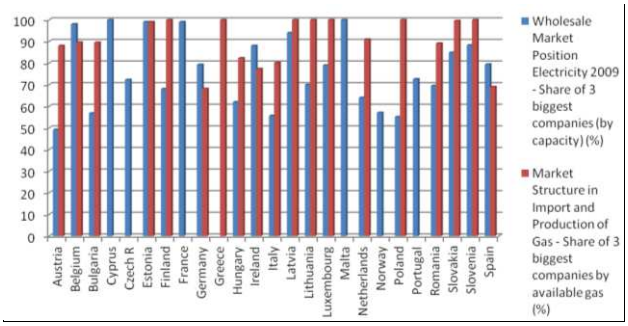
HIGH LEVEL OF MARKET CONCENTRATION AND THE DOMINANT POSITION OF VERTICALLY INTEGRATED TRANSNATIONAL COMPANIES

One of the highest barriers to creating an environment of real competition is vertical integration encompassing the whole value chain of the sector, that is, the emergence of dominant market players. Although it is true that the opportunities for utilising potential savings accumulated in economies of scales depend on the size of the market players, the size of the players creates barriers to competition, which results in generating extra profit for these players in the energy market. Although the market concentration has slightly decreased in the past few years, its rate remains high and hinders competition.

Any evaluation of the market concentration should be performed on manufacturing, wholesale and retail markets separately in order to avoid distortion of analysis of the overall market.

Market Concentration in Energy Production

The market concentration in energy production and wholesale remains high. Figure 1 illustrates the market concentration in energy production in the European Union on the basis of electricity and gas data from 2009.



There are 6 countries that have no gas market data, and one with no electricity market data. The data was not available for these countries. Source: the author's own construction on the basis of the data taken from the European Commission (2011) pp. 13 and 16.

Figure 1. Energy production market concentration in EU electricity (left column) and gas markets (right column) by market share of the three largest market players (2009)

Figure 1 clearly shows that the market share of the three major market players both on the electricity and gas markets is of determining character. Their market share exceeded 60% in both sectors in almost every EU member state in 2009. Moreover, there were countries where their dominance amounted to over 80%. In most countries the market concentration in the gas sector was the highest. This is rooted in the past. Before the liberalisation processes started, vertically integrated major national companies, which were in a monopoly position, had ensured energy production, supply and distribution as well as the whole spectrum of services. Although liberalisation promoted unbundling activities, delivered greater competition among activities separated from the grid, and encouraged privatisation, competition failed to evolve. The fact that dominant market players in particular countries expanded their activities in other countries also contributed to the increase in the market concentration level. Moreover, not only vertically integrated transnational cross-border companies took up the dominant position in the market, but multi-sector (multi-utility) companies as well. A report from the European Parliament (2010) points out that six major companies dominate the market in the EU. They are as follows: the French company EdF, the German Enel, the Italian Enel, the Swedish Vattenfal, the German RWE, and the French GdF Suez. They operate both in the EU and outside the EU.

The Herfindahl-Hirschman index, a commonly accepted measure of market concentration, can be applied for conducting concentration analyses. Herfindahl-Hirschman index is actually the sum of squared shares of individual market players. The value of the index ranges from 0 to 10,000. The higher the index value is, the higher the market concentration is. The index would equal 10,000 points, indicating a monopoly, if there were only one market player in an industry. If this value exceeds 5,000 points, the market concentration is considered to be extremely high. A value over 1,800 points also indicates a high market concentration. It is a threshold value above which a danger of discrimination and abuse of dominant market position may occur. Markets with HHI between 1,000 and 1,800 points are considered to be moderately concentrated. If the HHI is under 1,000 points the market is said to be deconcentrated (Kovács, 2011).

The table clearly indicates that market concentration in the Hungarian energy production industries have relatively more favourable indicators than in many other EU member states. However, the market share of the aforementioned three major market players is still considerable. As for the degree of concentration in electricity market by capacity, this figure amounted to 62% (in 2010 it was 66% by production). On the natural gas market this figure exceeded 80%.

Table 1
Degree of market concentration in EU electricity and gas generation and wholesale markets

2009	Electricity	Gas
Very highly concentrated (HHI>5000)	Belgium, France, Greece, Latvia, Luxembourg, Slovakia	Belgium, Greece, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Slovakia, Slovenia
Highly concentrated (HHI=1800-5000)	Lithuania, Portugal, Romania, Slovenia, Spain	Austria, France, Germany, Hungary, Ireland, Italy, Spain
Moderately concentrated (HHI =1000-1800)	Germany, Hungary, Italy, Netherlands, Norway, Poland, UK	
Deconcentrated (HHI<1000)		UK

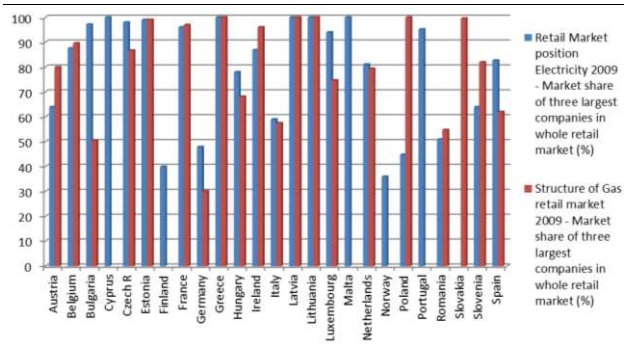
Source: the author's own construction on the basis of the data taken from European Commission (2011) pp. 13 and 16.

Wholesale Market Concentration

It is apparent that the high market concentration in energy manufacturing industries has an impact on wholesale markets and results in high market concentration in most EU member states. As for Hungary, both electricity and gas wholesale markets had a higher market concentration in 2009 than the market of energy production industries. The market share of the most dominant player accounted for 80% in both sectors in the previous years. In order to change this distorted and dominant situation, national regulators and authorities had to intervene. Firstly, the Hungarian Energy Office (HEO) upgraded the major market players to players with a considerable market share and ordered them to create conditions for fair competition. In addition, the European Commission ordered the early termination of all long-term electric power generation and generator capacity booking arrangements and reimbursement of illegal state subsidies by the power plants concerned. The structure of the wholesale power market also showed an interesting picture when universal service providers and wholesalers were analysed separately. As for the purchases by universal service providers, MVM (MVM Hungarian Electricity Private Limited Company) dominance remained unchallenged with 71.6%, whereas purchases by other service providers amounted only to 29.2%. As far as the decrease in the market concentration in the natural gas sector is concerned, the so-called 'Contract Release' and 'Gas Release' programmes were launched. As a result of the aforementioned initiatives, the market share of major companies decreased to 55% in 2011. However, these players still hold a dominant position in the market. (See further details in HEO publications and in Vince 2010a,b studies).

Retail Market Concentration

The most frequently used indicators are taken into account in the analyses of retail markets. Figure 2 illustrates the market share of the three largest companies dominating the electricity energy and natural gas markets in 2009.

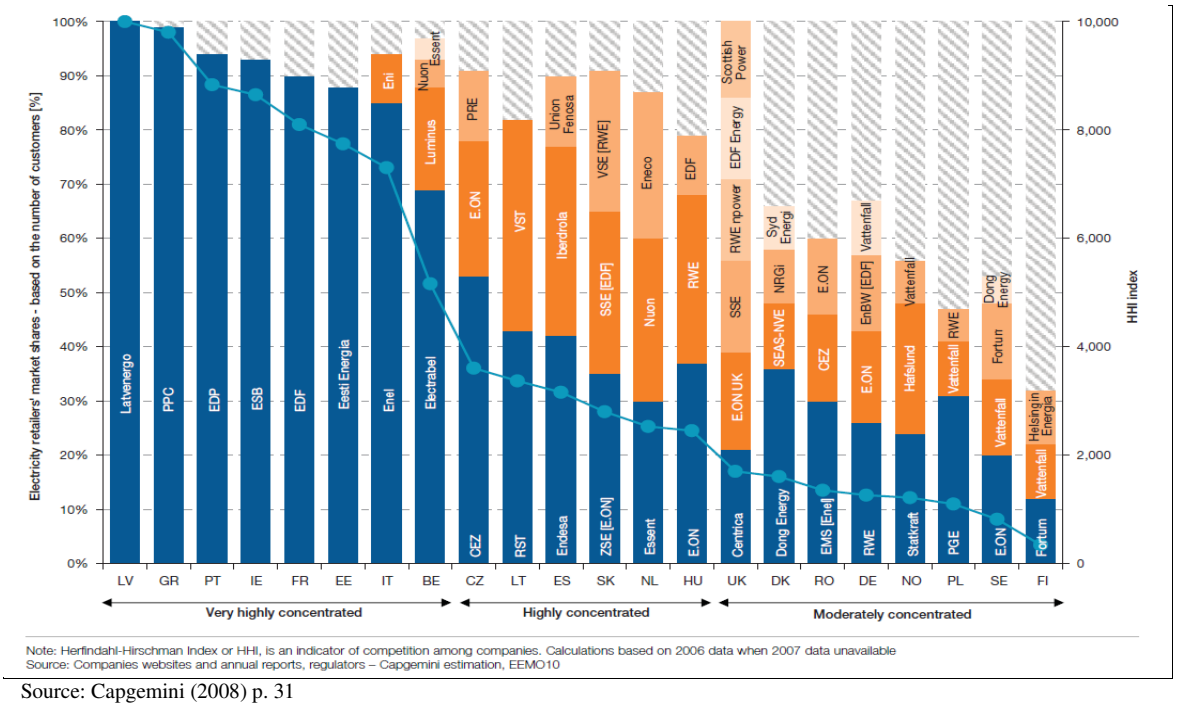


Source: the author's own construction on the basis of the data taken from European Commission (2011) pp. 15 and 17.

Figure 2. Degree of market concentration in EU electricity and gas retail markets (2009)

On the retail market the competition slightly improved compared to previous years, but the market share of the three major retail service providers on both the electricity and gas markets was still high (Figure 2). Their concentration amounted to over 70% in most countries.

Figure 3 shows the market concentration in the electricity sector from another approach, indicating both the names of the major companies and the HHI index. The figure clearly illustrates that the cross-border activities of dominant players significantly contribute to market concentration (the same players are present in several countries). The same players can be identified in data on concentration in the gas retail market (see also Capgemini 2008, p. 50). Several studies and reports conduct analyses of market concentration in the energy industry. The majority of energy analysts confirm a lack of competition in energy retail markets (see among them Vince (2010, 2011, 2012))

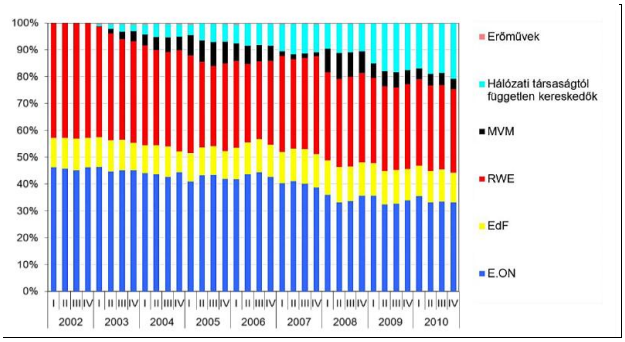


Source: Capgemini (2008) p. 31

Figure 3. Electricity retailers' market concentration (2007). market shares based on the number of customers [%] and the HHI index

Figure 4 shows the market concentration in Hungary in the period between 2002 and 2010. When market concentration in energy retail markets is analysed, its double character should also be taken into account: universal service and competitive market.

There are three multinational company groups that hold universal service provider licences in Hungary: E.ON, RWE and EdF. They also conduct free trading activities with a market share of 90% (calculated by the number of customers). In addition, they have subsidiaries and affiliates, associated companies which have interests in operating distribution networks (HEO, 2011b). It is clearly seen in Figure 4 that their market share in retail markets was still considerable and amounted to 77% in 2010. The market share of thirty traders which had no proprietary relations to domestic distribution system operators on the retail market accounted for only 19% in 2010.



Source: HEO, 2011c, p. 23

Figure 4. Changes in shares of the respective investment groups on the Hungarian electricity retail market (2002-2010)

When the market concentration of the three service providers and traders was calculated by the annual consumption volumes and not by the number of customers, their share on the free market was 64%. Consequently, the new entrant traders competed for the supply of large consumers (HEO, 2011b).

On the gas retail market, a regional distribution has experienced in terms of universal service provision and universal service providers occured in the monopoly position in their own regions. There was a high market concentration on the free natural gas market in Hungary, which compared favourably with other EU member states. A large portion of consumers who were entitled to universal service provision did not purchase on the free market. However, their number increased in 2010. This can be explained by the fact that only one company entered the free market (EMFESZ) and an investigation procedure was initiated against it. It is essential to note that consumers having district heat generation licences are no longer entitled to universal service provision from 30 July 2011.

DEFICIENCIES IN UNBUNDLING OF OPERATIONS

This section unveils deficiencies in the operation and system control of basic and distribution networks as well as in insufficient unbundling of production, supply and trading practices.

Mozsár (2002) formulated the essence of liberalisation. According to him, liberalisation is the opening up of particular sectors of industry for regulated competition. This definition reflects both activities for opening up to competition and the need for additional regulation of 'core activities' remaining in the natural monopoly status. In order to create an environment of economic competition, the company operating the network (a natural monopoly) is required to give competitors fair access to their networks. Considering the fact that network operators opposed this move, additional regulation was required. In the course of unbundling of operations the first level of liberalisation was to ensure fair access to networks (Network Access). In order to avoid any abuse of dominance, regulated network access tariffs were introduced. Later, unbundling of accounts was required to promote a more favourable competitive environment. Regulations adopted later required legal unbundling when a complete separation of network organisations was performed. However, even this move was insufficient to eliminate cross subsidies and to ensure third-party access to networks on a non-discriminatory and cost-reflective basis. In addition, it failed to promote network investments. The aforementioned requirements are fundamental requirements for ensuring fair and undistorted competition. The European Commission formulated requirements regarding full ownership unbundling. The Directive stipulates that neither the network owner nor its associated companies are allowed to perform any other activities on the energy market, that is, networks have to be operated by independent market players. Since there are hidden interrelated conflicts of interest, opposition began to mount in a number of EU member states regarding ownership unbundling. Consequently, the Commission softened its stance and elaborated three theoretical models regarding fair access to the energy networks and their operation. In the three models the requirements applied to system operation were not consistent and varied. The models shifted from the most favourable to the least favourable ones:

- ownership unbundling: the system operator is the owner of the network and has interests in generation, distribution and trade operations in the energy sector,
- Independent System Operator (ISO): the Independent System Operator only operates the system and does not exercise ownership rights over it.
- Independent Transmission Operator (ITO): The system operator and controller is a member of a vertically integrated business organisation that performs business activities in the energy sector (See MEH (HEO) 2011b and Vince (2011)).

Table 2 shows the degree of unbundling of DSOs and TSOs in some countries.

Table 2
Unbundling of DSOs and TSOs in the EU (2009)

	Electricity					Gas				
Country	Number of TSOs	Number of TSOs Ownership Unbundled	Number of DSOs	Number of DSOs Ownership Unbundled	Number of DSOs Legally Unbundled	Number of TSOs	Number of TSOs Ownership Unbundled	Number of DSOs	Number of DSOs Ownership Unbundled	Number of DSOs Legally Unbundled
Austria	3	0	129	0	11	7	0	20	0	9
Belgium	1	0	26	11	26	1	0	18	5	18
Bulgaria	1	0	4	4	4	1	0	28		0
Cyprus	1	0	1	0	0					
Czech R	1	1	3	0	3	1	0	79	0	6
Denmark	1	1	84	0	84	1	1	3	0	3
Estonia	1	0	38	na	1	1	0	26		1
Finland	1	1	88	1	50	1	0	23	0	0
France	1	0	148	0	5	2	0	25	0	3
Germany	4	2	866	0	171	18	1	695		167
Greece	1	0	1	0	0	1	0	3	0	0
Hungary	1	0	6	0	6	1	0	10	0	5
Ireland	1	1	1	0	1	1	0	1	0	1
Italy	9	1	144	121	11	3	1	263	140	260
Latvia	1	0	11	10	1	1	0	1	0	0
Lithuania	1	0	2	0	2	1	0	6	0	0
Luxembourg	1	0	6	0	1	1	0	4	0	0
Malta	0	0	1	0	0					
Netherlands	1	1	8	6	8	1	1	10	8	10
Norway	1	1	152	7	38					
Poland	1	1	20	0	14	1	1	6	0	6
Portugal	3	1	13	10	11	1	1	11	0	4
Romania	1	1	36	5	8	1	1	38	2	38
Slovakia	1	1	3	0	3	1	0	46	0	1
Slovenia	1	1	1	0	1	1	0	18	0	0
Spain	1	1	351	0	351	14	1	22	0	22
Sweden	1	1	170	0	170	2	2	5	0	5
UK	1	1	19	10	9	1	1	18	15	3

Source: the author's own construction on the basis of the data taken from European Commission (2011) pp. 36-39

It is clearly seen that more than half of the EU member states met the ownership unbundling requirements in terms of TSOs. However, on the natural gas market two-thirds of the member states only partially met the requirements or even failed altogether to meet them. As for the unbundling of DSOs, there are countries where legal unbundling was not performed. In distribution networks where neither ownership nor legal unbundling was conducted, only the lowest level of unbundling, the unbundling of accounts, was carried out.

Unbundling of Transmission System Operators in Hungary

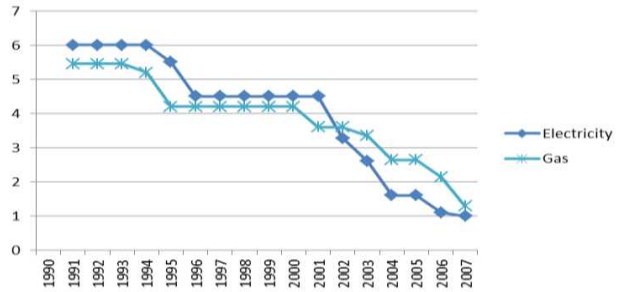
Only the model of independent transmission operator has been implemented in the Hungarian energy and gas markets so far. The requirements for it are the least strict, compared to the other three models. MAVIR Zrt. and Földgázszállító Zrt. are vertically integrated company groups of MVM Zrt. and MOL Rt., respectively, which operate as subsidiaries. It is true that unbundling of accounts and ownership and legal unbundling are required, but the requirement related to ensuring third-party access to networks on a non-discriminatory and cost-reflective basis and to creating fair competition cannot be met because of conflicts of interest. HEO pays special attention to overcoming barriers which prevent fair competition (HEO, 2011b).

Unbundling of Distribution System Operators in Hungary

There are six licenced distribution system operators in the electricity industry and ten in the gas industry in Hungary. They are groups belonging to vertically integrated business organisations which are in line with full legal unbundling. Only five out of ten major gas distribution companies have legally been unbundled. The network companies exercise ownership rights over network assets. The licensed distributors perform very limited network activities (MEH, 2011b).

ASSESSMENT OF ENERGY MARKET LIBERALISATION WITH OECD METHODOLOGY

A broad assessment of liberalisation processes can be performed by using the OECD indicators of regulation in energy, transport and communications (ETCR). The energy, transport and communications database contains data on seven sectors: post and telecommunications, electricity and gas, air, rail and road transport. The indicators allow us to measure qualitative factors of the legal and regulatory requirement system and to compare country data. This study attempts to focus on the degree of market liberalisation and the barriers to fair competition. The indicators take values between 0 and 6. The higher the value is, the higher the barriers to fair competition are. Several factors are evaluated in each sector; however, there are divergences in terms of the number and types of factors. Different computing methodology is applied in each sector. The indicators can be interpreted by each sector separately or in an aggregated form. The structure and methodology of these indicators are described in detail by Conway and Nicoletti (2006). This study deals only with indicators of the two energy sectors. For the energy market, the four factors considered in performing assessment are: entry barriers (terms and conditions for third-party access to networks and market regulations restricting competition), the proportion of state ownership and control, the degree of vertical integration (degree of unbundling operation) and market structure (only in the gas market). Figure 5 illustrates the evolution of the quantified ETCR indicators of electricity and gas in Hungary.

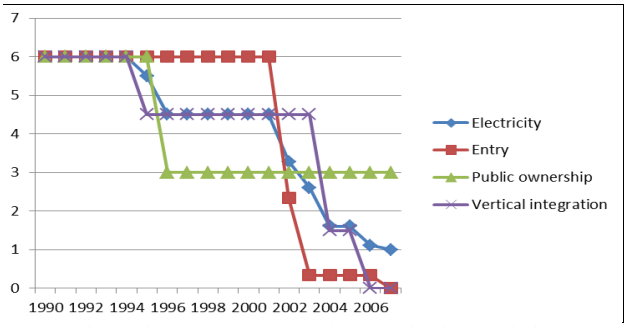


Source: the author's own construction on the basis of the OECD database

Figure 5. ETCR indicators of the electricity and gas sectors in Hungary (1990-2007)

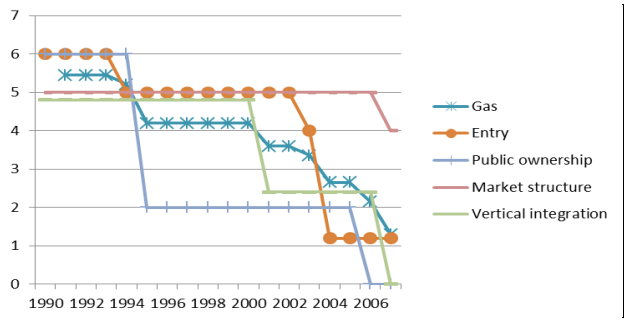
The decrease in the indicators shows gradual market liberalisation and the establishment of terms and conditions for a competitive environment. It is clearly seen that administrative and regulatory hurdles preventing market opening considerably decreased by 2007. In an international aspect the figures for Hungary compare well with other EU countries.

Figures 6 and 7 illustrate ETCR internal structure on gas and electricity markets in Hungary. The evaluation and comparison of indicators is problematic because of lack of detailed country-specific information about the markets. The description of markets requires more detailed information in order to avoid distortions of generous and superficial analysis.



Source: the author's own construction on the basis of the OECD database

Figure 6. Internal structure of ETCR indicators for the electricity market in Hungary



Source: the author's own construction on the basis of the OECD database

Figure 7. Internal structure of ETCR indicators for the gas market in Hungary

INAPPROPRIATE PLANNING OF PRIVATISATION PROCESSES

The idea of liberalisation often occurs in the context of privatisation, or more precisely, privatisation is considered to be a prerequisite for performing liberalisation and facilitating effective competition. Thus, it is not mere chance that while liberalisation is unfolding and taking pace, privatisation efforts are also increasing. Gál et al. (2005) analysed privatisation trends in Europe. In their study they highlighted that privatisation waves occurred in different stages of liberalisation. There is no consensus regarding privatisation of public services. Proponents of privatisation argue that competition triggers further efficiency gains in particular public service provision, further promotes cost reductions and becomes the potential for lower regulated prices. In addition, they think that the standard of services considerably improves, public expenses decrease, and revenues generated from privatisation can cover the expenditures of other public services. Financial resources for further investment, expansion and funding are generated. Public bureaucracies and red tape are replaced by a new and more flexible behaviour. On the other hand, a number of experts on privatisation (Osborne and Gaebler (1994), Baar (1999), Illés (2000), Stiglitz (2005), Osborne and Hutchinson (2006), Scheiring and Boda (2008), among others), back competition while sounding a note of caution about privatisation. They argue that there are public activities that belong to the scope of activities of national governments and their privatisation is an irreversible process that endangers the sustainability of public service provision. They point out that transfer of ownership and control by the state to private owners does not pave the way to competition. Privatisation itself does not trigger competition. It is the difference lying between monopoly and competition forms and not the state or private ownership that matters. They note that if private capital is involved, profit-related issues occur, which result in further increases in service provision prices. It is apparent that there are cases when privatisation seems to be the right move. Thus, complete rejection of privatisation cannot be approved. Decision makers are expected to carefully consider the impact of privatisation.

Table 3 shows the ownership distribution of companies holding licenses for the electricity and gas markets by registered capital in Hungary at the end of 2010.

The analyses of energy market players clearly show that both the electricity and natural gas markets are characterised by a strong ownership structure, and the market share of foreign investors amounts to 75%. The analysis of each market player separately shows a different picture. For generators and system operators, the Hungarian share capital is high (in the case of gas suppliers and system operators, the capital structure was defined on the basis of the ownership structure of MOL). As for distributors, universal service providers and traders, the invested foreign capital is higher. In addition, the hidden or agenda setting ownership power in the background significantly contributes to the adverse situation. What make things worse is that a high ratio of foreign capital is concentrated in just a few hands.

Table 3
Ownership distribution of electricity and gas licensees

	Ownership distribution of electricity licensees by registered capital on 31 December 2010 (%)					
Owners	Generators	Transmission system operators	Distributors	Universal service providers	Traders	Total
Hungarian equity interests	59.8	100.0	0.0	12.2	14.8	24.0
Majority-owned by foreign investors	40.2	0.0	100.0	87.7	82.5	75.1
	Ownership distribution of gas licensees by registered capital on 31 December 2010 (%)					
Owners	Generators	Transmission system operators	Distributors	Universal service providers	Traders	Total
Hungarian equity interests	77.2	21.6	3.9	23.1	12.7	12.6
Majority-owned by foreign investors	22.8	78.5	96.2	76.9	74.3	74.5

Note: the values missing from 100% refer to itemized and unregistered ownership)
Source: HEO, 2011a, pp. 58 and p. 64

CONCLUSION

The analysis of market concentration justifies the fact that the effective competition expected from structural changes in the energy sector has partially been achieved. One of the main barriers preventing real competition is the appearance of vertically integrated transnational cross-border and even cross-sector players encompassing the value chain of the whole sector. They dominate the market. Apart from high market concentration, there is another factor significantly hindering competition, namely the insufficient unbundling of network operation, since it has created bases for hidden cross-financing opportunities, limits fair access to energy networks and allows dominant market players to generate additional profit.

What gives rise to optimism is that market concentration has been decreasing in the past few years. In addition, the international economic and financial organisations, which have been putting increasing pressure on national governments to free their public services in the last few decades, admit that liberalisation has some adverse impacts. They argue that there are several barriers that prevent competition and need eliminating.

Acknowledgements

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The Analysis of SME Growth Potential in the Northern-Hungarian Region

EDIT LUKÁCS
ASSISTANT PROFESSOR

e-mail: vgtedith@uni-miskolc.hu

SUMMARY

The economic and social tendencies of the last decade's world economy are determined by growth. Challenges like the population explosion, the growth of international enterprises' economic role, increasing pollution, competition in innovation and the info-communicational explosion have to be faced. These tendencies provide great opportunities but also major challenges to economic actors.
The purpose of this study is to summarize the theories of economic growth, to demonstrate the results of research studies that analyse the growth potential of SME and to analyse the opportunities for growth in the case of northern-Hungarian SME-s.
Keywords: theories of economic growth; factors of SME growth; economic power of SMEs in Northern Hungary
Journal of Economic Literature (JEL) code: L26

THEORIES OF CORPORATE GROWTH

Defining resources, i.e. the engine of economic growth is a traditionally open question of economics. In the second half of the 19th century and in the first half of the 20st century, the importance of savings and the leading role of large companies in economic development were acknowledged worldwide. One of the most typical research topics of theoretical economists is the analysis of the relationship between corporate size and economic growth. Robert Gibrat stated that growth does not depend on the size of a firm; the proportionate growth is defined by a certain rule (Gibrat's Rule) (Sutton, 1997). That growth potential is independent from the firm size was first proven by the French engineer in his1931 doctoral dissertation. He stated that the size and growth of a firm are independent from each other.

We must be careful to define our terms. As Penrose states, Two different meanings of "growth" are generally used in research papers. In some cases it only means quantitative development, e.g. if we talk about the growth of production, export or sales. In other cases, sizeable growth or qualitative development as a result of the development process – similarly to natural biological processes where an interaction-based series of inner changes lead to sizeable growth and consequently to a change in the characteristics of the subject of growth (Penrose, 1959) In her classic book, Edith Penrose emphasized the importance of strategic thinking, entrepreneurial spirit and knowledge as determining growth-stimulating resources. She highlighted that the organizational routine and- the routine-like behaviour of the managers' limits perspective corporate growth.

No less famous or less important is the theory connected to Barney saying that the growth of enterprises depends on the quantity and quality of available resources (Barney, 1997). These days this is the best-known theory of a resource-based approach to corporate growth.

In his famous model, Porter (1980) distinguishes between five factors that affect the intensity of competition, the market potentials and also the growth potentials of the firm. These factors are competitive rivalry within the branch, suppliers, customers, new entries and firms with substitute products.

Drucker (1985) identified the key success factors of SME-s in the United States and highlighted that during the 1960-s and 1970-s the big companies of the steel, automotive, rubber and consumer electronics industries and the big, maladjusted service providers supported by the government were less able to adjust to the increasing changes than the newly-established innovative SME-s (e.g. Microsoft, Amazon, Yahoo, and later Google). At the same time, several small educational and medical institutes utilized their market potentials, therefore their economic power started to grow explosively.

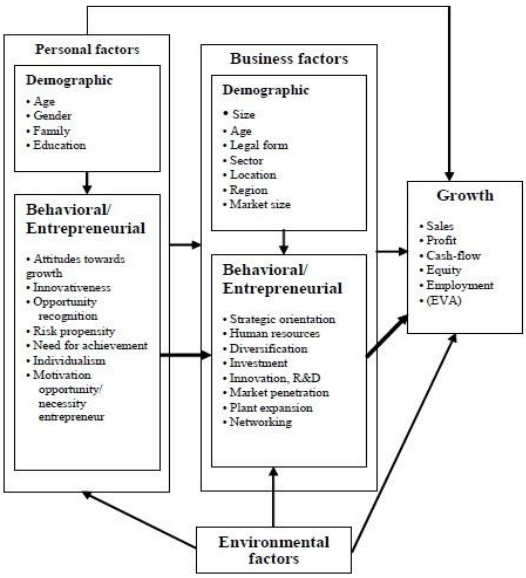
In his study, Perren (2000) stated that besides the market demand and the available resources, the owners' expertise and motivation for growth are also significant in the growth of corporate performance. This is in accordance with Bartlett, Ghoshal's statement (2002) saying that the bases of growth are the competencies of the entrepreneurs (managers) and of the corporate organization.

The work of Schumacher is outstanding regarding the consideration of economic importance and role of the enterprises. In Europe, the fast-growing SME-s only came into focus after Schumacher's book in 1973. After this, these enterprises raised the attention not only of the researcher but also of the real economic actors.

In Hungary, after the stabilization of the market economy, the SME-s provide a workplace for more than 70% of those employed in the competitive sector, producing almost half of the added value in the economy and one third of the export value. The role of SME-s is also significant in establishing workplaces: in the last years, the SME-sector provided most of the new workplaces.

Therefore it can be seen that it is important to examine the situation, opportunities and problems of the SME sector in every business cycle, but especially in the period of crisis. By developing the operational conditions, the SME-s can be significant engines of further growth – assuming that the decisions of economic policy consider their interests.

Questions of economic growth and growing corporate size had already become determining research topics at the beginning of the political transformation in Hungary. Several analyses, research reports and models have been published. In my opinion, the most meaningful summary of factors examined in these theories and studies is the model created by Szerb (Figure 1).



Source: Szerb, 2008 p.16

Figure 1. The factors of corporate growth

By utilizing the new market potentials, SME-s support the country's competitiveness and are generally receptive and open towards new technologies and innovations which means more and more new business opportunities for the dynamic development of the sectors. Most EU documents that SME-s play an important role in achieving the common goals of integration (see the former Lisbon Strategy, and the current Europe 2020 Strategy). Between 2004 and 2006, Eurostat showed in its corporate performance analysis of the EU27 that the SME-s outperformed the large corporate sector considering their number, employment and the growth of added value produced. The SME-s reached twice as high values in terms of these indicators as their larger competitors, while also increasing their own labour productivity by 8.1% during this period. (Schmiemann 2009) The SME sector produced 56% of the added value in Hungary.

Table 1
Added value production of the corporate sector 2010.

	Added value		
	Hungary		EU27
	Billion €	Rate	Rate
Micro-enterprises	8	17.8%	21.6%
Small enterprises	7	15.6%	18.9%
Medium-sized enterprises	9	20.0%	17.9%
SME-s in total	24	53.3%	58.4%
Large enterprises	21	46.7%	41.6%
Total	45	100.0%	100.0%

Source: Ministry for National Economy, 2011

SME-s play a significant role in employment. In 2008, two out of three (66.7%) of the non-financial workplaces of the EU-27 were established by SME-s (Eurostat, 2011). In Hungary, 71% of the employed were employed by SME-s in 2011. (see table 2.). Considering employment, their presence is favourable also because the cutbacks of large companies are absorbed by smaller companies offering an alternative for making alive. At the sector level - repair services, the construction industry, accommodation and catering, and real estate's are the fields where SME-s reach 80% employment (Eurostat, 2011).

Table 2
Employment rates of SME-s within the EU27 and Hungary 2010

	Hungary (number of firms)	Rate (Hungary) %	Rate (EU27) %
Large enterprises	719,477	28.93%	32.60%
SME-s in total	1,767,120	71.07%	67.40%
Micro	881,142	35.44%	29.70%
Small	479,676	19.29%	20.70%
Medium-sizes	406,302	16.34%	17.00%
Total number of firms	2,486,597	100.00%	100.00%

Source: Eurostat, 2011

Smaller companies have the potential for fast growth. It is a well-known fact that several significant companies of the world economy started as small enterprises and became giant companies as a result of their successful business activities. The development and growth of new fields of information technology is also realized partly through the newly established and fast-growing enterprises. However, we should not forget the probably less visible but still very important organizational adaptability of the traditional sectors, as one of its most important result is the improvement of performance (Kállay 2002).

In a questionnaire survey of the 'Restructuring Forum' (2007) the following structural transforming forces were identified:

- Globalization, development of value-adding chains, increasing competition,
- Growing pressure towards knowledge development and education
- Privatization, liberalization of markets, transformation of the public sector,
- Challenges of demographic changes (aging employees, lack of knowledge, business transfers).

SME-s are playing an outstanding role in the development of local and global economies. Larger companies are hardly present in smaller regions. Instead smaller firms that mostly produce for and sell to local markets relying on their own resources. Increase the local employment and therefore support the development of the local economy. The joint European resources are trying to support them more. The idea that backward regions should rely on self-sufficiency and local resources has come into prominence in recent years – often parallel with the displacement of financial support – which strengthens the role and growth of local SME-s.

THE OPERATIONAL PROBLEMS OF SME-S

The Development Strategy (2007) issued by the Ministry of Economy and Transport (GKM) highlights the following three areas as focus of development. These globally refer to the necessity of the development of the most problematic areas that would be crucial in the development of SME performance.

- Development of regulatory environment;
- Increasing the availability of financial support;
- Development of knowledge and entrepreneurial infrastructure.

A survey made by the Ministry of Economy and Transport (GKM) in 2007 included a ranking of problems the executives considered the most serious. Several factors refer to financial difficulties. For the domestic SME-s, resources, - i.e. financing - mean a general problem that has become even more serious with the economic crisis. Besides this, the national economic policy indirectly or directly also affects the opportunities of SME-s to attract capital. We can see in Table 3 that these two

hindering factors – even if with decreasing weight – are still the most determining, even after 10 years' time.

Table 3
Hierarchy of hindering factors of SME growth

Hierarchy of hindering factors of SME growth (on a scale of 1 to 100)						
Hindering factors of growth	Significance index (%)					
	1997	1998	1999	2003	2005	2007
High tax and social insurance burdens	84	78	73	74	72	77
Ever-changing economic regulations	62	58	53	58	55	63
Strong competition	53	57	61	61	61	56
Not enough orders	48	45	52	45	48	45
Unfair competition	46	44	44	47	48	45
Customer payment delays	30	31	30	32	34	35
Capital shortage	40	37	37	34	32	31
Other hindering factors	19	20	17	16	13	19
Purchasing difficulties	14	16	16	17	16	13
Outdated existing capacities	17	19	17	17	13	12
Credit shortage	27	26	26	20	15	12
Manpower shortage	9	9	9	12	8	9

Source: Ministry of Economy and Transport (GKM), 2007

The majority of problems related to the development of small enterprises are caused by the fact that – due to the economy of scale – the relative transactional costs of resources and services they wish to use are too high. This is valid for financial services, more precisely for credit and for the potential for capital-involvement, for a significant part of technical business services and for services connected to the fulfilment of obligations prescribed by the state (taxation, accountancy, payment of contribution, information supply)" (Kállay 2002, p.557)

I try here to collect the typical problems and characteristics of the Hungarian SME sector. SME-s are more exposed than the large, well-funded but often foreign-owned companies: having a relatively small size compared to the market, they have little influence on the market therefore they have to follow price-taker behaviour. They are in contact with only a few customers, and so the non-payment of even a single customer can cause quasi-insolvency even for a successful firm. In the period of crisis and circular debt this particularly has affected SME-s (especially in the construction industry). A large number of firms have low capital adequacy and high intensity of the labour-force. The SME-s suffer from high liquidity risk and long-lasting lack of funds compounded by the existing crisis of credit supply. In other words, due to their size, granting credit to SME-s is risky, since they cannot guarantee security for the loan. Their technical state of supply is not satisfactory, and their profitability and efficiency is also low. They are not active in R&D and innovation, which makes joining to foreign production or distribution chains and suitability for competition even more difficult. Their sales and marketing view is incomplete and their qualitative view is conservative, which makes it difficult for them to measure up to the large companies and to hold their ground in competition. Their dependence on multinational companies is strong and they cannot or can hardly compete with them. The lack of qualifications and competence reflects the insufficient economic and financial knowledge; accessing a qualified labour force is limited and difficult. They strongly depend on support that is often difficult to obtain. Corruption makes obtaining government support even more difficult. Their project activities are low: they suffer disadvantages in public procurements; their tendering knowledge is weak as they hardly get information about tendering opportunities and even if they win tenders, the fundraising for pre-financing is difficult. They heavily depend on political-economic regulations and their changes; they are operating in a constantly changing business environment with intensively changing regulations and high taxes. The enterprises cannot utilize the possibilities of positive changes and cannot react quickly. These are mostly consequences of a dysfunctional management system and the lack of efficient management. Obtaining market information is expensive and asymmetric, e.g. incomplete information on partners (circular debts), or being hindered from entering foreign markets (unpreparedness). Weak financial morals and distrust surroundings the domestic market hinders their concentration into networks and clusters, although in this way they could reduce the problems originating from their sizes.

THE EFFECTS OF INTERNATIONAL COMPETITION AND GLOBALIZATION ON HUNGARIAN SME-S

A determining phenomenon of the 21st century is globalization and the varied world economy it has formed. The competitiveness of the national economy is basically determined by the performance and adaptability of firms operating within that certain economy. Therefore it is important how prepared the national corporate and SME sector is to adopt well-known and widespread corporate management methods (Buzás at al 2003)

Based on the level of its extension, we can talk about national, international, regional and global competition. In case of Hungary, the strengthening of regional competition became perceptible in the 1990-s as its economic relationships with the European Union became dominant and the Central and Eastern-European economic relationships were reorganized. Global competition was also present in a number of industries due to the investment of working capital and globalized industries. During this period and even later on, Hungary has had to perform in a dominantly resource- and investment-based competition and had to compete for working capital investments and in establishing relationships with developed companies. (Chikán et al 2002)

The extension of competition is determined by the size of the given economy: the smaller a country is, the more it is forced to join the international trade and to extend its markets. As Hungary is – in every aspect - an open economy, the international prosperity has a stronger effect on its conditions of competition. In addition, the global conjuncture has not only a direct effect but also an indirect one, through the movements of the domestic investors, who have a significant role in several aspects within the national economy and even in economic policy (Chikán & Czakó 2009). In this way, the international crises influences the performance of the national economy and also has a strong effect on the potential of the corporate sector where the SME-s are especially vulnerable. The hectic economic policy is increasing in the crisis and might decrease their potential and adaptability.

ECONOMIC PERFORMANCE OF BORSOD-ABAÚJ-ZEMPLÉN COUNTY FROM THE ASPECT OF MACROECONOMIC TRENDS

The analysis of the economic-demographic-social processes within Borsod-Abaúj-Zemplén County (B.A.Z. County) demonstrates the serious problems of a region that is lagging behind the European Union. B.A.Z. County with an area of 7247 square kilometres and a population of 684,793

(Hungarian Central Statistical Office - KSH, 2011) is the second largest county of the country. Its centre is Miskolc, which is also the centre of the North Hungary region. It has 15 administrative micro-regions. The economic geographic conditions of the country are favourable; the county has the largest economic weight of the North Hungary region.

A fact that reflects the situation of the county is that based on a classification made by the government, three of its micro-regions are underprivileged, and another 10 (one-third of the Hungarian micro-regions) are so underprivileged that they should be supported with a complex program. In its sectorial structure, the chemical industry and mechanical industry play a crucial role. Its settlement structure is characterized by small villages which makes retaining the population very difficult while the population of the county seat is also decreasing.

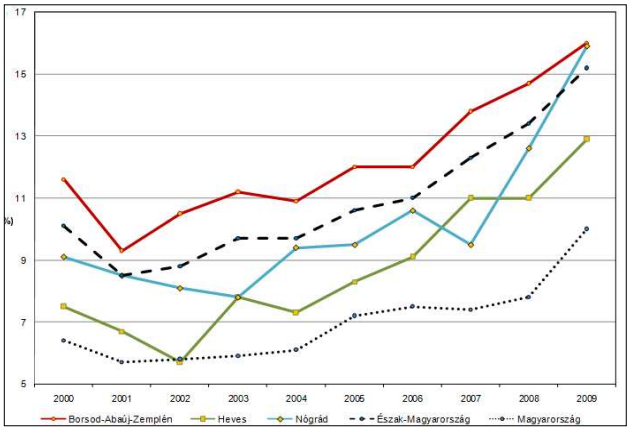
One of the most important measures of the development of an emerging economy like Hungary is its growth potential and catching-up pace. In the beginning of the 21st century, the Hungarian economy used to be the leading champion of the region with an annual growth rate of 4%. However from the second half of the first decade Hungary showed the most modest growth of the Visegrád countries. In 2009, the national GDP was hardly higher than 6 years earlier – compared to the EU-15 average. Today, Hungary is one of the economies with the worst performance and growth potential within Europe.

According to the situation of competitiveness in 2011, the reason for the trend-like decay of the performance of the Hungarian economy seen in the last decade was not external prosperity, nor was the slowing effect of the cycle of fiscal restrictions that characterized only the second half of the decade the primary reason was structural problems which mean a permanent decrease in competitiveness.

B.A.Z. County produces 4.5% of Hungary's and 60% of the North Hungary region's GDP. Since the beginning of the 21st century, the county showed an average GDP growth of over 4%. In case of this region, we can talk about catching up to the national performance only since the first decade of the 21st century. The years of 1995-2000 were characterized by the long-lasting processes of crisis but an economic change in trends appeared afterwards. This can also be seen in the added value production of the county: its 2007/2000 index is 241.7% while the national index is 215.1% (Borsodi TOP 100, 2008). Until 2007, we can say that the economic performance indicators calculated at current price also increased at real price, and the development of most indicators of the county reached or surpassed the development of the national indicators.

By today, the machine industry and energy industry have became the priority sectors but service activities are also becoming more and more important. This is reflected in the employment and investment data of B.A.Z. County.

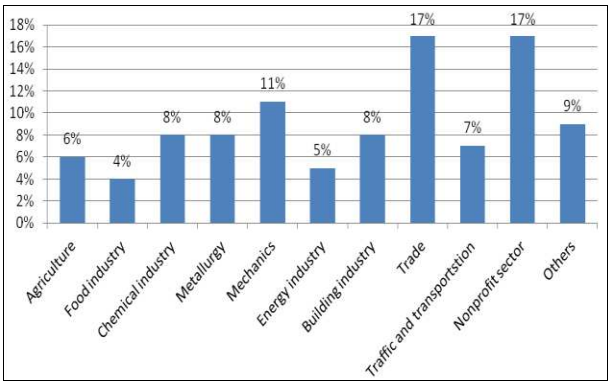
In B.A.Z. County, the economic problems of the previous years are sharply reflected in the labour market conditions – the employment rate has lagged far behind the national indicators since the systemic changes. The reasons behind the problems of unemployment are the inequality of the supply of and demand for labour (because of the lack of qualifications and general knowledge) and the high and in the last decade several times increased charges of labour. At a regional level, based on the 2008 data, the activity rate was 50.4% (national average 54.6 %) and the employment rate was 43.7% (national average 50.3%). By 2009, the unemployment rate of the region had reached 16%, while the national average was slightly below 12% (Borsod Top 100, 2009)(BVKI, 2010)



Source: Hungarian Central Statistical Office (KSH)

Figure 4. Unemployment rate in the North Hungary region (2000-2009)

Considering employment, the contribution of trade and the non-material branches is outstanding with 17% (2009), while the machine industry (11%), chemical industry (8%) and metallurgy (8%) also provide a significant number of workplaces. A special characteristic of the county is the outstanding employer role of the energy sector (5% compared to the national average of 1%).

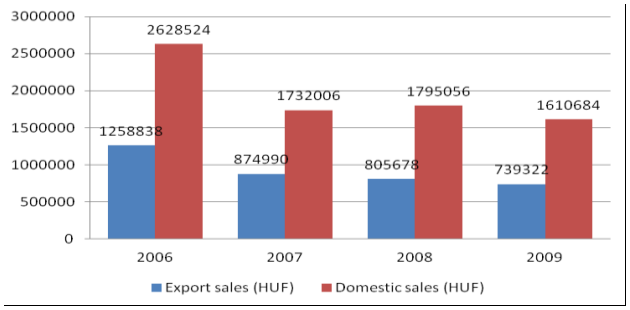


Source: TOP 100 Borsod, 2011

Figure 5. Distribution of employees by sectors B.A.Z. County 2009.

Hungary is one of the most open economies of the European Union. In the last decade, the country was able to continuously increase its exports – with the exception of 2009 when a decline in world trade occurred due to the global crisis. Since 2005, net exports had definitely been the engine of the development of the Hungarian economy. Exports that were permanently higher than imports were a result of the favorable conditions in the foreign markets. In 2006-2007, the decrease in investment continued: its volume has continuously decreased since 2006; in 2009 it was even smaller than the rather low 2008 basis.

In B.A.Z. County, the income from export sales has been decreasing since 2006 proportionally with the decrease in net turnover. Taking into consideration the changing HUF exchange rate of key currencies makes the above tendency even worse. In the mentioned years, the machine industry (41.6%), chemical industry (41.9%), metallurgy (10.1%) and food industry (1.7%) provided a permanent and significant basis of export.

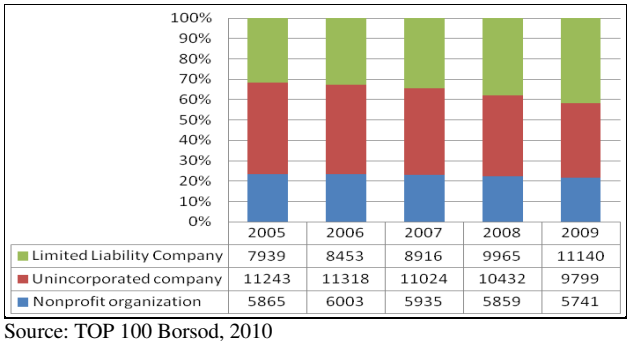


Source: TOP 10, Borsod, 2010

Figure 6. Export and domestic sales in B.A.Z. County

Corporate Activity of Borsod-Abaúj-Zemplén County

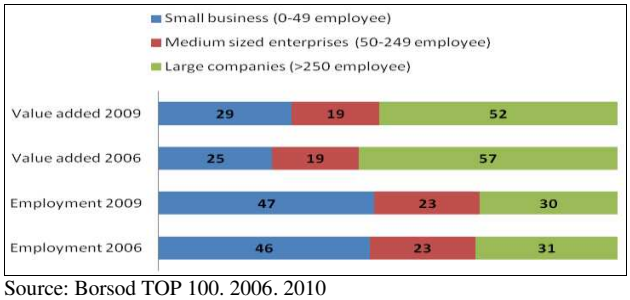
Until 2009, the number of active firms based in B.A.Z. County followed certain trends. The number of joint ventures tends to grow slightly– within this, the growth of non-liability company with legal personality is higher than the average. The most common form of enterprise is still the Limited Liability Company. The number of firms without limited liability is decreasing, mostly in case of Limited Partnerships. Because of the lower risk of business liability, more and more firms without legal personality have decided to be transform themselves into limited liability companies. The number of non-profit organizations is also decreasing year by year.



Source: TOP 100 Borsod, 2010

Figure 7. Distribution of joint ventures in B.A.Z. county

In addition to the determining economic weight of the few large firms in the county, SME-s (98.4%) play a major role. SME-s provide 47% of the county's workplaces, by 2009, their role in employment had increased by 1%. Considering added value creation, they increased their market share from 25% to 29% in the county from 2006 to 2009.



Source: Borsod TOP 100. 2006. 2010

Figure 8. Performance of entrepreneurships in B.A.Z. County by corporate size

Hindering Factors of Enterprises in B.A.Z. County

In 2008, the economic situation, market relations, economic performance and future plans of enterprises within B.A.Z. County were examined using a questionnaire survey. The survey was executed with the involvement of interviewers in the period of March to May 2008.

The analysis was made based on a sample consisting of 535 enterprises. This means that 0.723% of the enterprises operating in B.A.Z. County in 2008. Representativity was more or less ensured considering micro-regions and sectors. The sample contained small and medium sized operating joint ventures (SME-s) with at least two closed financial years.

Considering that our basic aim was to discover the factors and barriers of growth in the case of the enterprises that showed some potential for growth, we excluded the smallest enterprises with 0-1 employees and sole proprietorships from our list.

Table 4
The number of economic players in B.A.Z. County (2005-2009)

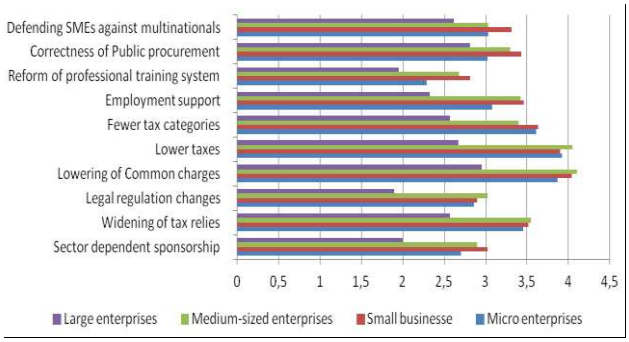
	2005	2006	2007	2008	2009
Joint ventures	25047	25774	25875	26256	26680
Sole proprietorships	23900	22272	21649	20864	19638
VAT-affected private persons	9030	8806	10280	26884	28271
Active taxpayers in total	57977	56852	57804	74004	74589

Source: own edition based on the data of Hungarian Central Statistical Office (KSH) and Tax and Financial Control Administration (APEH)

Table 5
Enterprises in the sample by branch

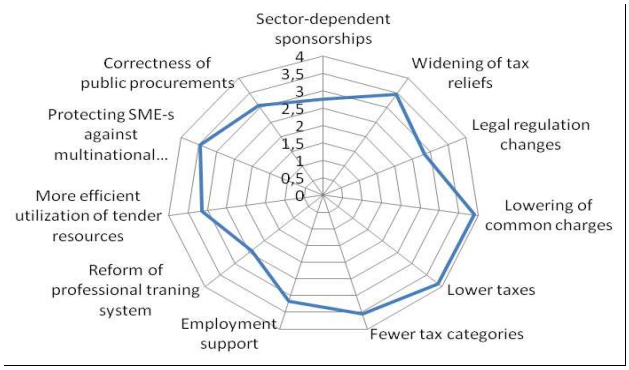
Principal activity	Numberof samples
A Agriculture, farming, forestry	17
C Mining	4
D Processing industry	70
E Electricity, gas, steam and water supply	11
F Construction industry	73
G Commerce, repair	198
H Accommodation, catering	29
I Transport, warehousing, post, telecommunication	22
J Financial brokerage	10
K Real estate brokerage, economic services	52
L Public administration, defence, social security	2
M Education	8
N Healthcare, social benefits	8
O Other community and personal services	25
P Households	6
Q Other organizations	0
Total	535

The executives of the enterprises involved in this research all consider the high taxes, the difficulties of borrowing and tendering resources serious problems – regardless of the size of the enterprise. On a 5 point Likert scale, the scores were higher in case of the micro, small and medium-sized enterprises, while in case of the large firms these hindering factors of growth received only medium scores (Figure 9).



Source: own research

Figure 9. Hindering factors of growth in case of enterprises of B.A.Z. County (2008)



Source: own research

Figure 10. Average scores of growth factors, according to the responding enterprises

According to the theories of growth, in the less developed economies and sectors, resource-driven growth is determining, while in the developed, so-called propulsive industries R&D and innovation are the engine of growth. In modern economics development can be supported mostly by credit. Examining the difficulties of borrowing, the respondents highlighted the high interest rates, the high cover expectations of financial institutes and the too bureaucratic credit administration. However, we have to emphasize that the research was done before the outbreak of the financial crisis. Now these difficulties influence the enterprises even more seriously due to the stricter credit policy of commercial banks.

Table 6
Difficulties of borrowing according to the enterprises included in the sample

Size of the enterprise	micro	small	medium	large
High interest rates	24 .04%	21.72%	29.66%	28.13%
High requirements	18.59%	25.09%	25.42%	9.38%
Time-consuming procedure	13.78%	14.61%	10.17%	18.75%
Complicated application method	12.18%	10.49%	9.32%	3.13%
Short period of grace in loan	1.60%	1.12%	3.39%	3.13%
Too bureaucratic administration	13.94%	16.10%	13.56%	21.88%
Low creditability	5.29%	1.12%	1.69%	0.00%
No borrowing	3.69%	3.75%	2.54%	0.00%
No answer	6.89%	5.99%	4.24%	15.63%

Source: own research

The results of this research show that increasing entrepreneurial willingness and strengthening the development aspirations of the gazelles (i.e. dynamically developing enterprises) mean the most important possibilities to support the development of the fast-developing SME-sector. Entrepreneurial willingness can be significantly increased by increasing the preparedness of employees by developing their education, foreign language knowledge and by organizing professional training courses for them. However, the operation of already existing enterprises can be supported by increasing the expenditure on R&D and innovation, by encouraging the practical usage of new knowledge and by decreasing the deductions.

The enterprises of B.A.Z. County typically serve the domestic markets and their foreign market activity is very low. In this way, they lagging ever more behind in the international competition. In an economic region that is becoming poorer and is lagging behind, the role of enterprises in employment and in paying local taxes could be determining, but to enable these enterprises to thrive a complex economic development strategy and economy activating instruments are needed.

Acknowledgements

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A Conceptual Framework for Definition of the Correlation Between Company Size Categories and the Proliferation of Business Information Systems in Hungary

PÉTER SASVÁRI, Ph.D.
ASSOCIATE PROFESSOR

e-mail: iitsasi@uni-miskolc.hu

SUMMARY

Based on a conceptual model, this paper aims to explore the background of the decision-making process leading to the introduction of business information systems among enterprises in Hungary. Together with presenting the problems arising in the course of the implementation of such systems, their usage patterns are also investigated. A strong correlation is established between the size of an enterprise, the scope of its business activities and the range of the business information systems it applies.
Keywords: Business Information System, Internet, Hungary
Journal of Economic Literature (JEL) code: M15, M21, C10

INTRODUCTION

The role of information has become more and more substantial in the economy recently, and information is regarded as an important resource since it is more difficult for companies to improve their market positions in the long term without having the appropriate amount of available information (Cser and Németh 2007). Globalization in the business world has brought about the possibility of getting a greater amount of information in much less time, which means that companies are forced to spend more time and energy on handling the increased information load (Erdős 2005).

As business information systems are designed to provide effective help in this process, they are becoming increasingly popular among companies due to the robust technological development (Floyd and Wolf 2010). This paper deals with the usage of business information systems among Hungarian enterprises and analyzes the following three key questions: how the usage of business information systems influences a company's economic performance, what expenditure is required for an individual company to develop its information technology infrastructure and finally, to what extent information technology is considered important as a functional area within the organization of a company (Bubenko 2011).

The aim of the research presented in this paper was to explore the current situation of Hungarian enterprises in terms of using business information systems, gaining a more thorough insight into the background of the decisions made on introducing such information systems, together with the possible problems related to their introduction and further usage (Erdős 2005).

THE CONCEPT OF BUSINESS INFORMATION SYSTEMS

There are several definitions offered on business information systems in the literature. According to Burt and Taylor's approach, "business information systems can be regarded as an information source in any combination thereof, or any access to and any recovery of their use or manipulation. Any business information system is designed to link the user to an appropriate source of information that the user actually needs, with the expectation that the user will be able to access the information satisfying their needs" (Burt and Taylor 2003: 52). Davis and Olson define business information systems as "an integrated user-machine system for providing information to support the operations, management, analysis, and decision-making functions in an organization. The system utilizes computer hardware and software, manual procedures, models for analysis, planning, control, and decision-making by using a database" (Davis and Olson 1985: 78).

"Information systems are a part of any organization that provides, generates, stores, separates, divides and uses information. They are made up of human, technical, financial and economic components and resources. In fact, they can be regarded as inherently human systems (organizations, manual systems) that may include a computer system, and automatizes certain well-defined parts and selected items of the system. Its aim is to support both the management functions and the daily operation of an organization." (Deák, Bodnár and Gyurkó 2008: 100)

In a broader sense, a business information system is the collection of individuals, activities and equipment employed to collect, process and store information related to the company's environment, its internal activities, together with all transactions between the company and its environment. Beyond giving direct support to operations, its basic task is to provide decision-makers with the necessary information during the whole decision-making process. The system's main components are the following (Drótos, Gast, Móricz and Vas 2006):

- Individuals carrying out corporate activities: the actual users of technical apparatus. Decision-makers also belong to this group, as leaders who receive information on the factors affecting business operations, and use business information systems to make decisions in relation to planning, implementation and monitoring business activities.
- Information (also known as processed data on external and internal facts) which – due to its systematized form – can be used directly in the decision-making process.

- Technical apparatus, nowadays usually a computer system that supports and connects the subsystems applied to achieve corporate objectives.
- The computer system standardizes a significant part of the information and communication system, thus making it easier to produce and use information.

According to one definition proposed (Csala et al., 2003: 110) "information systems are systems that use information technology to collect information, transmit, store, retrieve, process, display and transform information in a business organization by using information technology."

Raffai's understanding of information systems is as follows: "it uses data and information as a basic resource for different processing activities in order to provide useful information for performing useful organizational tasks. It's main purpose is the production of information, that is dedicated to creating messages that are new to the user, uncertainties persist, and their duties, to assist in fulfilling the decisions" (Raffai 2003: 60).

ALTERNATIVES TO THE CLASSIFICATION OF BUSINESS INFORMATION SYSTEMS

The classification of business information systems is a difficult task because, due to the continuous development, it is hard to find a classification system that can present unanimously defined information system types. It occurs quite often that different abbreviations are used to refer to the same system or certain system types appear to be merged together. As a consequence, the classification of business information systems can be done in several ways, the lists of several groups of business information systems presented below just to show a few alternatives for classification (Bencsik 2011).

Dobay (1997) made a distinction between the following types:

- Office Automation Systems (OAS): used for efficient handling of personal and organizational data (text, image, number, voice), making calculations and document management.
- Communication systems: supporting the information flow between groups of people in a wide variety of forms.
- Transaction-processing systems (TPS): used for receiving the initiated signals of transactions, generating and giving feedback on the transaction event.
- Management Information Systems (MIS): used for transforming TPS-related data into information for controlling, management and analysis purposes.
- Executive Information Systems (EIS): intended to give well-structured, aggregated information for decision-making purposes.
- Decision support systems (DSS): applied to support decision-making processes with information, modelling tools and analytical methods.
- Facility Management Systems (facility management, production management): used for directly supporting the value production process.
- Group work systems: intended to give group access to data files, to facilitate structured workflows and the implementation of work schedules.

Another possible approach to defining categories is based on Raffai's work (2003):

- Implementation support systems: this group includes transaction processing systems (TPS), process control systems (PCS), online transaction processing systems (OLTP), office automation systems (OAS), group work support systems (GS), workflow management (WF), and customer relation management systems (CRM).
- Executive work support systems: this category can include strategic information systems (SIS), executive information systems (EIS), online analytical processing systems (OLAP), decision support systems (DSS), group decision support systems (GDSS), and management information systems (MIS).
- Other support systems: business support systems, (BIS), expert systems (ES), integrated information processing systems (IIS), and inter-organizational information systems (IOS) can be found in this category.

Based on Gábor's (2007) findings, business information systems can also be examined by applying the following classification criteria.

- According to organizational structure:
  - functional systems such as reporting applications,
  - comprehensive business systems such as corporate management systems used by the entire organization,
  - inter-organizational systems such as reservation systems.
- According to the field of application:

Depending on the scope of activities, systems used for accounting, finance, production, marketing or human resource management belong to this category. These systems are generally related to the various functions a company performs.

- According to the type of support:
  - TPS (Transaction Processing System) – it focuses on a particular purpose, its basic function is to serve as a supporting tool for data processing related to business activities.
  - MIS (Management Information System) – it basically supports functional executive activities (O'Brien 1999).
  - KMS (Knowledge Management System) – it facilitates the execution of tasks related to knowledge as a valuable corporate resource.
  - OAS (Office Automation System) – it supports office document management, group work and communication.
  - DSS (Decision Support System) – it supports decisions made by managers and analyses done by experts.
  - EIS (Enterprise Information System) – it is designed to support the whole organization and its management.
  - GSS (Group Support Systems) – it facilitates the cooperation between ad hoc and permanent work groups both within an organization and between different organizations.
  - ISS (Intelligent Support System) – it is mainly designed to support the work of employees performing mental work.
  - Applications supporting production activities: CAD/CAM (Computer Aided Design/Computer Aided Manufacturing) – they are designed to support planning and production processes by using information technology devices (Shaw 1991).

Finally, let us take a look at another classification system originally suggested (Kacsukné and Kiss 2007), which also

served as a starting point for conducting the primary research presented in this article.

- TPS (Transaction Processing System): it is used for collecting, storing, modifying, and retrieving the daily transactions of a business organization. It usually consists of an advanced database system for such business events as settlement of accounts, sales, rental payments, orders and raw material purchases.
- MIS (Management Information System): it is used to analyze operational activities in the organization. It makes pre-defined reports at regular intervals even when special events occur; it focuses on the information need of managers and gives assistance to solve well-defined problems. It is efficient mainly at an operational or tactical level (Laudon 2009).
- DSS (Decision Support System): it is naturally emerged from management information systems, intended to help decision-makers to compile useful information from a combination of raw data, documents, and personal knowledge, or business models to identify and solve problems and make decisions. Its interactivity and the capability of elaborating problem-analysing models makes it especially effective at tactical levels.
- GDSS (Group Decision Support System): it is a further development of DSS where the stress is not at the level of personal decision-making; instead it supports joint decisions made by a group. Great emphasis is given to communication (e-mail, shared file access, video conferencing option).
- EIS (Executive Information System): it is designed to facilitate and support the information and decision-making needs of senior executives by providing easy access to both internal and external information relevant to achieving the strategic goals of a business organization. It is usually easy to use, offering user-friendly features.
- ERP (Enterprise Resource Planning System): its main purpose is to facilitate the flow of information between all business functions inside the boundaries of an organization and manage the relationships with outside stakeholders. It may include customer and supplier relationships and supply chain management as well. According to its most recent interpretation, it provides support to the full operational level by its modular structure.
- CRM (Customer Relationship Management System): it is designed to organize, automate, and synchronize business processes, mainly sales activities, but also those for marketing, customer service, and technical support. It also contributes to product development and the elaboration of marketing strategies.
- SRM (Supplier Relationship Management System): it is aimed at creating closer, more collaborative relationships with key suppliers in order to maximize the value realized through those interactions. As a cross-functional system, it provides support for decisions especially at operational and tactical levels (Hughes 2010).
- SCM (Supply Chain Management System): it is designed to facilitate the systematic and strategic coordination of the traditional business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of both individual companies and the supply chain as a whole. Its application is useful for making decisions both in operational and tactical levels (Harland 1996).
- BI (Business Intelligence System): it is designed to produce large amounts of information with the potential of leading to the development of new opportunities for a business organization. It often includes online analytical processing (OLAP), data mining, process mining, business performance management, benchmarking and predictive analytics. With its complexity, it proves to be one of the most powerful decision support tools.
- EPM (Enterprise Performance Management System): beside calculating performance indicators, its main task is to monitor and manage the hierarchy of indicators used to assess the overall performance of a business organization.
- KM (Knowledge Management System): it usually comprises a wide range of strategies and practices to identify, create, represent, distribute, and enable the adoption of knowledge. It is not strictly tied to managerial levels.
- ES (Expert System): it is designed to propose a solution to unstructured, specific problems where highly-prepared expertise is needed. It actually stores all the available facts and figures, then it draws conclusions based on them. Actually, the facts and rules are stored, and based on these conclusions. It is a special field of application within the broader area of artificial intelligence.

FACTORS AFFECTING THE IMPLEMENTATION OF BUSINESS INFORMATION SYSTEMS

When a business organization makes a decision about introducing any business information system, their decision can be explained by a variety of factors. The most common factors are as follows (Kacsukné and Kiss 2007: 245):

- "Technical considerations: companies applying fragmented, outdated business information systems with the lack of transparency.
- Strategic considerations: ERP systems may play a role in maintaining and enhancing competitiveness, they may establish the technical background to apply e-commerce solutions.
- Business considerations: among others, cost reduction and profit increase objectives, job cuts, stock reduction, reducing IT costs, improving productivity and more rapid turnaround of orders may belong to this group of factors."

Ideally, before a company decides to introduce a business information system, they consider a large number of factors. The most important step during this process is to select the most relevant aspects, then, after weighing them carefully, the management of a company can choose the best offer available. According to Kacsukné and Kiss (2007), these aspects can be the following:

General aspects

- Availability of documentation: it is also important for a company to investigate the availability of user guides, manuals and other system support documents.
- Compatibility: it is also an important matter if the newly introduced system fits the existing hardware and software assets, and whether it is compatible with the hardware and software devices available on the market.
- Costs: in the process of introducing a business information system, a business organization not only has to pay the price of a software product but it also has to pay attention to the additional costs related to its introduction such as education, professional and license fees, not to mention some incurring costs during its usage (telecommunications, maintenance and repair costs). In order to make an optimal

decision, it is recommended to consider some other indirect effects of the introduction as well.

- Ergonomy: the user-friendly nature of a system or an application is monitored here, with a special emphasis on their effects on the human nervous system, the eyes and hands.
- Modularity, expendability: in the market of business applications, companies generally purchase the modules of various business information systems that are necessary to perform certain functions, maintaining the possibility of adding more modules to the purchased system in the future.
- Network access: it also should be considered whether the newly-implemented system can be integrated into the existing network. In the case of hardware, it is a question of physical interface, whereas in the case of software the real question to be considered whether the new application can run in a network environment.
- Performance: a decision can be deeply affected by such information on the performance of the desired business information system as speed, capacity features, and the necessary operating systems for its usage.
- Reliability: it is important to determine whether there is a risk of failure and the extent to which occasional errors may result in damage. There are available systems that already have built-in self-monitoring and error diagnostic functions. The criterion of reliability is particularly important in those areas where human life is at stake or the occurrence of a failure may end up in causing huge financial losses (in hospitals, air traffic control, banks, etc.).
- Support service: it may also be an important factor to what extent the manufacturer provides the installation, maintenance and repair of the newly-introduced system.
- Technology: as in the case of products, product life cycle is a crucial factor in business information systems. A business organization has to decide whether to take the risk of experimenting with a brand-new technology or to resort to using more proven but less modern systems.
- The manufacturer's reputation: although this aspect is not included in the referenced literature, it is possible that some companies prefer to ask for an offer from a larger, more respected service provider, ignoring smaller companies that may provide the same services with the same quality.
- Usability: first, a business organization has to consider whether the applicable system is suitable for the tasks it is required to perform. If it turns out that the selected system is only partially able to fulfill the requirements, decision-makers will have to make compromises in terms of their needs, after taking other aspects into account.
- Warranty: this includes the evaluation of the warranty services and conditions provided by the manufacturer.

Specific aspects

- Availability of new software versions: it is reasonable to think about the future when selecting a business information system, that is, to check if there will be any new versions available for the selected system, what areas will be affected by the occasional upgrades, how quickly they will be done, and what additional costs will be incurred.
- Customer support: this means that a business organization needs to know whether the producer is willing to provide customer support in the phase of introduction and after introduction if needed.
- Flexibility and customization: how much flexibility is provided to serve unique customer needs in connection with the construction of the system may depend on the type of the applied system or on the developer company. It is therefore important to take into account to what extent the implementation of a new system can be adapted to already established business processes. It is not reasonable to change well-functioning and long-established business processes in order to meet the capabilities of a newly introduced system, just because the new system is unable to adapt to the specific needs of the company.
- Free trial period: it is possible that some companies may choose a system based on experiences gained during a product demonstration or the testing of a shareware application.
- Security: it is very important for a company to take into account protection options against the possibility of causing intentional or accidental damage to a company's existing network system.

THE AIM AND THE CONCEPT OF THE RESEARCH

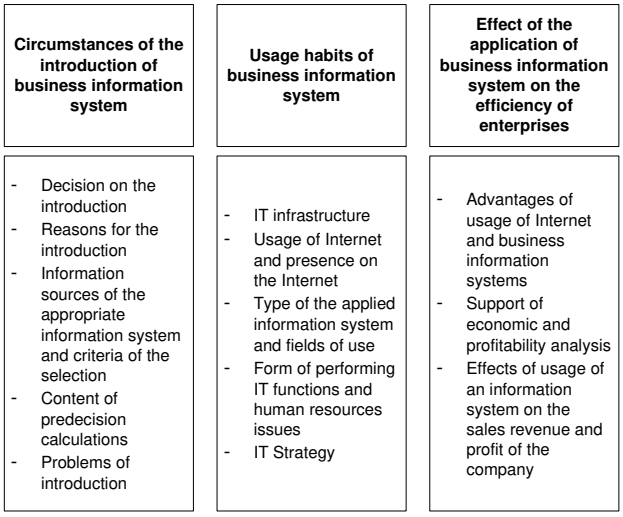
The review of the relevant literature on the subject made it possible to identify the most important points of the research. Based on these, the main objectives as well as the concept of the research were formulated. The research objectives are the following:

- to present the background of the decisions related to the introduction of business information systems, along with the problems encountered in the phase of their introduction,
- to analyze the usage patterns of business information systems,
- to reveal the connection between using business information systems and the operational effectiveness or profitability of companies.

Based on the aims presented above, the following research concept was determined:

- First, the major issues related to the introduction of business information systems were analyzed. It was surveyed whether the companies taking part in the study used any sort of business information systems, and if not, what causes or conditions prevented them from introducing them. In the case of companies applying business information systems, the causes of introducing such systems, the information sources for selecting the appropriate systems, and the criteria for selecting them were also investigated. It was also examined whether companies had made calculations on the costs of introducing business information systems before making decisions on them, and if so, what aspects had been taken into account during the calculation. The problems occurring in the phase of implementation were identified.
- After that, the usage patterns of business information systems at companies were examined. The main points of the relevant analysis were the given company's information technology infrastructure, its Internet usage habits, and its appearance on the Internet. Here, the types of the applied business information systems and their areas of use were also presented, then the forms of information technology functions, human resource issues and the main points of IT strategy were covered.
- In the closing part of the analysis, the impacts of using business information systems on the operational effectiveness of companies were examined. It was

investigated whether the introduction of such systems had an influence on the performance and revenues of the company as well as the size of the targeted market and the changes on the demand side. Another point of the investigation was whether ensuring more efficient information flow and information management contributed to the reduction of the company's other costs. These factors, summarized in Figure 1, of course, cannot be quantified so easily; however, taking them into consideration can lead to making more firmly grounded decisions on the introduction of various business information systems.



Source: own elaboration

Figure 1. Conceptual model of the primary research

THE RESEARCH METHOD

The empirical survey was carried out using a written questionnaire. In the phase of compiling the individual questions of the survey, the main results of the previously conducted empirical surveys on the subject were also taken into account.

The questionnaire was divided into five major parts. The first part included some basic questions about the companies' background (such as their location, fields of operation, number of employees etc.), then questions related to the responding company's information technology infrastructure followed. In the third part of the questionnaire, the emphasis was put on questions enquiring about the Internet-using habits of the companies; the fourth group of questions was aimed at enquiring about the usage patterns of business information systems, making it the most detailed part of the questionnaire. The closing part contained questions about the IT-skilled human resources employed by the responding companies.

The questionnaire was sent out to several hundreds of companies, The Hungarian survey was conducted both in a paper-based format and online with the assistance of the software application called Evasys. For evaluating data and presenting the results of the survey, the statistical software packages Excel 2007 and SPSS 19.0 were applied.

THE BACKGROUND CONDITIONS OF INTRODUCING BUSINESS INFORMATION SYSTEMS OF THE SURVEYED COMPANIES

The circumstances of decisions concerning the introduction of business information systems were analyzed. The first task was to gain more information on whether the surveyed companies apply any kind of business information system.

Based on the results, it can be stated that 17% of the respondents do not apply any kind of business information system and do not plan their introduction, while 11.7% of them were not applying any kind of business information systems at the time of being questioned but did not exclude the possibility of introducing such systems later.

It was interesting to examine the reasons why a company did not use any of above-described business information systems. Mostly the size of the company justifies why a company does not apply any kind of business information system. More than three-quarters of the microenterprises do not think about using business information systems due to the size of the company. In addition, the financial resources of the company may influence the decision on the introduction of a business information system; a quarter of the microenterprises stated that the lack of financial means was behind ignoring such systems. In some other cases, business information systems were not introduced due to the lack of management need; however, this is only typical of small and medium-sized enterprises. A statistical analysis is shown in Table 1, demonstrating that in many cases the lack of senior management interest prevented the introduction of a new business information system. However, no significant correlation was found between company size and the possible causes of not introducing any business information systems.

Table 1
Reasons for the decision not to use a business information system
(Phi, Cramer's V and Contingency Coefficient values)

Possible reasons of the decision	Phi		Cramer's V		Contingency Coefficient	
	Value	Approximate Significance	Value	Approximate Significance	Value	Approximate Significance
The lack of senior management interest prevented the introduction of such information systems*	0.213	0.233	0.213	0.233	0.209	0.233
The introduction of such information systems is not required because of the size of the company	0.600	0.000	0.600	0.000	0.514	0.000
The company's financial means do not allow the introduction of such information systems*	0.239	0.145	0.239	0.145	0.233	0.145

* No correlation
Source: own elaboration

Companies were asked to rank the selection criteria for introducing business information systems on a scale of 5. As can be seen in Figure 2, usability proved to be the most important factor, that is, that the selected information system would be capable of performing the necessary tasks. This was regarded as the most vital criterion mostly by microenterprises.

The value of reliability as a criterion reached 4.5 on average, which shows that companies attribute great importance to how high the risk of system failure can be.

	Micro-enterprise		Small-sized enterprise		Medium-sized enterprise		Corporation	
General aspects:								
Usability	✓	5,00	✓	4,46	✓	4,60	✓	4,83
Reliability	!	4,13	✓	4,46	✓	4,60	✓	4,56
Network access	✓	4,38	!	4,23	✓	4,50	✓	4,67
Compatibility	!	3,75	✓	4,54	✓	4,38	✓	4,56
Performance	!	3,88	✓	4,38	✓	4,32	✓	4,28
Costs	✓	4,63	!	4,23	!	4,12	!	4,17
Support service	!	3,75	!	3,92	✓	4,40	✓	4,33
Modularity, extendability	!	4,13	!	4,08	!	4,04	✓	4,50
Warranty	!	3,63	!	3,69	!	4,20	!	4,22
Technology	✗	3,25	!	3,62	!	4,00	!	4,17
Availability of documentation	!	3,50	!	3,92	!	3,92	!	4,00
Ergonomy	✗	3,25	!	3,69	!	3,58	!	3,59
Manufacturer's reputation	✗	2,75	✗	3,31	✗	3,29	✗	3,17
Specific aspects:								
Security	✓	4,38	✓	4,31	✓	4,40	✓	4,39
Flexibility, customization	✓	4,38	!	4,15	✓	4,28	!	4,17
Customer support in the phase of introduction	✗	2,88	!	4,08	!	4,16	!	4,06
Compliance with information strategy	!	3,63	!	3,77	!	4,04	!	3,94
Availability of new software versions	!	3,63	✗	3,42	!	3,92	!	3,89
Free trial period	✓	4,38	!	3,85	!	3,64	!	3,67
Customer support after introduction	✗	2,86	!	3,67	!	4,04	!	4,00

check mark ✓ = higher than average, ✗ = average, ! = lower than average
Source: own elaboration

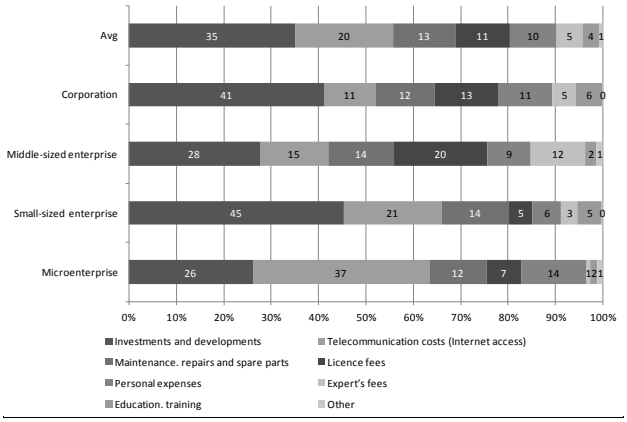
Figure 2. Selection criteria for applying business information systems: average points by company size

Several criteria reached a higher average value than 4. According to the scores, the main criteria to be considered are whether the system operates in a network environment, fits in the existing system environment, and secures protection against accidental or intentional damage. In addition, companies consider the performance, the costs and the customization of the system as well. The consideration of costs may receive greater emphasis in case of microenterprises, because fewer resources are at their disposal to implement a business information system compared to the opportunities of a corporation. The companies also marked the assurance of service and support, future expansion possibilities of the system and the warranty conditions as important criteria. It can be seen that there are significant differences in the evaluation of companies by company size regarding the above criteria. The responding microenterprises gave significantly lower values the customer support both during and after introduction. One possible reason for this can be that introducing business information systems for customer support requires more resources from the company; the lack of capacity may prevent them from introduction. Compatibility as a criterion is also was also given lower values in their responses, which can be due to the fact that it rarely occurs when the new system fits into a previously introduced system, either because the new one is not compatible with existing softwares or its complex features do not meet the basic needs of microenterprises.

Another important goal of the research is to find an answer to the question of whether the enterprises carried out calculations on expenditures when making a decision on the introduction of a business information system and the selection of the appropriate system, and what items were taken into account during the calculation. The question was justified by the often-raised issue that following the introduction of a system, numerous hidden costs came to light on which the companies had not counted.

Apart from taking into account expenditures, it was also relevant to ask whether the companies analyzed the possible effects of the introduction of business information systems on sales revenue, profits and other costs.

The following expenditure items related to business information systems were taken into consideration: investment and development expenses, repair, maintenance, cost of spare parts, telecommunications expenses, costs corresponding to education and training, professional fees, licence fees and personnel expenses.



Source: own elaboration

Figure 3. The structure of actual annual IT expenses reported, average values by company size

Table 2 contains important information about several aspects concerning the content of calculations prior to the introduction of a business information system. Several factors were listed in the questionnaire concerning the content of the calculation. The respondents were required to declare whether they had taken into account the given factors during their calculations or not.

Table 2
IT expenses and economic effects taken into account before the introduction of business information systems

IT-expenses and economic effects	Corporation	Medium-sized enterprise	Small-sized enterprise	Micro-enterprise
Investment and development costs	77.78%	76.47%	88.46%	100.00%
Personal expenses	88.88%	76.47%	69.23%	100.00%
Telecommunication costs	77.78%	93.75%	65.38%	89.48%
Cost of maintenance and repairs	55.55%	76.47%	84.00%	100.00%
Licence fees	33.33%	88.24%	92.31%	94.74%
The indirect effect of introducing the new information system on revenues	55.56%	78.57%	69.23%	84.21%
The indirect effect of introducing the new information system on profits	55.55%	64.71%	61.53%	83.33%
Expert's fees	33.33%	64.70%	76.92%	84.21%
Costs related to training and education	33.33%	58.82%	60.00%	84.21%
The indirect effect of introducing the new information system on demand	22.22%	64.71%	68.00%	66.67%
The indirect effect of introducing the new information system on other costs not related to information technology	44.44%	21.43%	60.00%	73.68%

Source: own elaboration

Based on these findings, the following connections came to light. Ranking of certain IT expense items within the total expenditures is also reflected in whether companies took these expenses into account during the calculations carried out before the introduction. It can be seen in Table 2. That, based on the total data of the responses, investment and development expenses, telecommunication costs, personnel expenses as well as repair and maintenance costs were mainly considered during the calculations. Compared to the relatively low rate of corporations, the companies of other size categories gave great importance to licence fees in their calculations.

Some significant correlations arose in terms of size categories as well. The average values of companies belonging to the largest size category proved to be the highest almost in all aspects. As a consequence, corporations carry out the most extensive and careful calculations before the introduction of a business information system. In their case, both personnel and expertise conditions were available for performing such calculations. On the contrary, in the case of microenterprises, the lowest values were shown in the majority of the factors. For microenterprises, as they have fewer personnel in order to carry out such economic examinations, although raising funds for investments and operating resources means the greatest problem for these companies. Strong correlations with the size of the company can also be discovered in the cases of several other items.

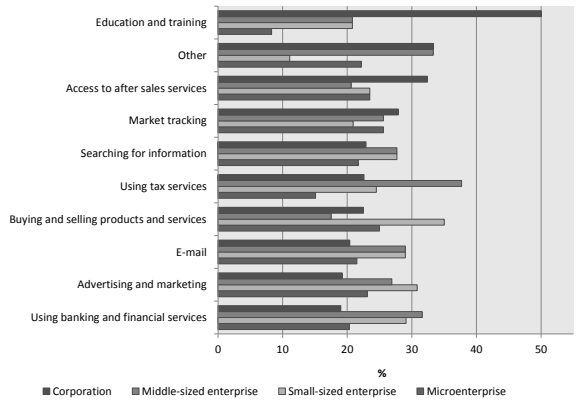
THE USAGE PATTERNS OF BUSINESS INFORMATION SYSTEMS

In connection to the IT infrastructure, the following two questions were to be answered: whether a server-based network operated at the company, and the total number of computers operating at the company site. Based on the received figures, it can be asserted that two-thirds of the respondents (69.1%) operate a server-based network. Considering the number of the computers at the company, correspondence with the size of the companies is natural. At corporations the average number of the computers was 549, at medium-sized enterprises there were 55, at small-sized companies there were 7, at microenterprises there were only 3 computers on average.

Perhaps it is not surprising in today's world that all of the respondent companies have Internet access. Among the objectives of using the Internet, there are a few remarkable differences by size categories. As Figure 4 shows, primarily corporations use the Internet for education purposes. Besides the use of tax advisory services and purchase of goods and services there are no big differences between the purpose of use according to size categories, however it can also be realized that in most categories the ratio of corporations are lower compared to other size categories.

In terms of "other" purposes of use, several responses were received that could not be classified into the optional categories, for example submission of project tender applications, website updates, benchmarking, the use of a web-based trading system, access to the central database via company programmes, service providing via the Internet, connection to external partners and companies through a part of the company's network, development of new services, development of new services related to education, seeking long-term business partners.

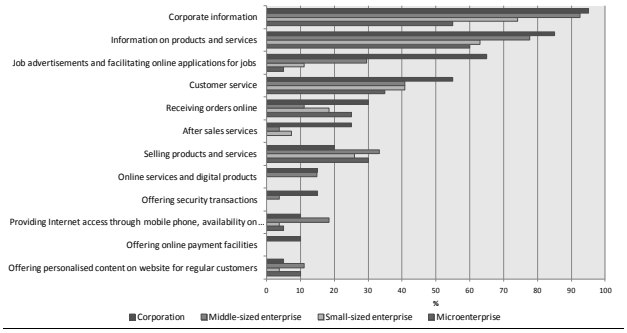
Of the responding companies, 86.2% have a website. This figure also shows that nowadays a website is already a standard tool for the majority of the companies and a presence on the Internet is becoming more and more natural.



Source: own elaboration

Figure 4. The purpose of using the Internet among the surveyed companies by size category

Every company website offers a wide range of information and services. Companies having a website provided the services listed in Figure 5. Not surprisingly, most of the information placed on their websites is connected to the companies and the products and services they offer. In terms of company size, mainly medium-sized companies and corporations use their websites for this purpose. In addition, the most common features are providing customer service such as e-mail or a forum for their products and services, sales of products and services, placing job advertisements, and receiving online orders. In order to carry out secure transactions or provide online digital services and online payment options, a much more complex website is required, whose maintenance and development needs major resources. This could explain the fact that these options are provided only by medium-sized companies and corporations.



Source: own elaboration

Figure 5. On-line services provided by companies based on their size

Business information systems were applied in different areas, representing a different development level listed in the questionnaire. The respondents had to declare if there was an operating business information system of the kind at their company; if the answer was no, they were asked whether they were planning to introduce such a system later.

Three-quarters of the corporations use transaction processing systems (TPS), and one-tenth of them are planning to introduce TPS in the future. More than half of the medium-sized companies and almost a third of small-sized enterprises also use such systems; however, the number of microenterprises is irrelevant in this regard.

Similar ratios could be detected in the case of office automation systems (OAS) and enterprise resource planning systems (ERP), with the only difference that the latter could not be found in microenterprises and only 10% of them were planning to start applying such systems.

Supplier relationship management systems (SRM) are used by nearly two-thirds of corporations, while the same rate among medium-sized enterprises is only 37%. The use of these systems by microenterprises was insignificant.

Supply chain management system (SCM) applications are used by 40% of corporations and the remaining ones do not plan their introduction. A fourth of medium-sized companies already use supply chain management systems and another fourth of them are planning their introduction. About one-tenth of small-sized businesses apply such systems and there is a very small proportion of microenterprises using them.

Half of the corporations and nearly half of the medium-sized companies have customer relationship management systems (CRM) in use. More than a third of microenterprises are planning to introduce CRM systems in the future but their scale still remains very small. Geographic information systems (GIS) are used primarily by corporations, with a relatively high proportion of 40%, but surprisingly, some microenterprises also operate geographic information systems and a further 15% of them are planning to apply GIS in the near future.

An Intranet operates at the vast majority (reaching 80%) of corporations, more than one-third of the medium-sized companies also have internal network, and in addition, at the small and micro-enterprises it is operated or it is planned to be implemented in a similar proportion.

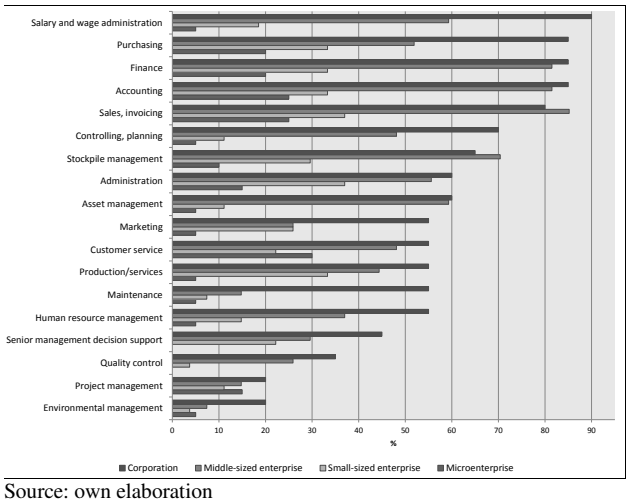
It was also investigated whether there was a relationship between company size and the use of information systems in different operational areas of the company. It was proved by the help of a cross-analysis that there was a significant relationship between fifteen operational areas and company size (Table 3).

Table 3

Use of information systems according to the operational areas of enterprises (Phi, Cramer's V and Contingency Coefficient values)

Operational areas	Relationship	Phi		Cramer's V		Contingency Coefficient	
		Value	Approximate Significance	Value	Approximate Significance	Value	Approximate Significance
Accounting	moderate	0.540	0.000	0.540	0.000	0.475	0.000
Finance	moderate	0.565	0.000	0.565	0.000	0.492	0.000
Salary and wage administration	moderate	0.648	0.000	0.648	0.000	0.544	0.000
Human resource management	weaker than moderate	0.413	0.000	0.413	0.000	0.382	0.000
Senior management decision support	-	0.350	0.009	0.350	0.009	0.330	0.009
Controlling, planning	moderate	0.547	0.000	0.547	0.000	0.480	0.000
Purchasing	weaker than moderate	0.458	0.000	0.458	0.000	0.417	0.000
Stockpile management	weaker than moderate	0.492	0.000	0.492	0.000	0.441	0.000
Asset management	moderate	0.514	0.000	0.514	0.000	0.476	0.000
Maintenance	weaker than moderate	0.483	0.000	0.483	0.000	0.435	0.000
Production/services	-	0.365	0.006	0.365	0.006	0.343	0.006
Sales, invoicing	moderate	0.525	0.000	0.525	0.000	0.465	0.000
Environmental management	-	0.220	0.208	0.220	0.208	0.215	0.208
Customer service	-	0.291	0.047	0.291	0.047	0.279	0.047
Marketing	weak	0.367	0.005	0.367	0.005	0.345	0.005
Administration	-	0.341	0.012	0.341	0.012	0.322	0.012
Quality control	weak	0.389	0.003	0.389	0.003	0.363	0.003
Project management	-	0.087	0.869	0.087	0.869	0.087	0.869

Source: own elaboration



Source: own elaboration

Figure 6. Use of information systems according to operational areas by company size

As can be seen in Table 3, there is a moderate relationship in the fields of salary and wage administration, accounting, finance, controlling, planning, tangible asset management, sales and invoicing, while a weaker-than-moderate relationship can be observed in the fields of human resources, maintenance, purchasing, stockpile management, administration, production, service and management support. A weak relationship was detected in the fields of marketing and quality assurance.

CONCLUSIONS

Nowadays the issue of information technology in business is moving into the centre of attention, which is also indicated by the fact that more and more companies, not accidentally, recognize its importance. Business information systems are not only fashionable – their application promotes more efficient operation of the company and also improves the supply of information to decision-makers; applying such systems can also play an important role in helping companies to put greater

emphasis on information technology in order to gain a competitive advantage.

My aim was to present the circumstances of the decisions made about the introduction of business information systems and problems emerging during the introduction as well as to analyze the usage habits of companies applying these systems, and to explore the relation between the application of business information systems and the operational effectiveness of the business.

Based on the scientific literature, I worked out a conceptual model appropriate for the aims of the research, serving as a base both for the questionnaire and the analysis. The primary focus of the analysis was to explore the differences and similarities of the usage habits of business information system by size categories. Thus, the micro-, small and medium-sized enterprises as well as corporations were also presented in the sample.

According to my observation, the correlation between the given factors could even be further strengthened by the application of complex statistical methods and by performing additional correlation assessments where the comparison should be carried out based on the main activity of the company rather than the size of the company, as I assume that the business scope of a company also determines the range of business information systems in use.

Acknowledgements

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Technology Transfer: An Efficient Means of Knowledge Flow

DEZSŐ SZAKÁLY
ASSOCIATE PROFESSOR

e-mail: szvszad@uni-miskolc.hu

SUMMARY

The factor to what extent a country can join the more and more intensive international technology transfer is one that has a decisive impact on the development of the national economy. In the past few years it has been possible to observe two characteristic phenomena in the efforts of the countries undertaking dominant roles in the transfers completed for making the knowledge flow more intensive. One is the result of globalisation and company activities becoming more international, which can be shown in the steady growth of transfer traffic. The other is an effort manifested in the countries taking specific steps to balance their transfer balance and to ensure that it is in the black. [1]
Keywords: technology transfer, transfer models, innovation
Journal of Economic Literature (JEL) codes: O24, O32

INRODUCTION

An OMFB study (1998) relying on an analysis of OECD statistics highlights some important tendencies in this context:

- Technology supply is much more concentrated than demand. The largest users are the service industries, while the majority of R&D expenditures are concentrated in narrow industrial fields.
- In evaluating technology diffusion, the expenditure on technology purchase is to be taken into account beyond direct R&D expenditures.
- The significance of imported technology has steadily increased in the past one and a half decades. In smaller, moderately developed countries like Hungary, its extent is over 50%.
- Global, relatively barrier-free technology diffusion played a decisive role in the global increase in the efficiency of Information Communication Technology (ICT) sectors.
- Technology diffusion provides efficient support in strengthening the transfer processes and their methodology and infrastructure support. This is of particular importance for small countries and for countries conducting intensive international trade.

THE CONCEPT OF TECHNOLOGY TRANSFER

The term technology is derived from the Greek language. The word used today is made up by connecting the words 'techne' and 'logos'. The word 'techne' was used to mean manual skills or, in a more general sense, skills and ability. The word 'logos' corresponds to the content knowledge, science. And accordingly, the word made up of the two corresponds to skills, competence, aptitude for something in a broad sense of the word, and the knowledge required for it (Shane, 1982).

In a more general sense in today's interpretation technology is a result of the synergic combination of four factors (knowledge elements) (Figure 1).

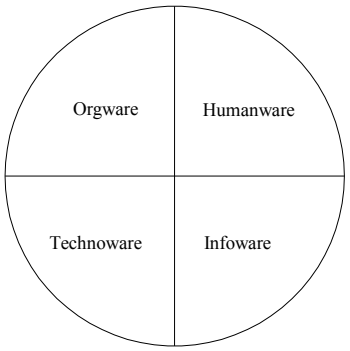

Figure 1. Components of technology

The four knowledge carriers identified above can at the same time be regarded as the objects of technology transfer. In a general sense the concept technology is used to mean the elements of knowledge concerning the implementation of something, which includes the product and/or service to be created, the process of implementation (production–distribution) and the related additional knowledge (management, experience, competence). And technology transfer means the flow of all these technical and knowledge components between the various organisations and persons.

Today technology is defined in a broader sense as a specific 'know-how', a sum of knowledge (Shane, 1982; Korean Science and Engineering Foundation, 1994). This interpretation has the essential feature that it does not narrow the concept down to the level of knowledge concerning specific production processes or manufacturing technology, but treats it as a complex set of knowledge necessary for creating an enterprise and organising and operating the systems of production and distribution.

[1] *The international flow of knowledge is surveyed by OECD primarily using the data of the technological balance of payments quantifying the foreign trade in brands, licences, know how, patents, and intellectual services. Some analyses also study the data of investment capital including technology transfer (Papanek, 2002).*

If the term technology is used as an attribute of a transfer process, then we can accept the interpretation that it is indeed nothing else but the sum of the technical competences and immaterial knowledge that makes people and organisations capable of:

- perceiving new problems,
- elaborating new conceptions,
- elaborating new solutions,
- creating a new division of labour for people and organisations,

as a result of which a new product and/or service is created. Transfer is passing on knowledge to those who do not have it (national economy, companies, organisations, and individuals). This new, ideal technology transfer also includes innovation, namely the innovation of the new, adapted system, which obviously satisfies a market demand on the side of end users, while it renews several social and economic potentials of the receiving party. Transfer is always implemented in connection with some direct or indirect economic activity. It results in a special, targeted re-distribution of the outputs of the general development process. Today its clearly presentable feature is the effort aimed at imparting systemised knowledge.

Technology transfer and adoption is not simply imitation of a particular idea (knowledge), but adaptation of the original so that it can best suit the typical sociological, political, technological, climatic, economic and educational environment of the receiving party (Figure 2).

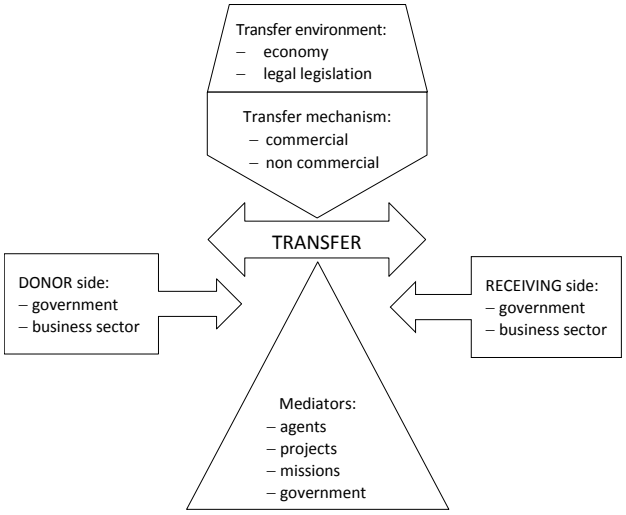

Figure 2. Process and players of technology transfer

Concerning its content, technology transfer also includes the passing on and taking over of free knowledge as well as that owned by the proprietor (confidential or restricted knowledge). Free and thus public information generally ensures access to scientific research results. On the other hand, protected information contains specialist elements of technological knowledge and can be learned by methods controlled by its owners (through patents, licences, etc.). Their extents and proportions are essential for the receiving side, for the decision makers stating their opinions here are frequently faced with tasks that can often hardly be solved. This general problem is referred to in the professional literature as 'transfer paradox' or 'knowledge controller'.

The essence is that "the technology that we want to obtain is basically the information that would be necessary in order to make reasonable decisions on the issues of purchasing or rejecting" (Ambrosio, 1995).

Decisions concerning transfer carry percerptably high risks, particularly when public information is available to a limited extent. This is a frequently repeated basic situation in defence areas and in actions with an economic initiative. It is a well-known fact that innovative companies consciously raise the barriers to entering the market to a high level. One means of doing so is making the information on the novelty confidential, providing legal protection for it and embedding it in a way that allows movement only in a complete form (complete know-how.)

TRANSFER MODELS

The processes of delivery and reception take place in highly different structures according to the intentions, interest enforcement methods and the integration extent of the cooperation of the players involved in the transfer, the donors and the recipients. In the following some models comprising the relations between the players and demonstrating specialist transfer strategies will be presented (Figure 3 and Table 2). Familiarisation with the models is essential because initial transfers are always established in the frameworks of the simpler models, and after a successful cooperation the adoption of more complex forms can begin. The experience gained in the transfers can provide a solid foundation for the conscious development of the embedding potentials of the receiving side, and through that for awakening the force of attraction. This may result in the establishment of cooperation according to more complex models, which may provide a sound framework for more intensive interest enforcement by the receiving party, and for the development of the active position. The models to be presented also represent a historical development series, which may serve as an informative framework for the evaluation of transfers in Hungary in the past ten years. (Szakály 1999)

Five types of models describing the behaviour of the players of the process can be differentiated:

- 'Contact building model':

This highlights the role of bridge-forming institutions ensuring information flow between the sources and the utilisers. These institutions bring about the connection between the demand and supply sides through enabling the potential partners to find each other while orientating them – through offering custom-made programs – in order to find the expedient mechanism.

- 'Diffusion model':

This concentrates on connecting appropriate technologies and diffusion potentials. It finds the players interested in an expedient division of labour for the various periods of research, development and adaptation. Regarding its character, it is also able to embrace more complex mechanisms and makes it possible for the receiving side to utilise its diffusion potentials more efficiently. The contact-building model is first of all useful for starting or occasional transfers, for it ensures cooperation between a small number of players in a transparent system. The diffusion model is the expedient model for mass, fast, spatially widely spread diffusion, where the presence and coordinated cooperation of a great number of players can be ensured on the recipient side.

- 'Problem solving model':

This starts from clarifying the requirements accurately. It looks at the requirements as technology deficiencies to be solved and from this starts a problem solving process. In its framework it comes to the final solution through determining the directions of adaptation from the potential solutions. It is an important element of this logical system that it is not satisfied with a simple examination and qualification of the supply, but

in the course of selection also assesses the adaptation willingness of the donor. This way of thinking does not simplify transfer through a simple putting over of the possible technologies offered, but regards the optimum possible satisfaction of the fundamental demand as its main objective. In formulating the problem and searching for a solution it relies on the active participation of the prospective recipient organisation. Regarding its character, the model exceeds simple commercial transactions and fits supplementary developments ensuring the complete satisfaction of the demand on the recipient side into the system. This latter feature may ensure the development of products and technologies meeting the specialist demand of the local markets.

➢ 'Action-oriented model':

This combines the elements of the process on the basis of economically established utility. This thinking starts from the fact that a decisive moment of active marketing arrives in the lifecycle of every novelty. This occurs under competitive conditions. The innovative diffuser enjoys an advantage in this competition if he can cooperate in the early stages of diffusion with adaptors who are prepared and forced to loyalty by contracts. This adaptation does not mean simply passing over and increasing mass, but improvement matching the local requirements also appears in it. It is not by chance that this model is well-spread in the practice of international companies primarily when the parent company (donor) has to cooperate with a recipient country and target market with a culture very different from the culture of the donor's country (e.g. the European projects of Japanese companies, large US companies in African countries). Each of the companies thinking in terms of a global strategy has applied similar solutions in the early stages of its internationalisation.

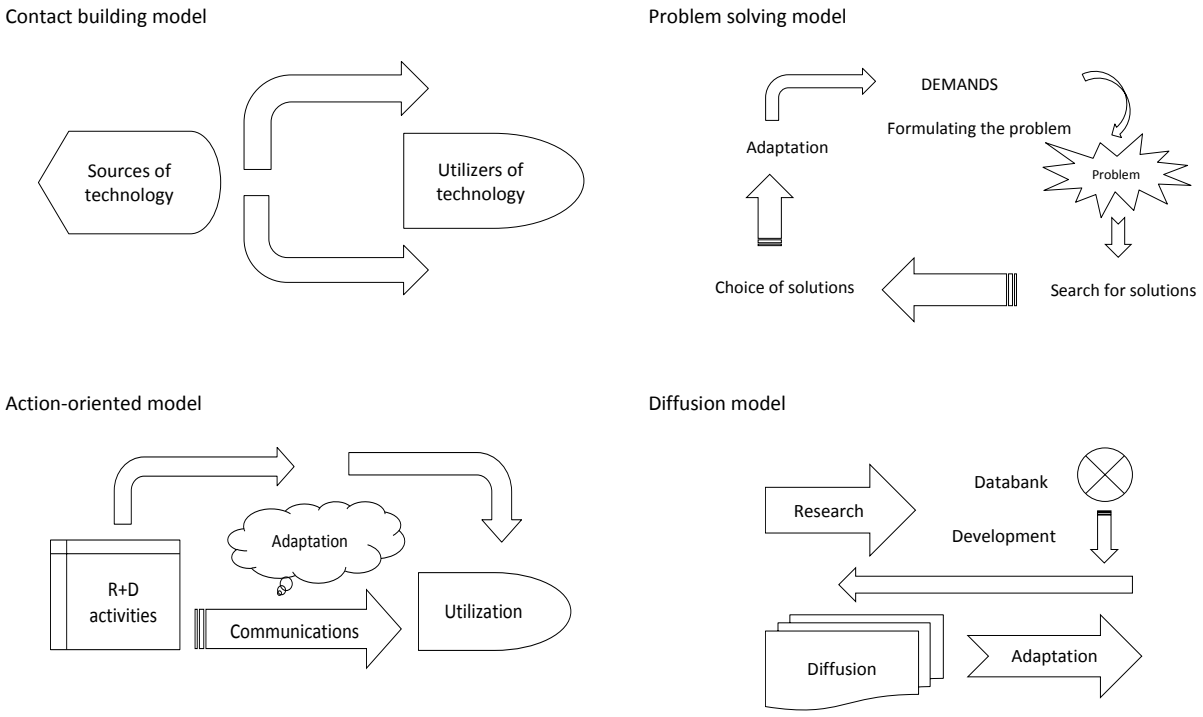

Figure 3. Four technology transfer models

Table 1
Comparison of technology transfer models

Feautre	Contact building model	Diffusion model	Problem solving model	Action oriented model	Model built on knowledge exchange
1. Basic idea of the model	Connecting supply and demand	Creating the conditions for rapid diffusion	Eliminating technology problems	Preparing many channels of utilisation	Exploiting the advanteges of mutual learning
2. Key players	Bridge-forming institutions	Communicators	Requirement-oriented adaptors	Specialist adaptors	Developing recipients
3. Critical process elements	- finding supply-demand - partner mediation	- loading a databank - surveying diffusion potentials - communication	- exploring requirements - formulating problems - searching for solution methods - setting adaptation directions	- predicting utilisation directions - seariching for partners - building adaptation bases	- developing embedding programs - building bases for impovement - analysing knowledge content
4. Typical transfer mechanisms	- building turnkey systems - wedging in technology	- licence trade - embedded technology trade - training programs	- patent transfer - know-how transfer - technology service purchase	- joint ventures - internal techno partition - affiliated companies	- external techno partition - reciprocate and cross licence transfer - joint venture - joint R+D programs

(based on Mogavero and Shane, 1982)

The model based on knowledge exchange and including feedback as well is becoming more and more prevalent (Figure 4).

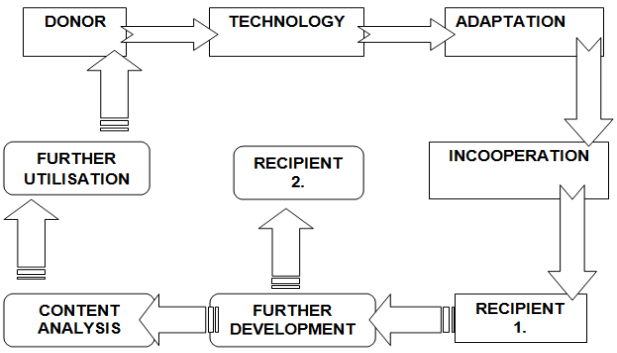

Figure 4. Model built on knowledge exchange

➢ 'Model built on knowledge exchange':

The model is closed in one direction through the donor party monitoring consciously in a pre-planned manner and, in many cases, encouraging and assisting the improvement efforts of the recipient party. In order to compensate for its efforts and expenditure in this, it supports transfer towards a third party as well. In addition, it takes over these development results and after appropriate analysis, builds them into its own new programs.

In the new transfer cycles then it becomes possible to disseminate these novelties globally. This model is clearly observable in transfers within international companies and in projects aimed at the transfer of production means and methods. In the first case the interpersonal relations within the companies and the off-site R&D departments are the driving forces of the process. In the second area it is primarily the customer service organisations that do the necessary information collecting through their monitoring system. The model is actually an efficient means for implementing external and internal 'techno partition', which is nothing but a conscious sharing and moving of knowledge, technology and resources between the appropriate transfer players while maintaining mutual benefits.

TECHNOLOGY TRANSFER AS A MEANS OF CREATING KNOWLEDGE

When creating technical knowledge, the transfer of knowledge can be performed at different levels. One extreme is when the process is simplified to the physical takeover of a machine, equipment, or device, while the other is when technology is learned to be operated with the best degree of efficiency in a process of up to several years (von Hippel, 1988) and in the meantime significant adaptive modifications are implemented on the original system. The events and outputs of this process also depend on the extent the innovation can be regarded as competence destroying or competence enhancing. In such a complex technology transfer program both individual and corporate learning is required. Individual learning begins with collecting experience related to the technology and the understanding of this experience creates the individual knowledge modifying individual abilities and knowledge. Corporate knowledge is the sum of the individual knowledge of persons. Here synergic effects prevail on the one hand, and, on the other, the organisation learns only to the extent that the persons are able to adapt the results of individual learning to corporate routine (elements building the culture).

In the transfer process of complex systems the exchange of knowledge takes place at two levels:

➢ Level one: A knowledge package summed up by the creators of the technology and connected to the foreseen operation. This assists the widening of the knowledge of the recipient directly.

➢ Level two: A knowledge package created at the recipient of the technology in the course of use and adaptation. This may have very intensive creative and innovative elements (reinvention).

The knowledge created by the user also moves in the reverse direction and the information important for the innovator may provide initial impulses for planning the next generation or concrete solutions.

Four levels of the transfer of technology competences can be differentiated:

➢ Level 1: copying the activity;

➢ Level 2: complex adaptation of the activity;

➢ Level 3: transfer of the scientific knowledge behind the technology;

➢ Level 4: interactive cooperation between donor and recipient.

The levels denoted here also mark in general the development stages in the cooperation of the

lasting transfer partners and represent the borders of the frameworks that can be gradually developed.

Limits and characteristics of knowledge transfer:

1. Technical knowledge is highly differentiated and immobile, for it also includes user experience. This experience also carries in itself innovative elements, for taking over a technology involves the incorporation of new inventions.
2. The central task of the potential donors and recipients of advanced technology is to deconstruct the limits of knowledge. This cannot be an isolated activity, but presupposes a specialist cooperation network of the various participants.
3. Mediating institutions are wedged in between the donor and the recipients. The tasks of these institutions are diverse:
   - mediating know-how from the donor to the recipient;
   - creating a back-flow of user knowledge from the recipients to the donor;
   - providing methodologies for accelerating individual learning processes;
   - documenting experience gained in the course of individual learning, formulating it in a way suitable for passing on;
   - methodological support for corporate learning, accelerating it and initiating the changes required for this purpose.
4. The work of mediating institutions is efficient because the benefits resulting from an economy of scale appear in them. Each of the recipients experiences every moment of receiving and incorporation as an individual event. They cannot draw generalisable conclusions from these phenomena that appear to them as individual. The mediator, on the other hand, obtains unique experience and institutionalisable knowledge bases through synthesising the 'individual' phenomena and evaluating the repetitions.

KNOWLEDGE CENTRES – KNOWLEDGE REGIONS

With the exception of the simplest cases, transfer means both imparting and taking over knowledge and experience. Imparting the knowledge accumulated in the course of R&D can only be successful if the previous qualifications of the receiving party make it possible to implement organised transfer of knowledge.

Under the conditions of global competition every company is looking for an innovative receiving medium supporting its activities all over the world. Regions, which develop within countries and across borders partly in a self-organising way and partly as a result of conscious development, in turn look for investors that help in increasing the economic potential of a particular area. Looking at it from an industry policy aspect, a region is nothing else but a specialist, active network of economic players where the participants are implementing a very close and intensive collaboration concentrating on supporting each other. The central core of the network is a production company forming a closed professional culture surrounded by suppliers, institutions providing financial and consulting services, government and private laboratories embodying R&D moments.

In operating the network, a central role is played by regional governance leaders who can deliberately support the learning process, as a result of which regional networking organisations are formed. Technology transfer and the diffusion of information cannot be successful in international and national frameworks if the local channels ensuring final distribution and directing it to the target are not created.

What are called Knowledge Creation Fields (KCF) – or innovative regions – have been organised in order to complete these efforts fully. KCFs have deliberately developed development policies, infrastructure and networks of institutions for supporting diffusion, intensifying international technology transfer and receiving the relevant learning processes. Such Knowledge Creation Fields are today the province Baden-Württenberg in Germany, the Centroregion in Portugal, Toscana in Italy, Steiermark in Austria and the port cities in Ireland.

According to international experience, there are ten significant factors which enable the creation of an innovative region and its intensive connection to international technology transfers:

- Concentration on the requirements of the global market; in choosing the technologies it is not meeting the local requirements that is crucial, but exports.
- Creating the possibility for getting involved in international commerce.
- Efforts at integration through networking with local, national and international partners.
- Intense cooperation, concentration on strengthening own competences. In the framework of project organisations, there is a stronger chance for small and medium-sized enterprises to grow than in isolated activities.
- Systematic strengthening and widening of the knowledge base. Openness to receive novelties.
- Plotting a vision taking into account long-term perspectives and including preparation with foresight.
- Continuous learning both at organisational and at individual levels. Building connections with sources of knowledge.
- Looking for opportunities to get involved in knowledge transfer not only as a recipient, but as a donor as well.
- A supportive local innovation network of institutions.
- Generating the establishment of new enterprises.
- Building monitoring systems to predict changes in the environment.

NEW TENDENCIES IN CHOOSING TRANSFER OBJECTIVES

It is a tendency that can be increasingly observed in the choice of international companies looking for transfer partners that they move towards knowledge centres. The range of comparative advantages has come to include parameters that can be connected to knowledge creation and knowledge diffusion. These have become the aspects for comparing and selecting the recipient side (see Table 3).

In the decade to come, global competition will basically concentrate on renewable human capital and the knowledge resulting from it. Knowledge-based industries will be able to create products and services with the high added value enforced by the competition. These companies will develop their networking systems so that they move towards the knowledge centres that are today only being formed but will intensively multiply later. The reason for this is that this is the way to obtain and take advantage of competitive advantages. Knowledge/Learning Regions will be created where valuable, well-qualified workers (knowledge workers) are concentrated and there is an appropriate, flexible local infrastructure available, partially for their employment and partially for operating the information and communication infrastructure necessary for implementing the tasks.

Knowledge-intensive regions (centres) will be prepared for the 'just-in-time' movement of information, persons and knowledge. National, local and government organisations, global companies and local enterprises will be organised into networks built on mutual benefits that are open and become accessible to everyone. Their joint objective is to create and propagate jointly technologies carrying new, competitive advantages.

Knowledge Centres and Regionalisation

Looking at it from an industry policy aspect, a region is nothing else but a specialist, active network of economic players where the participants are implementing a very close and intensive collaboration concentrating on supporting each other. The central core of the network is a production company forming a closed professional culture surrounded with suppliers, institutions providing financial and consulting services, government and private laboratories embodying R&D moments.

Knowledge centres are a new type of innovation institutions in the economy and society becoming both globalised and localised. As compared to the former types of institutions built on the classic linear innovation model, their structure and operation show typical differences.

Problems of knowledge production, knowledge transfer and knowledge utilisation have come to be in the focal point of the innovation model. Within them, priority issues are as follows:

- opportunities for exploiting knowledge advantages,
- dynamics of equalising knowledge,
- methods of sharing knowledge,
- supporting learning processes.

New tasks of innovation institutions, in line with the above:

- creating and updating the knowledge base,

- ensuring intensive and efficient possibilities for using the knowledge base,
- ensuring the accessibility of the knowledge base.

Main areas of sharing the knowledge:

- Sharing between the players in the creation of knowledge (problem of comprehension and codification).
- Sharing between the producers and users of knowledge (problem of transfer).
- Ensuring multiple use of the knowledge (learning problem).
- Ensuring the spatial distribution of knowledge (problem of centre –decentre).
- Ensuring the even distribution of knowledge (diffusion problem).

Accordingly, the institutions of knowledge distribution are organisations built on high-level information technology, or their formal and virtual networks. Examples include the following organisations developing both from government and private sources:

- service providers offering information technology,
- service providers offering network system services,
- service providers offering network content services,
- service providers operating network search systems,
- service providers offering regular information selections,
- service providers supporting e-mail and communication groups.

Knowledge centres exert their influence in connection with the innovation basic institutions of the surrounding environment and influence their further development in deviating from the traditional.

The structures of regional innovation systems and the networking possibilities of the regional knowledge centres are thus closely interrelated with each other. Knowledge centres play an important role in organising, establishing and operating the networking systems covering the world (cooperation networks, strategic alliances, service providing networks, R&D networks, etc.).

Networking can be regarded as a new form of development. A crucial moment in the establishment of networks is the widening of market competition, where the competition between industries and regions also becomes intensified. In this situation, medium-sized companies, international companies, government and private research and development laboratories are all forced to apply cooperative strategies (what is called pre-competitive cooperation). Here government-level cooperation projects have resulted in a cohesion effect in addition to private initiatives.

Today cooperation exceeds the moments of R&D and production–marketing, and is increasingly widened with project-specific phases of training – as well as advanced training, which induces intentions of cooperation in an increasingly wider range of professionals. This enlargement tendency also indicates that the practice is beginning to exceed the transfer mechanisms built on the simple linear innovation model and the networks are aiming at inducing direct synergic effects.

Altogether knowledge centres with various orientations generate favourable effects in the following fields (in general according to stressed priorities):

a) Concentrating intellectual capital:
   The intellectual capital concentration is created in space and time, which recreates the information-interest relations between the activities of the innovation process that often break away from each other.
   Knowledge centres reduce in a proven way the uncertainties and risks of R&D. They provide room for individual initiatives to develop that would be rejected in a different medium. They develop a partnership or alliance relation between different professional cultures that do not frequently meet.
b) Concentrating relevant information:
   By providing the intellectual and infrastructural framework of open information flow, knowledge centres find connections between the separated participants of the innovation process. In many cases they take over the costly, time-consuming and knowledge-intensive tasks of selection through their specialists, thus offering a fast and secure way of passing knowledge to their 'lay' partner.
c) Concentrating equipment:
   They create an up-to-date technical, informatics and service infrastructure also for those companies who would otherwise have to go without due to lack of investment funds.
d) Concentrating services:
   The range of services may extend from a technical character to complex management consulting. They offer alternative opportunities for use. These provide a safe professional background primarily for beginning and small enterprises.
e) Providing opportunities for supplying industry activities:
   Beyond R&D moments, they ensure the starting conditions for the fast start-up of production.
f) Creating a favourable atmosphere for personal contact building:
   They can maintain the effect of direct personal contacts, thus improving the psychic climate.
g) Increasing economic efficiency:
   Major elements of the improvement of economic efficiency:
   - reducing the critical R&D and investment capital requirements,
   - better utilisation of capacity due to the joint use of equipment,
   - fast running-in,
   - financial benefits,
   - lower specific expenditure requirement for joint services.
h) Stimulating the entrepreneurial spirit:
   Favourable conditions and successful examples that can be presented assist in bolder entrepreneurial decision making. The benefits that can be offered can be mitigated by the starting barriers.
i) Improving the employment situation:
   Wide-reaching demand for labour appears primarily in the final production stages. The quality factor that appears in the regional binding of the 'qualified elite' is also significant.
j) Increasing the attraction of the regions:
   Knowledge centres attract enterprises looking for new locations through the secondary networks arising in the surroundings of the institutions.

FUNCTIONS OF THE KNOWLEDGE CENTRE

In establishing knowledge centres, conscious efforts should be made to develop a varied and easy-to-diversify activity structure and infrastructure, mixing the advantages and service structures of science parks, technology transfer institutions,

technopoles, competence (excellence) centres, incubator houses and industrial parks.

The KNOWLEDGE CENTRE is

- ➢ an explorer of the available local and the accessible global knowledge,
- ➢ an arranging, frameworking and storing agent of the potential knowledge,
- ➢ a mediator of demand for knowledge and a generator of demand for knowledge,
- ➢ a leading adaptor and innovator, an active player in venture capital mediation,
- ➢ a builder of connections between large and SME-level economic players,
- ➢ an organiser of the innovation network and supporter of cluster initiatives as the economic and public administration centre of the region.

The main mission of the knowledge centre:

1. The KNOWLEDGE CENTRE as the cradle of innovation: R&D activities, creating innovations, creating knowledge:
   - ensuring the accessibility of innovative technologies
   - active transfer partnership.
2. The KNOWLEDGE CENTRE as the driving force of diffusion, a basis of sharing knowledge: diffusion, reception and redistribution of knowledge, knowledge flow:
   - mediating information,
   - mediating partners.
3. The KNOWLEDGE CENTRE as a cluster centre: collector of specialists, a polarisation centre of expertise:
   - new critical resource masses and personnel conditions,
   - providing technical and technology services,
   - providing infrastructure,
   - providing incubation services.
4. The KNOWLEDGE CENTRE as generator and mentor of regional development:
   - mixing global and local knowledge,
   - ensuring knowledge flow in regional dimensions,
   - maintaining an international relation network.
5. The KNOWLEDGE CENTRE as a regional technical service providing centre:
   As compared to those of large companies, it is a differentiating feature of the innovation activities of SMEs that they are built on using continuous external expert involvement and services in all its stages. Typical areas are:
   - technical services (measurements, validation, experiments, leasing laboratory equipment, etc.),
   - expert services (interpreting, document translation, business administration services, business and legal counselling),
   - business organisation counselling (marketing, technology, production organising),
   - technology services (leasing labour, renting workshop space, rapid prototyping services),
   - logistic services, R&D services,
   - technology transfer services (partner search, writing applications for funding, licence trade, capital organisation, organising venture companies).

Table 3
From a mass production region to a knowledge region

Aspects	Mass production region	Knowledge region
- Sources of copetitiveness	Sources of comparative advanteges: - availability of natural resources - relativey inexpensive labour	Sources of renewable advantages: - creative-innovative medium - continous development
- Products-services	Mass production: - cost advanteges - division between R+D and production	Knowledge-based production and services: - high added value - combination of production and innovation
- Production infrastructure	Centralised plant with a local range of suppliers, and reduced task division	Innovation chain built on supplier network
- Human resources	- low qualifications, low wages - narrow training - target-oriented trainings	- knowledge workers - life-long learning - induced corporate learning projects
- Technical backgroung	Strong reliance on local infrastructures	Global communication an IT infrastructure
- Corporate managemnt system	- division of authority ensuring the dominance of the parent company - top-down control	- mutually beneficial relations - networking organisations

SUMMARY

Technology transfer is implemented in various fields of production and services through the imparting and takeover of innovations and development results.

Technology transfer makes it possible for:

- ➢ the receiver to start using the R&D results of others fast,
- ➢ the donor, who has taken on the risky investments of R&D requiring large expenditures, to share the burden with others through the rapid economic exploitation of the results.

The technology gap and the resulting asymmetry (difference in knowledge) is the starting impulse and driving force of technology transfer. The reason for this is that scientific and technical resources show a highly concentrated distribution in terms of the world or individual countries. The imbalance activates and keeps in action the potential players who are trying to solve the imbalance. It is technology transfer through which – in the various moments of the innovation processes – the division of labour is also achieved, both on a sector scale and at the international level.

Acknowledgement

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Challenges of Responsible Supply Chain Management

KRISZTINA SZEGEDI, Ph.D.
ASSOCIATE PROFESSOR

e-mail: vgtkrisz@uni-miskolc.hu

KÁROLY NORBERT KEREKES
SUPPLIER QUALITY MANAGER

e-mail: karoly.kerekes@de.bosch.com

SUMMARY

Many firms are increasing their focus on their Supply Chain as a strategic factor. This focus has primarily emphasized cost reducing and risk minimizing, although some proactive companies began to manage their supply chain in a responsible way several years ago. This paper provides a comprehensive review of the part of the Corporate Social Responsibility literature that introduces responsibility to the field of supply chain management; furthermore, it processes public documents and Internet sites of major global firms suggesting a framework to implement RSCM practices. The aim of this article is the theoretical and practical foundation of potential research in the field of Responsible Supply Chain Management.
Keywords: business ethics, corporate ethics, corporate social responsibility (CSR), responsible supply chain management (RSCM), Sustainable Supply Chain management (SSCM).
Journal of Economic Literature (JEL) code: M14

INTRODUCTION

In recent years, companies have faced increasing challenges in their ability to manage their supply chains. Long and complex supply chains are significant parts of our global business life as a result of vertical disintegration, product proliferation, focus on core activities, multichannel set ups and global sourcing (Balasubramanian and Tewary, 2005). According to an executive, "The purchasing power of a corporation can become a unique driver for bringing about positive change in society. Companies must use this power to achieve a purpose and make their supply chain a vehicle for inclusive growth" (United Nations Global Compact, 2010, p. 15). In order to achieve this purpose companies need to manage their supply chains in a responsible way. The first part of the article introduces Supply Chain Management, Responsible Supply Chain Management and related terms.

SUPPLY CHAIN MANAGEMENT

According to Handfield and Nichols (1999, p. 2) "the supply chain encompasses all activities associated with the flow and transformation of goods from raw materials' stage (extraction) through to the end user, as well as the associated information flows". Mentzer et al. (2001, p. 4) defined supply chain as "a set of three or more entities (organisations or individuals) directly involved in the upstream and downstream flows of products, services, finances, and / or information from a source to a customer".

The term Supply Chain Management (SCM) appeared in the beginning of 1980s and was described from the theoretical standpoint a decade later (Cooper et al., 1997). Performance and competitiveness are key factors in supply chain management. This means the integration of the supply chain activities to achieve a sustainable competitive advantage (Handfield and Nichols, 1999). It can be defined as "the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole" (Mentzer et al. 2001, p. 18).

In recent years, several trends have been observed in relation to the Supply Chain Management. Firstly, competition has become a high dimension; it evolved to an inter-supply-chain level so SCM has have more and more importance and ihas become a central part of the strategic management process (Hult et al., 2007). Secondly, it has become clear that effective supply chain management provides the possibility to deliver increased revenue (extended markets and accelerated product/ service innovation), lower costs (lower cost for materials, production, inventory, transportation, or taxes), reduced assets (leveraging outsourcing or improved asset utilization), but successful supply chain strategies require more than the traditional cost-reducing focus (Linton et al., 2007). Thirdly, more and more scholars and practitioners have thought that Supply Chain Management has to integrate responsibility into its process and has to relate to sustainability management (e.g. Linton et al., 2007; Corbett, 2009; Mueller et al., 2009; Gold et al., 2010; Closs et al., 2011).

RESPONSIBLE SUPPLY CHAIN MANAGEMENT AS A KEY COMPONENT OF CORPORATE SOCIAL RESPONSIBILITY

Responsible Supply Chain Management (RSCM) embodies an interaction between Corporate Social Responsibility (CSR) and Supply Chain Management (SCM). A practical guide for continuous improvement of Supply Chain Sustainability emphasies that "more and more companies are extending their commitment to responsible business practices to their value chains, from subsidiaries to suppliers" and introduces supply chain sustainability as a key component of corporate responsibility (United Nations Global Compact, 2010, p. 2).

Several articles have been written over the years that examine various aspects of Responsible Supply Chain Management. There are different terms regarding this issue with similar content. The most common expressions are Responsible

Supply Chain Management and Sustainable Supply Chain Management. In literature there is no one univocal definition of Responsible Supply Chain Management. The articles show the same tendency in the field of Supply Chain Management, like articles which deals generally with Corporate Social Responsibility and Sustainable Development.

Both terms have a long history in the literature. The term sustainable development entered onto the scientific and business agenda in 1987 when the the UN Report "Our Common Future" (the Brundtland report) defined sustainable development (SD) as "Development that meets the needs of current generations without compromising the ability of future generations to meet their needs and aspirations" (WCED, 1987, p. 43).

The long history of Corporate Social Responsibility began in the 1950s, and expanded in the next decades (Carroll, 1999). Carroll's well-known definition of CSR is "The social responsibility of business encompasses the economic, legal, ethical and discretionary expectations that a society has of organizations at a given point in time." (Carroll, 1979, p. 500). In the last years the definition of CSR has become broader. CSR is "the responsibility of a company for the totality of its impact" (Chandler, 2001). According to a brief definition, "CSR is about treating all stakeholders responsibly or ethically" (Hopkins, 2011). The European Commission defined CSR as "the responsibility of enterprises for their impacts on society". (European Commission, 2011, p. 6).

Steurer et al. (2005) made clear the connections between sustainable development, corporate sustainability and corporate social responsibility. These are closely connected, but on different levels of specification. Sustainable Development can be regarded as the normative societal concept behind CS and CSR, in which Corporate Sustainability is the corporate concept and CSR as the management approach (Steurer et al., 2005).

DEFINITION OF RESPONSIBLE SUPPLY CHAIN MANAGEMENT (RSCM)

Responsible Supply Chain Management (RSCM) emerged in the 1990s as a corporate response to human rights violations (e.g. sweat shops, child labour, forced labour, no living wage, discrimination and safety and health neglect) appearing in the supply chain (GLOBAL CSR and Copenhagen Business School, 2011).

According to the International Chamber of Commerce (2007, p. 2), "Supply chain responsibility, also referred to as responsible sourcing, can be broadly defined as a voluntary commitment by companies to manage their relationships with suppliers in a responsible way. As a result of their purchasing activities, companies may have some opportunities to influence constructively their suppliers' social and environmental performance. This can be done using several incentives, including information and training, as well as audits of suppliers' practices. Whatever mechanism is used, the most effective way to achieve sustained improvement over time is through the development of a long-term collaborative relation between corporate buyers and their suppliers, through which suppliers can internalize change by participating in the shaping of social and environmental performance objectives, based on their own perception of their business capacity and needs."

The United Nations Global Compact (2010, p. 7) refers to supply chain sustainability and defines this as "the management of environmental, social and economic impacts and the encouragement of good governance practices, throughout the lifecycles of goods and services. The objective of supply chain sustainability is to create, protect and grow long-term environmental, social and economic value for all stakeholders involved in bringing products and serves to markets."

These definitions are quite general and leave room for many different approaches. Van Opijnen and Oldenziel (2011) emphasize the importance of the volunteering and the cooperation between companies and their suppliers and other stakeholders in the well-known definitions. In this paper we consider Responsible Supply Chain Management and Sustainable Supply Chain Management as synonymous terms.

ADVANTAGES OF RESPONSIBLE SUPPLY CHAIN MANAGEMENT

Based on articles published in the field of Responsible Supply Chain Management (Worthington et al. 2008; Mueller et al., 2009; United Nations Global Compact, 2010; Closs et al., 2011) we summarize its main advantages:

- Create sustainable products - Meeting evolving customer and business partner requirements and innovating for a changing market.
- Increase legitimacy among stakeholders – Implementing CSR standard in supply chains has a positive impact on ensuring legitimacy among supply chain partners as well as towards other stakeholders.
- Protect the company's reputation and brand value - Reputation is a very sensitive asset of companies. Reputation problems can cause competitive disadvantages, as has happened in the past in the case of some companies.
- Minimize risks - RSCM provides the possibility to avoid social and environmental problems in pre-stages, bringing new criteria into supplier evaluation and monitoring.
- Business benefits - In the supply chain system responsibility can increase profit through significant operational efficiency gains, reducing global waste and the cost of material inputs, energy, and transportation.
- Enhancement of people and their communities - Commitment to acceptable global working conditions and compliance with regulatory requirements.
- Minimize reliance on scarce environmental resources - While minimizing waste of water or raw materials, ensuring long-term global viability.
- Improve supplier performance - This helps to build increased commitment and trust in the buyer/supplier relationship that can lead to increased labor productivity or creating efficiency across supply chains, or directly to improved levels of supplier performance.
- Creating better conditions for small and medium-sized enterprises and firms in developing countries on key social and environmental issues.
- Competitive advantage - If RSCM is not simply window dressing but can provide the organization with both tangible and direct benefits, which may ultimately lead to a competitive advantage for their firms.
- Positive environmental impact - Companies protect the environment.
- Positive social impact - Companies can promote human rights, improve labor conditions and support ethical business conduct.
- Efficiency and profitability over the long term - Focusing on economic, social and environmental performance (profit, people, and planet) will lead to improved efficiency and profitability over the long term.
- Support further economic development - Economic development has secondary impacts on socioeconomic

development and the environment and is therefore a critically important aspect of sustainability.

CHALLENGES OF RESPONSIBLE SUPPLY CHAIN MANAGEMENT

Linton et al. (2007) call attention to the fact that the interaction between responsibility and the supply chain is the critical next step in the development of Corporate Social Responsibility or Corporate Sustainability. Supply Chain Management must integrate special issues and CSR or CR also must integrate new areas. The open issues are fundamentally interdisciplinary in nature, which makes them real challenges.

Companies face many challenges when trying to manage social and environmental issues in the supply chain. These include, for example, a lack of traceability of raw materials and products in the supply chain, the large number of supply chains a company may be part of, and the lack of legislation or enforcement of legislation in some of the supplier countries (International Chamber of Commerce, 2007).

Authors emphasise several problems and challenges of the RSCM (Van Opijnen, M. and Oldenziel, J. , 2011; GLOBAL CSR and Copenhagen Business School (2011 p. 10)) :

- As each supply chain has its own specific characteristics, it is difficult to find a general approach.
- Successful implementation of sustainable practices in supply chains depends on different actors. Many companies have thousands of suppliers. Rapid changes of suppliers erode the effectiveness of certification systems. There is no unambiguous definition of the 'scope of responsibility'.
- It is difficult to provide transparency with regard to the operational practices of all suppliers. Companies publish their sustainability information in many ways, including sustainability reporting, provision of information on websites, and disclosure through labelling and certification.
- Accountancy firms may not have the necessary competences to detect all matters related to working conditions. The audit methodologies can also contribute to a failure to determine the true working conditions. Monitoring and auditing have a relatively minor actual impact on or benefit to workers and other stakeholders.
- Mainstream RSCM Generation 1.0 approaches lead to "code mania."
- Traditional corporate sourcing strategies and purchasing practices are the primary impediments to ensuring adequate standards with suppliers.
- Most Responsible Supply Chain Management approaches limit themselves to a few basic human rights.
- SMEs are excluded from global supply chains as a result of RSCM practices.

Closs et al. (2011) described three leadership categories of implementing sustainability: Reactor, Contributor and Innovator. The Reactor's investment decisions are primarily driven by short-term goals. These firms comply with laws and regulations, but rarely will behave proactively. Contributors apply more proactive initiatives; they focus on their own supply chain and often rely on industry or cross-industry sustainability benchmarking to identify potential initiatives for their organization. Innovator firms establish sustainability as a strategic priority and often seek best practice performance; their behavior is creative, proactive and cooperative.

BUSINESS INTEGRATION OF CSR

The main challenge of CSR is its integration into business practice. The second part of the article introduces some possible practical approaches and methods of Responsible Supply Chain Management. According to an empirical study of Baldwin and Strandberg (2010) from Canadian Business for Social Responsibility about best CSR practices at MNCs, when companies decide to integrate CSR into their daily business the approach normally follows the upcoming sequence:

Phase 1 - Forming

1. Identification of the desired CSR approach and its integration into the company's mission and values
2. Management Commitment towards CSR (an agreement on CSR definition, business value of CSR and CSR policy)
3. Assignment of a committee with CSR responsibility
4. Education of the board on CSR risks and opportunities
5. Involvement of CSR issues into management decisions
6. Sensitization of staff towards enterprise risk management
7. Commitment on CSR goals, incorporation of objectives and targets into the business plan and strategy (including social and environmental considerations in risk identification)
8. CSR risk management and monitoring
9. CSR factors in major business decisions (risk, opportunities, and impacts of acquisitions, mergers, business partnerships and divestitures)
10. Regular review and disclosure of CSR performance to stakeholders
11. Review and approval of CSR reports, ensuring that CSR disclosure covers material risks and complies with CSR reporting standards.

Phase 2 - Sophistication

1. Ensure effective CSR management systems (ensure that policies, processes and data systems exist to support CSR and that CSR guides decisions across business units and regions.
2. Incorporate CSR into the company Code of Conduct/Ethics to provide overarching guidance on the significance and role of CSR as a factor in decision-making.
3. Provide formal mechanisms for stakeholder input
4. Incorporate CSR factors into director and CEO recruitment (e.g. director diversity, values alignment and knowledge of or expertise in CSR issues/management; when recruiting a new CEO, ensure candidates are assessed for CSR competency and values alignment)
5. Reward executives for CSR performance (incorporate non-financial objectives into executive compensation. Ensure that the company's performance management systems reward CSR performance)
6. Review the board's own operations to identify and implement measures to align board operations with CSR (e.g. emissions from board travel, green meeting procedures, green accommodations, sustainable food services, etc.)
7. Ensure continuous improvement of CSR Governance practices
8. Incorporate CSR questions into the annual board evaluation. Conduct a peer review to identify emergent CSR governance considerations and keep abreast of best practice.

THE WIDESPREAD FRAMEWORKS: UN GLOBAL COMPACT AND GLOBAL REPORTING INITIATIVE

UN Global Compact is the world's greatest voluntary corporate responsibility initiative, which provides corporate principles based on categories including human rights, labor, environment, and anti-corruption. According to its website this initiative has over 8,700 corporate participants and other stakeholders from over 130 countries.

Table 1
The Ten Principles (United Nations, 2012)

Field	Principles
Human Rights	Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights. Principle 2: Businesses should make sure that they are not complicit in human rights abuses.
Labour Standards	Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining; Principle 4: Businesses should uphold the elimination of all forms of forced and compulsory labour; Principle 5: Businesses should uphold the effective abolition of child labour; and Principle 6: Businesses should uphold the elimination of discrimination in respect of employment and occupation.
Environment	Principle 7: Businesses should support a precautionary approach to environmental challenges; Principle 8: Businesses should undertake initiatives to promote greater environmental responsibility; and Principle 9: Businesses should encourage the development and diffusion of environmentally friendly technologies.
Anti-Corruption	Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

Reporting leads to improved sustainable development outcomes because it allows organizations to measure, track, and improve their performance on specific issues. "The Global Reporting Initiative is the is the most widely used standardized sustainability reporting framework for performance on human rights, labor, environmental, anti-corruption, and other corporate citizenship issues in the world. One of its main goals is to support transparency of supply chains of large multinational buyers". The main parts of its system are as follows (GRI, 2011):

Part 1 - Introduction

Following the framework of this initiative, companies first make a written commitment to integrate their sustainability goals into their vision and strategy. They clearly define key CSR impacts, risks and opportunities. Describe organizational profile, markets served (including geographic breakdown, sectors served, and types of customers/beneficiaries), scale of the reporting organization, etc.

Part 2 - Governance

This part contains the performance of the companies at several fields like economic, environmental, Labor Practices and Decent Work, Human Rights, Society and Product Responsibility.

Performance: Economic

- Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.
- Financial implications and other risks and opportunities for the organization's activities due to climate change. Coverage of the organization's defined benefit plan obligations.
- Policy, practices, and proportion of spending on locally based suppliers at significant locations of operation. Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement.
- Understanding and describing significant indirect economic impacts, including the extent of impacts.

Performance: Environmental

- Materials used by weight or volume. Percentage of materials used that are recycled input materials. Direct energy consumption by primary energy source. Indirect energy consumption by primary source. Energy saved due to conservation and efficiency improvements.
- Initiatives to provide energy-efficient or renewable energy-based products and services, and reductions in energy requirements as a result of these initiatives. Initiatives to reduce indirect energy consumption and reductions achieved.
- Total water withdrawal by source. Water sources significantly affected by withdrawal of water. Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas. Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas. Habitats protected or restored. Strategies, current actions, and future plans for managing impacts on biodiversity. Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk. Total direct and indirect greenhouse gas emissions by weight. Other relevant indirect greenhouse gas emissions by weight. Initiatives to reduce greenhouse gas emissions and reductions achieved. Emissions of ozone-depleting substances by weight. NO_x, SO_x, and other significant air emissions by type and weight.
- Total water discharge by quality and destination. Total weight of waste by type and disposal method Total number and volume of significant spills. Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation. Percentage of products sold and their packaging materials that are reclaimed by category. Significant environmental impacts of transporting products and other goods and materials used for the organization's operations and transporting members of the workforce.

Performance: Labor Practices and Decent Work

- Total workforce by employment type, employment contract, and region. Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region. Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases. Average hours of training per year per employee by employee category.

- Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.
- Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership, and other indicators of diversity.

Performance: Human Rights

- Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken. Total number of incidents of discrimination and actions taken.
- Operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk, and actions taken to support these rights.
- Operations identified as having significant risk for incidents of child labor, and measures taken to contribute to the elimination of child labor.
- Operations identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of forced or compulsory labor.

Performance: Society

- Nature, scope, and effectiveness of any programs and practices that assess and manage the impacts of operations on communities, including entering, operating, and exiting.
- Percentage of employees trained in organization's anticorruption policies and procedures. Actions taken in response to incidents of corruption.
- Public policy positions and participation in public policy development and lobbying.
- Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country.

Performance: Product Responsibility

- Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures. Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements
- Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship.

Application Levels – A, B and C – define the parts of the GRI Guidelines that have been covered in a sustainability report. They are intended to motivate reporters to enhance the quality and transparency of their reporting over time. Application Levels provide a system to objectively confirm reporters' use of GRI's Guidelines.

ELEMENTS OF RESPONSIBLE SUPPLY CHAIN MANAGEMENT

The sustainability benchmarking provides practical information regarding Responsible Supply Chain Management. SAM Corporate Sustainability Assessment compares corporate sustainability performance of more than 2,000 companies. The Dow Jones Sustainability World Index (DJSI) was launched in 1999 as the first global sustainability benchmark and provides an effective engagement platform for companies who want to adopt sustainable best practices. As of 2012 SAM offers detailed reports of the so-called 19 supersector leaders (SAM, 2012).

According to these reports ten of the supersector leaders have an excellent performance in Supply Chain Management as well. Table 2 shows the score of the supersector leaders, DJSI average scores and the score of the best company within sectors. The reports contain several best practices in Supply Chain Management as well. Unilever extended sustainability to its raw material sourcing practices, and transparency along the whole supply chain plays an important role. Repsol introduced a comprehensive supply management process to track its suppliers' performance. The supply chain management of Koninklijke Philips Electronics N.V. fully integrates Environmental, Social and Corporate Governance criteria to identify key supply chain risks and the company collaborates with suppliers to resolve the problems. Supply Chain Management of Siemens focuses on the potential human rights abuses among further factors (SAM, 2012).

Based on the websites of supersector leaders we have collected the main elements of Responsible Supply Chain Management (Table 3). Most of the companies set special standards for their suppliers in a form of Code of Conduct, sustainability standard or supplier declaration. Companies offer workshops and training courses for their suppliers in order to make them familiar with the required norms. Further common elements of the Responsible Supply Chain Management are a supplier self assessment and supplier audit, which can be internal or external. Some of the studied companies have dialogues with their suppliers and implement special awards to improve the CSR performance of their suppliers.

GOOD PRACTICES

According to CSR Europe the companies of HP, L'Oreal, Titan and Volkswagen play a leading role in the European CSR Laboratory on Responsible Supply Chain Management. The Portal for Responsible Supply Chain Management contains information for practitioners to further develop their own approach to Corporate Social Responsibility in the Supply Chain (CSR Europe, 2008). Based on GRI reports of these companies we have summarized some important characteristics of their supply chain management.

Hewlett-Packard Company (HP, 2011)

The company is an American multinational hardware and software corporation headquartered in Palo Alto, California, United States. It provides products, technologies, software, solutions and services to consumers, small and medium-sized businesses (SMBs) and large enterprises, including customers in the government, health and education sectors.

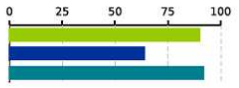
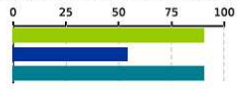
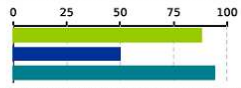
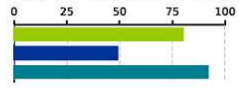
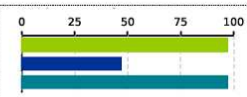
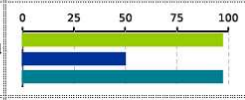
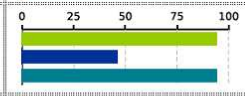
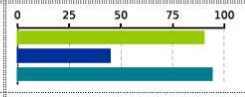
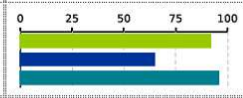
Tools in use are external and internal audits. HP makes sure third-party auditors regularly verify its global Greenhouse gas (GHG) emissions measurements and annual reporting under the GHG measurement and reporting protocols of the World Resources Institute and World Economic Forum. Further product reuse and recycling is regularly monitored by third-party auditing firms, and 14 reuse and 39 recycling vendor facilities were assessed in 24 countries in 2011. In addition, HP's supply chain responsibility ensures that external audit firms conduct necessary verification of suppliers' self assessments. On the field of HSE the company is regularly assessed by independent accredited auditors according to ISO 14001 and Occupational Health and Safety Assessment Series (OHSAS) 18001.

As a self-regulatory function qualified HP professionals conduct internal audits of the environmental, health, and safety

management systems at its operation sites, and they report the results to senior management. Compliance and ethics, privacy, and environment, health, and safety may be evaluated, depending on the nature of the operation being audited.

HP is a signatory to the United Nations Global Compact, a set of voluntary commitments for companies to improve human rights, labor conditions, the environment, and anti-corruption controls. HP implemented Global Reporting Initiative to enhance the quality and transparency of their reporting on CSR topics. HP self-declares this report to GRI Application Level B.

Table 2
Supply Chain Management Scores of Supersector Leaders

Name	Supersector	Country	Supply Chain Management (Score of the company / DJSI sector avarage score / Best company within sector)
Bayerische Motoren Werke AG (BMW)	Automobiles & Parts	Germany	
Australia & New Zealand Banking Group Ltd	Banks	Australia	n.a.
UPM-Kymmene OYJ	Basic Resources	Finland	
Akzo Nobel NV	Chemicals	Netherlands	
GS Engineering & Construction Corp	Construction & Materials	South Korea	
Itausa - Investimentos Itau SA	Financial Services	Brazil	n.a.
Unilever NV	Food & Baverage	Netherlands	
Roche Holding AG	Health Care	Switzerland	
Siemens AG	Industrial Goods and Services	Germany	
Swiss Re	Insurance	Switzerland	n.a.
Telenet Group Holding NV	Media	Belgium	n.a.
Repsol SA	Oil & Gas	Spain	n.a.
Koninklijke Philips Electronics N.V.	Personal & Household	Netherlands	
GPT Group	Real Estate	Australia	n.a.
Lotte Shopping Co. Ltd.	Retail	South Korea	
Alcatel-Lucent SA	Technology	France	n.a.
KT Corp.	Telecommunications	South Korea	
Air France-KLM	Travel & Leisure	France	n.a.
Iberdrola SA	Utilities	Spain	n.a.

Source: Dow Jones Sustainability Indexes, Supersector Leaders 2012

Table 3.
Elements of Responsible Supply Chain Management

Company	BMW	UPM-Kymmene OYJ	Akzo Nobel NV	GS Engineering & Construction Corp	Unilever NV	Roche Holding AG	Siemens AG	Koninklijke Philips Electronics N.V.
Standard	Supplier Sustainability Standards	Supplier Code	Vendor Policy Declaration	n.a.	Supplier Code Standards guide for supply partners	Supplier Code of Conduct	Suppliers Code of Conduct	Supply Management Code of Ethics, Supplier Sustainability Declaration,
Training	Workshop, training, best practice case studies	n.a.	n.a.	Great Partnership Package	Training,	Workshop, training	Web Based Training for Suppliers	Training a capability building
Risk monitoring	Sustainability Risk Filter	n.a.	n.a.	Supplier Risk Management	Risk assessment	n.a.	n.a.	Risk assessment
Supplier Self-assessment	Supplier sustainability self-assessment questionnaire	Supplier Code Questionnaire	Vendor Checklist	n.a.	Self-assessments	n.a.	Corporate Responsibility Self Assessment	Self assessment
Supplier audit	Sustainability audit	n.a.	Supplier support visits	Supplier evaluation	Audit within Supplier Ethical Data Exchange (SEDEX)	Audit	External Sustainability Audits, Incident Driven Inspections, Supplier Quality Audit - CR module	External Audit
Other	Ideas competition for sustainability solutions, Supplier Innovation Award in the category "Sustainability".	n.a.	Key Supplier Management Program	Enhanced Online Communication	n.a.	n.a.	Dialog, Program Towards a green supply chain	Constructive dialogue, Electronics Industry Citizenship Coalition , Sustainable Trade Initiative IDH

Titan (WBCSD Cement Sustainability Initiative, 2011)

Titan Cement Company S.A. is one of the world's eight largest cement producing companies, based in the Ano Patissia suburb of Athens, Greece. In 1999 a group of leading cement companies came together and created the Cement Sustainability Initiative (CSI), under the auspices of the World Business Council for Sustainable Development (WBCSD). This is a voluntary, continuous improvement approach focused on making the cement industry and business in general, more sustainable.

The main issues of the initiative are Climate Protection, Fuels and Materials, Health & Safety, Emissions Reduction, Biodiversity, Sustainability with concrete KPIs: The Getting the Numbers Right (GNR) system is a sector-wide global information database that provides accurate, verified data on the cement industry's CO_2 emissions and energy performance like Specific heat consumption of clinker production; Alternative Fuel Rate; Biomass Fuel Rate; Alternative Raw Materials Rate; and Clinker/Cement Ratio.

Volkswagen (Volkswagen, 2011)

Volkswagen (abbreviated VW) is a German automobile manufacturer and part of the Volkswagen Group. The Volkswagen Group provides an update on the sustainability of the business once a year in the form of a Group sustainability report. This report outlines key strategic principles and presents examples of specific activities performed by the individual Group brands with regard to sustainability. When it comes to creating the report, they draw guidance from the internationally recognized G3 sustainability reporting guidelines provided by the Global Reporting Initiative (GRI). Certification: Level A+.

Aside from financial indicators, the following social and environmental indicators are highlighted in VW's Sustainability Report: social - female employees in the Volkswagen Group, participation ratio in employee opinion survey, absenteeism, fluctuation rate, number of accidents; environmental - energy consumption, CO_2, NO_x, SO_2 and VOC emissions, freshwater and wastewater usage, chemical oxygen demand, waste in tonnes and expenditure on environmental protection in million euros. The overall GRI certification of Volkswagen Group is Level A+.

L'Oréal (L'Oréal, 2011)

The L'Oreal Group is the world's largest cosmetics and beauty company. With its registered office in Paris and head office in the Paris suburb of Clichy, Hauts-de-Seine, France, it has developed activities in the field of cosmetics. Concentrating on hair color, skin care, sun protection, make-up, perfumes and hair care, the company is active in the dermatological, tissue engineering and pharmaceutical fields and is the top nanotechnology patent-holder in the United States. L'Oréal makes use of the structured GRI. The company's certification is Level B.

By taking a proactive role to collect, analyze, and report those steps taken by the organization to reduce potential business risks, companies can remain in control of the message they want delivered to their shareholders. Public pressure has proven to be a successful method for promoting transparency (behavior) and disclosure of greenhouse gas emissions and social responsibilities. As well as helping organizations manage their impacts, sustainability reporting promotes transparency and accountability.

CONCLUSION

Companies must develop and support a broader responsibility and sustainability perspective towards their supply chains to ensure that their consumer, business, supply chain, community and environmental relationships and interactions remain viable in order to be able to face challenges for globalizing markets. Experience shows that it is a complex and long process to integrate Responsible Supply Chain Management in all levels of the organization. In this process companies are facing many challenges to overcome and it requires continuous improvement. But RSCM can provide the organization with both tangible and direct benefits, which may ultimately lead to a competitive advantage.

Our further research aims to develop an auditing system framework, which will enable MNCs to monitor their supplier base for ethical and sustainability criteria and to generate a self-regulating mechanism along the supply chain which again minimizes CSR risks in accordance with the United Nations Global Compact of sustainability efforts. The research will contain secondary and primary methods as well. After reviewing available literature about mainstream initiatives in the fields of Corporate Social Responsibility (CSR) and the Responsible Supply Chain Management (RSCM), an analysis of UN Global Compact's focal topics will be compared with the latest generation of the Global Reporting Initiative's assessment methods. Secondly, as a comparative analysis, the cooperation level with affected NGOs and CSR activities and commonly set goals of leading global players of the sector will be examined. The primary research will focus on the CSR awareness of 20 suppliers of an MNC from Eastern Europe and the Asia-Pacific area to identify their grade of maturity in responsible sustainability issues. The approach is an in-depth interview with predefined questionnaire.

The outcome of the research is expected to reveal differences between assumed and real CSR risks and to enhance future supplier assessments through proper adjustment of the audit approach. The refined questionnaire will serve as a basis for supplier self assessments and external CSR audits.

Acknowledgements

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The Business Federation of the Chambers of Trade and Commerce in Hungary

ERIKA SZILÁGYI FÜLÖP
ASSISTANT PROFESSOR

e-mail: vgterika@uni-miskolc.hu

SUMMARY

In Hungary, before joining the European Union, great stress was laid on the study of the intermediate or "mezzo" sphere between the policy and the economy, which had also covered the topic of the chambers of trade and commerce. Nowadays these institutions are in focus again because the increasingly smaller participation of the government in the economy would require the presence of the chambers' corporation to provide help in the business-related affairs of the country. For this reason I deal with the specific characteristics of each chamber model, the establishment of the Hungarian chamber system, its history and its present tasks. Being familiar with all these aspects, it is clear that its role in the development of economy (especially in the field of ventures) and some administrative rights has been beyond question in the past and continues to be so in the present. A model in my empirical study about the role of a chamber is also presented, which aims to investigate the needs for and use of services provided by the chamber among enterprises of different sizes, so their existence is indispensible.
Keywords: chambers of trade and commerce, business federation, the representation of interests, public institution
Journal of Economic Literature (JEL) code: K 39

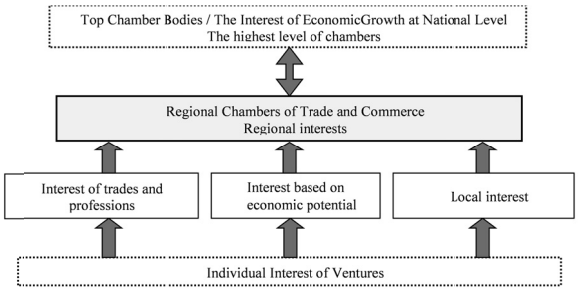
One of the economic-political aims of our government and the European Union (EU) is improving and supporting the micro, small and medium-sized ventures, in which the chambers can play an essential part. At the moment, however, they are forced to concentrate on ad hoc duties and short-term planning instead of their original and most important function: making it possible for their members to have mid-term concepts, views on markets outside our borderlines and, finally, informing their membership about the new regulations and changes. At the same time, the public administration also intends to find a professional partner in the enterpreneurial bodies.

THE CONCEPT OF THE CHAMBERS OF TRADE AND COMMERCE AND THEIR THEORETICAL BACKGROUND

One of the most urgent questions today is how certain social groups can carry out their interests with the help of the chambers. To answer this question we have to clarify the term 'interest' and that of the corporate system, as well as the role in the hierarchy and the historical background of the chambers.

For interest, I am using the following definition: the scope of a person's or group's possible activities and their intrinsic motivators. It always entails some kind of conflict, as "we can speak about interest only where there is a conflict, too" (Hegel, 1817. p: 59). By the corporate system, as I mean, the public protection of the interests of certain social groups at a state, regional or local level. In the old democratic countries the policy involves the operation of this corporate system as it provides the opportunity for different social groups to represent their interests. This requires the right of free association; without it the government can allow or prohibit the establishing and the operation of the corporate bodies (Gyurgyák, 1994). According to the democratic concept, public welfare can be brought about by the conflicts and the compromises between the different interests. The different groups, however, with their particular needs can endanger the achievement of the public good (Bayer, 1999).

Wherever chambers work we have to count on some specific, federational functions which are brought about by the concept of general and common interests. The economic local governments, due to their operating structure, are able to represent their interests effectively at the macro level of economy, too: the small interest groups are formed from the bottom and the chambers should complete the task of categorizing them in the order of their strengths. Figure 1 shows this system, i.e. that of the economic interests, which also involves all the main activities of the chambers, among them the harmonizing of different interest groups and areas.



Source: Póla (2006)

Figure1. Hierarchy of interest groups in the Chambers

THE HISTORY OF THE CHAMBERS OF TRADE AND COMMERCE IN HUNGARY

At the beginning of the XIX.century the industrialization, the development of trade and the forming of the bourgeois created all the necessary factors to foster economic growth and social progress. Thus the chambers of trade and commerce were formed, the task of which was "to represent the interest of commerce and industry in the lawsuits, against the government and the authorities, to further the claims and problems of the commercial and industrial sectors, to make reports and statistics about the current state of commerce and industry, and also to

release the obstacles slowing down the development of them" (Encyclopedia of Révai, 1997. p:592).

In every industrialized country of the world these chambers came about either in a private form, i.e. in a voluntary, fellowship form or as a public, obligatory membership-based unit. The very first institution was founded in France, where it appeared in 1590. Later, as a result of the Napoleonic wars, they were established in Germany (1801), then in Austria (1811). In the territory of the historical Hungary the first chamber was founded in Fiume, dealing with foreign trade and shipping, and adapting to the interests and business potentials of the place and the local entrepreneurs.

Chambers of commerce and trade started to spread more widely in the 1850s when a united chamber organization was set up. It had an important role in the organizing and the improving of the Hungarian economy: it proposed the establishment of the stock exchanges, the bonded warehouses and the National Bank, furthermore, it also supported the development of Hungarian agriculture. These changes required the birth of a new rule in 1868, which gave more autonomy to the chambers but, at the same time, kept the regulation about the membership having been issued in 1850. According to this rule the chambers were reorganized as local units, then in 1870 they decided on their national cooperation and also streamlined their progress plans. During the ministry of Gábor Baross the chambers were the main partners of the government in economic issues. They were given an even larger scope of operation in Laws LXIX of 1898 and III of 1907, which defined their role in the development of the national industry. Later Law XII of 1922 gave them further competence in the practice of trade and commerce.

Between the two world wars there were two groups differenciated in the corporate system. The first was the so-called "business–trade" units organized with the help of the law of free association. They guarded the members' interests but did not get the right from the government ro represent every side of them. The chambers of trade and commerce, however, were legal corporate bodies which were created by laws defining their structure, tasks and scope of authority. Their autonomy was much wider than the business-trade units, as they had not only the right to form their opinion about statutes but also to make proposals to the ministry. Thus they had more chances to represent the membership's interests in front of the government (Strausz, 2007).

The further development of the Hungarian chamber system, unlike the western European one, was not without problems. First, the local units were dissolved in 1944, then Szálasi[1] stopped their operation. Although they tried to reorganize themselves a year later, they were put into government ownership in 1948, their local representative units were closed and their membership status was given to state-owned companies. Practically, the chamber functioned as a background office of the Ministry of Foreign Trade. During the 40 years of communism the chamber could retain its previous position only very slowly. From the 1960s it could represent some economic interests in the field of foreign trade, while from 1980 its role was extended to coordinating and representing. At last, a few years before the change of the political system, Law XVI of 1987 founded the Hungarian Chamber of Trade and Commerce, though not in the classical, public sense.

To regain its original public form the chamber had to wait till 1994, when obligatory membership was declared and in March the parliament accepted Law XVI on the chambers of trade and commerce, which was put into practice on January 1, 1995. The establishment of the chambers is closely related to the change of the political system and the decrease of the parliament's participation in the economy. The obligatory membership, however, proved to be an unnecessary load for a lot of ventures, as it was exclusively about paying fees. Almost a year later the state suspended their subsidy, they could mantain themselves only from the membership dues, which led them to an extremely difficult financial situation. To solve this problem they tried to extend the scope of their services to attract more and more members.

On December 1, 1999, after a long debate, the parliament adopted a law (Law CXXI of 1999) which contained significant changes in the life of chambers, and which was put into practice on November 1, 2000. The most important of these changes were the abolishing of the compulsory membership fees of the economic units and also the gaining the right for the chambers to practice administrative authority. Nowadays, the same law regulates their operation, partly giving them back the scope of their administrative competence.

CHAMBER MODELS

In the market economy basically two types of model exist: the private one (i.e. the Anglo-Saxon model, which appears in the USA in its original form) and the public one (i.e. the continental model) which is accepted in the western European countries. Table 1 indicates their most important characteristics.

The Anglo-Saxon system of chambers is known for its structure built up from the bottom, on an individual base: the central political power did not supervise their birth, consequently, they did not get any public authority from it. These units are not legal entities but they work as assotiations which rarely participate in the local administration. Officially, they do not help the government with their consulting competence, either. Their scope of operation mainly concentrates on helping and inciting business relations. The chambers following the Anglo-Saxon model are independent from the government and the state administration. Due to their voluntary membership they represent only a small percentage of trade and economy so their financial and social influence is also insignificant.

The chambers based on the continental model, because of their public status and obligatory membership, can function as legal corporate units whose activities can cover the whole business field they work in, and owing to their constant cooperation with the government they can also exert influence on statutory items. These chambers have the right enacted by the law to represent the interest of the economy and to influence both the national and the local economy-related decisions. As a result of this, as well as of governmental subsidies, their autonomy is more restricted than that of their Anglo-Saxon partners; however, their independence from the central political power and their local administrative competence coupled with their wide financial and legal support give them a role that cannot be neglected in the socio-economic life of a country (Strausz, 2007).

Thanks to their public status and their automatic membership system, the financial resources of chambers based on the continental model are ready to serve as funding for their services. They have certain authoritative tasks; the scope of thier activities vary in each country and in some cases they completely overtake the role of the state. For example, in German-speaking areas and also in Hungary the vocational training and the developing of trade belong to the chambers, while in Romania they are also given the rights of the Court of Registration. The differences between the two models are listed in Table 1.

[1] *The Prime Minister of Hungary before World War II.*

Table 1
Comparison of the Private and Public Models

Private chambers	Public chambers
Association (lobby group)	Public institution
Voluntary membership	Obligatory membership[2]
No public duties	Public tasks
Restricted functions	Several functions
Have no rights declared by the law	Have rights declared by the law to influence local and national economic decisions
Weaker representation of interests	Efficient representation of ventures serving the harmonization of their interests

Source: Síkfői, 1999, p. 18.

Not only the pure forms of chambers appear in Europe; there also exists a so-called "mule" or transitory solution beween the two "pure" models, which works with voluntary membership but as a public institution. Figure 2 represents the chamber models operating in the European countries. We can see that each country has a chamber of trade and commerce which functions either with voluntary or obligatory membership but the common point in them is that their necessity is disputable in none of them.

Source: Private resource, 2012.

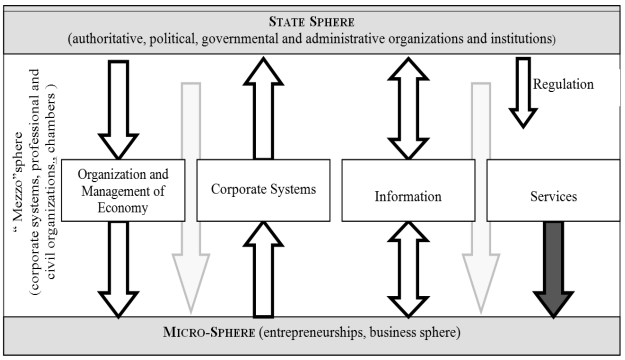
Figure 2. Chamber models in the European Countries

THE ROLE OF CHAMBERS IN THE INSTITUTIONS OF ECONOMIC ORGANIZATION

Organizing the business activities in a market economy basically involves the following three levels, as presented in Figure 3 (Farkas, 2000):

- the state sphere (i.e. the political or macro sphere): state and governmental organizations (with well-defined legal, executive and supervisory authority)
- micro-sphere: the whole enterpreneurship
- mezzo-sphere: between the two previous ones, situated in the middle of the economic "sandwich" with its own particular institutions, organizations and activities.

The first two levels can be regarded as primary spheres while the third one, the mezzo institutions have a secondary function. The primary spheres are clearly described groups, they have well-defined functions and tasks. Compared to them, the institutions of the secondary mezzo-sphere operate according to the requirements of the macro and/or micro-sphere, and they exist to serve them.



Source: Póla, 2006

Figure 3. The relationship between the different levels of business spheres, their characteristics and effects

[2] *The closed model assumes compulsory membership, although some countries still have different practices.*

We can see that between the two main spheres appears a third one, a mezzo-sphere and a system of institutions whose organizations are established to supply and serve the other two. The local economic governments, as one of the most important members of the mezzo-sphere „in the form of institutions must take part in the management of the national economy, in the process of its organization as well as in its public and social operations (Farkas, 2000). If they operate effectively, it can motivate the working of the market economy in fair conditions and with fair participants, and can give a competitive edge to the entrepreneurial sphere, among them the small and medium-sized businesses. The institutions of the mezzo-sphere must work well in order to provide a better foreseeable economy for the micro-level and also to make business life more competitive. The macro-sphere is supposed to cooperate with the related parts of the market economy, such as the chambers of trade and commerce.

In the mezzo-sphere, the operation of companies greatly depends on its institutions carrying out social tasks. One of the keys to a company's success is that it should be aware of and use the connections which it has in its environment.

THE LEGAL REGULATION OF THE CHAMBERS IN HUNGARY

The chambers of trade and commerce legally operate in the form of public institutions. The term and the basic rules of their functioning are prescribed in Article 65 of the Civil Code: "a public institution can be a chamber or any other organization which has local government and listed membership, and which is founded by the law or one or more persons entitled with the right of its establishment". This institution is responsible for achieving public tasks related directly to its membership or the activities of them. The general explanation of the law[3] declares that this regulation makes it possible for the new legal entities in the flexible sphere between the state and civil groups to participate in private legal affairs (Fazekas, 2006).

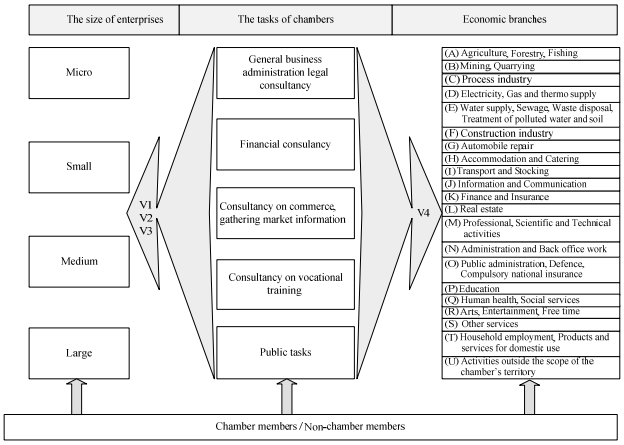
Besides the public tasks, however, some other duties have been imposed to the chambers. The tasks of the chambers of trade and commerce are to help the organization and the growth of the economy, ensure the security of business and the fairness of market trends, represent the common and general interests of the business participants and to carry out the business-related administration which is required by the law".[4] The final task, the administrative function, was taken over by a different office from the 1st of November 2000, but was returned to the chambers in 2003, when the law was changed.

The tasks mentioned above and indicated in the law of 1999 involve some other public duties (because a chamber functions as a public institute) added to the services, which also entails their presence in the development and organization of the economy. They are to represent the interest of their high-number membership both at local and national level. Thus we can see that the activities of the Hungarian chambers have two main sides: on the one hand, they take an active part in the development and supporting of the small and middle-scale ventures in continuous cooperation with the economic-political aims of the government, and on the other hand, they are regarded as the most important partner of it when representing corporate interests with their specific system and membership number.

To complete the legal requirements the chambers carry out different services. The scope of these services varies from country to country, so my study is restricted to focus on the activities of the Chamber of Trade and Commerce in Borsod-Abaúj-Zemplén County (BOKIK).

THE LOGICAL MODEL OF THE EMPIRICAL STUDY

I analyze the scope of services at BOKIK with the help of the conceptional model shown in Figure 4.



Source: Private resource, 2012.

Figure 4. An empirical study model of the services offered by BOKIK

According to this model I study the connection between three main factors, namely:

1. The size of the enterprises: based on Regulation 364/2004/EC and its relevant parts in Act XXXIV of 2004: micro, small, medium-sized and large enterprises.
2. The services and tasks offered by BOKIK:
   a) General business administration, legal consultancy
   b) Consultancy on financial support
   c) Consultancy on commerce and market information
   d) Consultancy on vocational training
   e) Public tasks
3. The branches of the national economy: the categories of branches listed in TEÁOR.[5]

On the basis of this logical model I would like to define the following relations:

- How much the enterprises know about the services offered by BOKIK. Based on the size category of ventures (sign V1 in Fig. 4) I intend to show this from two view-points, from that of the chamber members and the non-chamber ones,
- The use of offered services based on the size of the ventures (sign V2 in Fig. 4),
- How satisfied the participants of enterprises are, examined on the same basis (sign V3 in Fig. 4),
- The division of services categorized in the branches of the national economy (sign V4 in Fig. 4).

The results of previous studies carried out in this field, upon which I built my hypothesis, are the following (re: results of my previous researches):

[3] *Modifications of the Civil Law, Law XCII, 1993.*
[4] *Law CXXI of Chamber of Trade and Commerce, 1999*
[5] *Activities in a single sector classification as national economic branches*

1. Regarding the national branches, the services offered by the chambers are used mainly by the companies concerned with commercial, financial, insurance or construction activities. These services are needed for the micro and small enterprises.
2. In the case of the medium-sized and large enterprises some smaller scale and different types of offers are required. The reason for it is that these companies have their own consultants and experts with whom they can solve more economically and efficiently the majority of their problems. This tendency is supported by some findings of the questionnaire, too.
3. In the life of micro and small ventures the information about the changes of laws, conferences with specific topics, searching for business partners, display facilities, and details about financial resources are the most needed services. This is because they lack the internal financial and structural capacities which are necessary for them to operate successfully.
4. The medium-sized businesses have a need for services giving information about how to participate in fairs and exhibitions and helping to find business contacts.
5. The big companies, however, use fewer of the chambers' offered services and with different scopes: they prefer to extend their business contacts, and they also strive to have representation at the national level.

I hope to prove or contradict these findings on the basis of the results of an empirical study carried out at 100 of the member companies of BOKIK. My hypothesis is that the presence of the chamber is definitely necessary, as are the services offered by it.

THE FURTHER TASKS OF MY RESEARCH

The next point of my study is to decide whether obligatory membership should be required in the chambers or not. As the Hungarian system belongs to the branch with public authority and functions as a public institution, but also with voluntary membership, which is a characteristic of the private chambers, we can see that its status is vacillating between the two models. "Our task, however, is not forming a third type but choosing between the already existing private or public models" (Póla, 2006.p.5). According to some experts the obligatory membership should be introduced again and it is the concept I would also like to join with the results of my empirical study. The first step of the process was made in January 2012, when compulsory registration for all businesses was initiated.

The obligatory membership is the most important characteristic of chambers having public authority. It would also provide full- scope participation for the economic units in achieving public tasks related to the wider national economy. Furthermore, the government could have access to important data that can help in preparing their regulations and strategies. All these are feasible if they use the advantages of the chambers' operational network system and their enterpreneurial contacts. This aim, however, can be realized only with the close cooperation of the participants and their dedication to a common goal.

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The described work was carried out as part of the TÁMOP-4.2.2/B-10/1-2010-0008 project in the framework of the New Hungarian Development Plan. The realization of this project is supported by the European Union, co-financed by the European Social Fund.

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A Comprehensive Review of Scientific Literature on Methods for Determining Discount Rates in Corporate Practices

KLÁRA SZŰCS MARKOVICS
ASSISTANT LECTURER

e-mail: vgtklara@uni-miskolc.hu

SUMMARY

On the basis of the findings of research conducted in eighteen countries and in the Central and Eastern European region, this study seeks to understand how the discount rate is set when capital budgeting practices are involved. According to the reviewed academic literature, the weighted average cost of capital is the most popular method of determining discount rates in a number of countries. Besides this, decision makers often apply the single method of corporate required rate of return regardless of the character of specific decision aspects and market risks.
Keywords: capital budgeting; discount rates; required rate of return; weighted average cost of capital.
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INTRODUCTION

In order to apply dynamic capital budgeting practices such as the net present value or profitability index, it is required to determine discount rates quantifying the required rate of return. Since the amount of discount rate considerably affects both the final results and the evaluation of efficiency of capital budgeting practices, corporate experts should compute discount rates extremely accurately. In the Hungarian academic literature of the 1970s the required rate of return was called the discount rate. However, since the 1980s, following the trends in the English academic literature, Hungarian scholars have used several other terms to express this concept.

This study presents research findings published on this topic in English. In the course of evaluation and interpretation of findings, special attention is paid to the following issues:

a) A representative approach often fails to give a clear picture about the topic of research, which results in a rather superficial knowledge of applied research methods.
b) The evaluation of the empirical surveys on capital budgeting practices preferred by companies showed that the applied research methodology was extremely heterogeneous. Most surveys used questionnaires which were supplemented by oral interviews in some cases. Phone and e-mail surveys were also conducted.
c) The circle of sampled firms involved in the surveys under analysis was quite wide. Companies differed along size dimensions. Most surveys were conducted on major companies and within them on companies listed on the Stock Exchange. Few surveys were conducted on small and medium-sized companies. There were even surveys in which the size of the sampled companies was irrelevant.
d) As for the element number of the samples, there were surveys with hundreds of respondents and there were some with less than one hundred.
e) As for the sectors of industry, the surveys did not show a single picture. There were surveys conducted in a wide range of companies belonging to different sectors, whereas some surveys excluded companies providing financial services, while the others targeted only the manufacturing industry or limited their scope to a few branches.
f) It was difficult to compare the survey results conducted overseas. This might have stemmed from the fact that there were some methods and factors (for example, cost of debt, cost of borrowing; weighted average cost of capital, weighted cost of sources of fund) that had the same or at least a very similar meaning, but they were used as different terms in several studies. In addition, there were some methods which were difficult to identify, thus the names of the applied methods were only guessed, which is likely to lead to misappropriate interpretation of findings.
g) Since researchers often conducted research on the same topic from different angles, it was problematic or sometimes even impossible to compare their results.

A number of Hungarian academic articles discuss the definition of discount rate in differing degrees of detail. Despite the comparatively 'extensive' literature on this topic, very few studies provide information about the method of defining the required rate of return preferred by Hungarian decision makers. As for the literature outside of Hungary, this issue constitutes a part of the research agenda and studies attempt to provide an answer to the question of how the required rate of return is determined in corporate practice.

METHODS OF DETERMINING DISCOUNT RATES

Companies under analysis applied different methods in their surveys since there are several methods of determining the required rate of return in the academic literature. There were cases when decision makers relied on their previous personal experience and determined the discount rate without performing any calculations.

In the 1960s in the western literature on business management the most popular method was summarised by Schneider (1962), who stated that discount rates should be determined for the company's equity and debt capital separately. If a company has equity capital, the discount rate should be as high as in the investment projects with similar

risks. If debt capital is involved, the discount rate is calculated from credit interest rates increased by risk premium. A few decades ago, following the trends in the foreign literature, Hungarian researchers offered to compute interest rates by the required rate of return. However, Megyeri in his book published in 1970, expressed his concerns and claimed that discount rates applied in capital budgeting practices do not necessarily coincide with the interest rates of long-term credit and they cannot be lower than that value. When the amount of discount rate is computed, the values at risk, the profitability of other capital budgeting practices, the entrepreneurs' profit and some other issues are also taken into account (Megyeri, 1970, p.18.).

Bélyácz gives the following definition to the discount rate: The discount rate is an intangible time factor of capital budgeting, which developed as a result of several factors (Bélyácz, 1985, p.157.). Then he notes that the amount of the discount rate is a heavily debated issue in capital budgeting practices and it is important to take into account the factors affecting it. The applied factor of discount interests varies by the investment project and sets the minimum acceptable rate of return required from the capital budgeting practices (Bélyácz, 1985, p.157.). He warns against setting too high or too low a discount rate and favours discount rates ranging from 10% to 20%. According to Garrison (1985), corporate capital costs should be applied in case of capital budgeting practices. He also claims that corporate capital costs and interest rates paid on long-term debt are different concepts. Corporate capital cost is rather a comprehensive approach incorporating both equity capital costs and debt capital costs.

In the Study Volumes published in 2005 Csutora formulates the essence of the discount rate as follows: In corporate capital budgeting practices, the discount rate shows profit opportunity costs of capital, namely the costs of the best possible alternative. In the case of the nominal discount rate, this cost includes inflation and the interest rate that a company can generate by performing alternative investments. The higher the risk value of a project is, the higher the nominal discount rate is, because companies undertake higher risks in a project when they expect a higher return on their investment (Csutora, 2005, pp.13-14.). Kaplan and Atkinson's definition of the discount rate is consistent with Csutora's. According to them the discounted future cash-flow compensates the investor for losing the opportunity to invest his money in other directions while he is expecting some profit. Thus, the discount rate should reflect the lost profit of potential alternative investments, that is, the profit the investor would have gained in the event of investment with similar value of risk (Kaplan and Atkinson, 2003, p.554.).

The finance literature offers a definition based on capital yield differentiated in the proportion of capital holding as a criterion for dynamic capital budgeting practices, where the most frequently applied method is the Weighted Average Cost of Capital (WACC)**.** According to Copeland et al., WACC is the discount rate used to convert expected future cash flow into present value for all investors (Copeland et al., 1999, p.272.). A Hungarian Internet Stock Exchange glossary defines WACC as follows: "Weighted Average Cost of Capital is the expected rate of return of corporate owners' equity and debt capital weighted by company's capital structure" (Tőzsdeszótár, p. 265).

Some authors mention the risk involved in applying Weighted Average Cost of Capital as the discount rate. Illés highlights the problems of the WACC indicator where the expected rate of return charged for equity capital and for credit consistently differ (Illés 2002, p.172.), which results in the fact that the higher the credit proportion is, the lower the rate of WACC is, because the required rate of return of the total risk premium is not charged for the credit. Thus, Illés suggests that discount rate should be computed by applying required rate of return complying with the average level of opportunity cost. He also claims that equity capital should be charged both for the required rate of return and for debt capital and the charge should be the same, because the price of the product available on the market does not depend on the structure of the equity capital of the manufacturing company. (See references: Illés, 2002, pp.53-55 and 63-66). The discount rate can theoretically be quantified by the required rate of return of a safe investment in government bonds and it is made up of the price of capital consumption and the rate of entrepreneurial profit expectation on the invested capital. According to Illés, practices of companies involved in similar activities (with similar rate of risk) and the special risk correlation of an individual decision may provide a basis for formulating the definition of discount rate (Illés, 2002, p. 55).

Bélyácz highlights problems arising from applying WACC as the discount rate from another aspect. He thinks that applying WACC as the discount rate to future cash flow is possible only if the risk of the project being evaluated is similar to the risk of the current corporate activities. If the weighted risk of the project is taken into account and if the project risk considerably differs from the risk of overall company, the decision made on WACC will be faulty (Bélyácz, 2009, p. 224).

DETERMINING DISCOUNT RATE IN CORPORATE PRACTICE

Considerable research into methods of setting discount rate has been conducted in a number of countries all over the world in the past few decades. The studies in this comparative analysis deal with findings of the research conducted abroad. They focus on comprehensive analyses of corporate decisions on capital budgeting practices. The evaluation of the methods applied for quantifying the required rate of return constitutes only a part of the aforementioned studies.

The academic literature offers numerous methods for setting the required rate of return, which are more or less applicable for this purpose. It is very difficult to compare the results of the studies under analysis because the finance literature does not share a common approach to the required rate of return, studies apply different methodology when investigating this issue and researchers analyse different indicators in this field. The studies under this comparative analysis applied more than a dozen methods, and used several indicators and procedures. Several of them were described in almost every study, but there were some that were mentioned only in one study.

Since most studies applied the method of weighted average cost of capital in some form as an offered option, this comparative study will discuss the survey results by continent in a chronological order first and afterwards summarise the findings of research which do not contain the method of weighted average cost of capital as an offered option. This approach is justified by the fact that researchers applied a wide range of interviewing methods and it is difficult or simply impossible to compare the findings.

OVERVIEW OF RESEARCH RESULTS CONTAINING WEIGHTED AVERAGE COST OF CAPITAL

Research teams from Europe consisting of Liljeblom and Vaihekoski (Finland), Hermes et al. (the Netherlands) and Andor et al. (Central and East European region) conducted research on this topic. Liljeblom and Vaihekoski (2004)

interviewed chief financial officers of companies listed on the Finnish Stock Exchange about their capital budgeting practices made in 2002. The questionnaires were e-mailed to managers of 144 companies listed on the Stock Exchange in Helsinki in August 2002. The researchers were interested in the primary and secondary methods used by managers in setting the required rate of return. The responses are illustrated in Table 1.

Table 1
Primary and secondary methods of setting the required rate of return used by managers of companies listed on the Finnish Stock Exchange in 2002

Method of determining the required rate of return	Primary	Secondary	In some cases
Not set/no method used	9.1%	0.0%	9.5%
Same as for the whole company (WACC)	45.5%	5.8%	4.8%
WACC adjusted by project's risk	13.6%	19.2%	14.3%
WACC adjusted by division's risk	2.3%	5.8%	4.8%
WACC adjusted by country's risk	2.3%	7.7%	14.3%
Based totally on project's risk	9.1%	25.0%	4.8%
Using rule of thumb	4.5%	11.5%	28.6%
Based on the project manager's evaluation	2.3%	13.5%	14.3%
Based on the ratio of equity and debt used to finance the project	1.4%	11.5%	4.8%
Total	100.0%	100.0%	100.0%

Source: Liljeblom – Vaihekoski, 2004, p. 21.

The researchers offered the managers nine answers to chose from and five out of nine were related to capital budgeting practices based on differentiated rate of return. The range of the offered answers was reasonable compared to those in other surveys. According to the received responses illustrated in Table 1, three-fourths of the Finnish listed companies primarily applied differentiated methodology adjusted to capital structure when they quantified the required rate of return. The application of weighted average cost of capital was the most frequently used method. About one-fourth of respondents secondarily applied a methodology targeting overall project risks.

The Netherlands is another country where weighted average cost of capital is applied by many companies. Hermes et al. (2006) e-mailed questionnaires to sample firms in the Netherlands and China in the period between October 2003 and June 2004. Only 42 out of 250 e-mailed questionnaires were filled in and sent back. The research team asked questions related to the methods of setting the required rate of return. The chief financial officers were offered four answers and were asked to choose the most frequently used one. The responses showed that two-thirds of Finnish companies applied the weighted average cost of capital for setting the discount rate. Cost of debt was used by 14.3% and about 9.5% quantified the discount rate by cost of capital adjusted to risks involved in the project or by other methods. The surveys revealed that small companies and financial officers with lower qualifications use cost of debt capital more frequently than major companies and highly qualified decision makers.

A survey encompassing ten countries in Central and East Europe showed that the application of weighted average cost of capital as discount rate is not common. Andor et al. (2011) conducted an empirical study in ten countries (Bulgaria, the Czech Republic, Croatia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia). They interviewed as many as four hundred companies employing at least twenty-five people. In the phone interviews questions related to capital budgeting practices were asked. The research team was interested whether the corporate decision makers applying capital budgeting practices charged discount rates for companies or for a particular project and which method was used for setting discount rate. Four methods were offered to respondents (for those who use discount rate at company level and at project level) on the questionnaire. The results are summarised in Table 2.

Table 2
Methods of determining discount rate in the Central and Eastern European region, 2010

Method of determining discount rate	Discount rate for firm	Discount rate for projects
We don't calculate it directly; we use general discount rate(s)	68.75%	47.52%
We use the Weighted Average Cost of Capital (WACC)	20.83%	33.67%
We use the Capital Asset Pricing Model (CAPM) to calculate the whole discount rate	6.25%	2.97%
Our practice is not consistent	4.17%	15.84%
Total	100.00%	100.00%

Source: The author's own construction on the basis of data taken from two tables in Andor et al. (2011, p. 40)

Central and Eastern European company managers applying discount rate both at company and at project levels tend to ignore setting the amount of the rate directly. They use the general discount rate in capital budgeting practices. It sounds a little strange at first. However, mention should be made that the majority of experienced managers are able to estimate the percentage profitability of capital budgeting practices with a similar rate of risk in other companies. Corporate practices reveal that managers set a certain discount rate after collecting sufficient information and performing thorough risk factor calculations, then forwarding the rate to decision makers without any explanations or remarks and is 'compulsorily' considered to be the required rate of return. The second most commonly used method in both circles of companies is the weighted average cost of capital. The application of the CAPM model is not widespread among companies in the region. The results of the surveys highlighted the fact that a higher proportion of Finnish and Dutch managers apply the WACC for setting discount rate than Central and Eastern European decision makers.

Considerable research on this topic has been conducted in the USA and Canada in the past few decades (Oblak and Helm, Petty and Scott, Jog and Srivastava, as well as Payne et al.). Oblak and Helm (1980) sampled multinational companies and found that 54% of respondents applied the weighted average cost of capital for setting the required rate of return. They also used cost of debt capital, past personal experience, expected growth rate and the CAPM model. The findings of surveys conducted within the circle of major companies by Petty and Scott (1981) show a bit different picture. As many as 44% of respondents claimed that they applied the weighted average cost of capital as the discount rate in capital budgeting practices. The rate of return was used by two-thirds of companies (66%). Jog and Srivastava (1995) surveyed companies in Canada where 47% favoured weighted average cost of capital to quantify the required rate of return, which is consistent with Petty and Scott's findings. Payne et al. (1999) compared capital budgeting practices used by Canadian and American company managers. The survey revealed that the weighted average cost of capital is a more commonly applied method in the USA than in Canada. In addition, Canadian decision makers rely on their personal judgment and experience more than their American counterparts.

Four studies in the analysis conducted in Asia (Kester et al., Leon et al., Isa and Kester, Hermes et al., Dangol et al.) also

contained a question regarding the application of weighted average cost of capital as a discount rate. Kester et al (1999) interviewed several CEOs and CFOs of listed companies about their capital budgeting practices in a number of Asian countries and in the Pacific region in 1996 and in 1997. As for the sector of industry, the sample proportion in these countries showed a diverse picture. One question was related to the methods of setting the rate of return. The responses are given in Table 3.

Table 3
Methods of determining discount rate in five listed Asian countries in the late 1990s

Method of determining discount rate	Hong Kong	Indonesia	Malaysia	Philippines	Singapore
Single Discount Rate based on company's overall weighted average cost of capital used to evaluate all proposed capital investments	23.8%	28.6%	29.4%	16.1%	10.8%
Multiple Risk-Adjusted Discount Ratesare used; the riskier the investment, the higher the rate	19.1%	28.6%	23.5%	51.6%	37.8%
The discount rate used for each project is the cost of the Specific Capital Used to Finance the Project (i.e., the discount rate for a project that will be financed entirely with debt is the cost of debt)	57.1%	42.8%	47.1%	32.3%	51.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Kester et al., 1999, p. 29

In the course of evaluation and interpretation of the findings summarised in Table 3, special attention was paid to the following issues:

a) The offered three methods did not seem to be sufficient. In addition, the questionnaire failed to offer 'other' as an option answer. Despite the mentioned shortcomings the aggregated value amounted to 100%. Thus, the three methods offered in the surveys were more popular in the surveyed countries than the numerous other methods described in the academic literature. However, this assumption is hardly valid.
b) The naming of methods was uncommon. The content of offered response categories was sometimes unclear. In economics the single corporate required rate of return based on the weighted average cost of capital which is computed from corporate data is never called a simple discount rate. The survey developers were not familiar with the real concept of discount rate multiply adjusted for risk. Thus, it is unclear whether the weighted average cost of capital was risk-adjusted or not.

In the questionnaire developed by Kester et al. the first and the third answers offered were related to the weighted average cost of capital. The first answer was based on corporate capital structure, the third one dealt with the project capital structure. It is unclear whether the second answer was based on the weighted average cost of capital. The responses suggest that a comparatively large proportion of listed companies applied WACC. The received percentage of 62-81% should be carefully interpreted. Firstly, because the offered answers were of limited and of specific character and could be easily misunderstood. Secondly, because of the low number of respondents. The discount rate based on cost of capital complying with individual project funding was more popular than the other differentiated methods based on the required rate of return. The wide popularity of the first method was very surprising because if the whole project were financed from credit, the discount rate would be as high as the credit interest. (It is obvious that the example on funding a project only from credit is an exaggeration which is far from reality, since equity capital is required for all projects in real life. The academic writer just makes an attempt to call attention to a huge shortcoming of the method. The related academic literature suggests if the project risk is considerably higher than the average, the discount rate needs adjusting.) According to Kester et al., the application of discount rate adjusted for risk – contrary to the proposition offered in the literature – was not considered to be a widespread method in the surveyed regions apart from two countries, which were the Philippines and Singapore, where the decision makers of listed companies often used this method.

There was another research group (Leon et al., 2008) analysing practices of defining the discount rate in Indonesia in 2000. Both groups targeted companies listed on the Stock Exchange. However, there is a great difference in the number of their responses which can be evaluated. Kester et al. received 16 responses, whereas Leon et al. assessed 54 responses. In the course of evaluation the low number of responses should be taken into consideration. Both findings revealed that weighted average cost of capital was more often applied for determining discount rate in Indonesia than in other Asian countries. In the first study 71.4% of Indonesian managers applied WACC as a discount rate for capital budgeting practices (both at project and corporate levels). In the other survey 81.5% respondents used WACC or its project-matched risk version for setting discount rate. The comparison of these results with the findings of other studies under analysis revealed that using the weighted average cost of capital for setting discount rate was as popular in East-Asian countries as in Finland or the Netherlands.

The research team made up of Hermes, Smid and Yao (2006) that conducted research in the Netherlands and was mentioned above also conducted an e-mail survey in China. They interviewed employees of 300 companies regarding the most frequently applied method for setting the required rate of return. They received 45 responses. The responses reveal that more than a half (55.3%) of companies used WACC, 28.9% applied the cost of debt and 15.7% favoured the project-dependent cost of capital for setting the discount rate. Taking into account the size of the country, the survey involved a low number of companies. Thus, the results should be carefully interpreted. The study under analysis points out that Chinese financial officers with higher levels of education applied the cost of debt less frequently than their less educated colleagues or small companies. In addition, manufacturing firms used the cost of debt more often than other Chinese companies.

In Nepal forty manufacturing companies were interviewed about their capital budgeting practices (Dangol et al., 2011). The study also investigated how the companies in Nepal set the required rate of return. The responses revealed that the largest number of manufacturing companies (45%) used the target rate of return set by the management. It was followed by the weighted cost of sources of fund (32.5%). Only 10% of respondents indicated that they apply the company's historical rate of return and another 10% favoured the cost of specific source of fund for quantifying the rate of return.

Surveys on the application of WACC for setting discount rate were also conducted in Australia (Kester et al.) and in New

Zealand (Petty and Scott; Patterson; Vos and Vos). Kester et al (1999) interviewed companies in several Asian countries and expanded their survey work to Australia in 1996 and 1997. One of their questions investigated the use of methods for setting the minimum required rate of return in capital budgeting practices. The wording and the question structure of the survey developed by the research team should be taken into consideration when the results are assessed. The responses revealed that a relatively high proportion of the companies listed on the Stock Exchange in Australia applied WACC (62.5% used this method in case of corporate capital structure and project-specific capital structure). A Risk-adjusted discount rate was also frequently applied (37.5%).

In contrast, very few companies in New Zealand applied WACC for setting the discount rate. A study was conducted in New Zealand in 1999 to examine capital budgeting practices in small businesses (Vos and Vos, 1999). Questionnaires consisting of five pages were mailed to 3,446 randomly selected small businesses. Responses were received from 238 companies. Companies which responded that they applied dynamic capital budgeting were asked how they computed the discount rate when calculation was required. The responses are illustrated in Table 4.

The judgement-based target return was the most popular method applied for computing discount rate by small businesses (42%) in New Zealand. The study did not indicate whose judgment (managers' or stakeholders') provided a basis for defining the expected rate of return. Historical accounting return on assets was the second most favoured method. Cost of debt capital was used by 13% and WACC was applied by only 10%. The researchers conducting this survey compared these findings with results of Patterson's (1989) as well as with Petty and Scott's (1981) surveys. Patterson surveyed companies listed on the Stock Exchange in New Zealand, whereas Petty and Scott interviewed American multinational companies. Both in 1981 and in 1989 the respondents may have ticked several answers in the questionnaires because after the figures were added, the percentage exceeded 100%. The results of the three surveys are shown in Table 4.

Table 4
Methods of determining discount rate by companies in New Zealand and USA in the 1980s and 1990s

Method of determining discount rate	Vos & Vos (1999) New Zealand Unlisted Companies	Patterson (1989) New Zealand Listed Companies	Petty & Scott (1981) American Multinational Companies
Judgment-Based target return	42%	57%	66%
Historical accounting ROA	15%	9%	15%
No method indicated	14%	5%	--
Cost of debt capital alone	13%	27%	11%
WACC	10%	30%	44%
Other	6%	5%	--

Source: Vos and Vos (1999, p. 8)

The results of the three surveys significantly differ. Three factors should be taken into account when the results are assessed. Firstly, almost two decades passed between the surveys. Secondly, only one answer was accepted in the survey of 1999, whereas in the other two surveys, the respondents were allowed to choose several answers. Finally, the circle of the surveyed companies also differed. Thus, the following statement can be made: judgement-based target return was applied for computing the discount rate in all three surveys. It was a popular method among businesses. About two-thirds of American companies, 57% of listed New Zealand companies and 42% of unlisted businesses applied this indicator when computing was required. The weighted average cost of capital was popular among major companies. This indicator was used by 44% of American major companies and 30% of New Zealand major companies, as opposed to 10% of New Zealand small businesses. Cost of debt capital alone was favoured by listed New Zealand companies. The other two types of companies applied historical accounting return on assets.

Relatively few research studies on corporate capital budgeting practices have been conducted in African countries and only one study was interested in methods used for quantifying the required rate of return. A study published in 2006 summarised the findings of a survey involving 94 companies listed on the Nigerian Stock Exchange (Elumilade et al., 2006). The study revealed that two-thirds of corporate managers relied on their previous personal experience when the discount rate was set. The second popular method was the weighted average cost of capital and one-fifths of managers used it for setting the discount rate. This method was followed by the cost of equity capital.

OVERVIEW OF RESEARCH RESULTSNOT CONTAINING WEIGHTED AVERAGE COST OF CAPITAL

There are very few studies that do not directly ask about the application of weighted average cost of capital for setting discount rate. In the studies under comparison there were only three: the study in the USA conducted by Graham and Harvey, another study carried out in four European countries by Brounen et al., and one more study performed in Australia by Truong e al. Mention should be made that although these researchers did not directly ask about the application of WACC for setting discount rate, they did not clarify how companies determined the commonly used discount rate at corporate level when individual investment projects were evaluated. It may have happened that some companies quantified the commonly used discount rate at corporate level from WACC adjusted to corporate capital structure. Thus, WACC was used to determine discount rate, however, in an indirect way, which the researchers failed to notice. Since the methods in the offered answers in these research studies completely differed from the ones offered in other analysed studies, the comparison of the findings is difficult.

Graham and Harvey (2001) conducted a comprehensive survey sampling a large number of companies in the USA at the turn of the century. Questionnaires were sent to 4,440 chief financial officers of American companies and in total, 392 of them responded to the survey. The companies ranged from very small to very large. Forty percent of the companies were manufacturers, 15% were financial firms and 13% were from the transportation and energy sectors. The researchers

investigated what methods from the offered answers the sampled companies used for quantifying the required rate of return in evaluating a project in an overseas market and how frequently they applied the preferred method. The respondents were asked to rate on a scale of 0 to 4. The results are summarised in Table 5. According to the study American decision makers always or almost always selected the discount rate for their entire company (58.79%) and risk-matched discount rate for a particular project (50.95%) for determining the required rate of return. Table 5 shows that the total sum of values in some countries considerably exceeds 100%; consequently, the respondents might have been allowed to choose several offered answers to one question.

Brounen et al. (2004) translated the questionnaire compiled by Graham and Harvey and conducted a survey in four European countries: the United Kingdom, the Netherlands, Germany and France in 2004. Both private and public companies employing 25 or more employees were selected. As a result 2000 companies from the U.K., Germany and France and 500 companies from the Netherlands made up the sample set. However, the number of responses received was very low, despite the fact that the American questionnaire was translated into the target language and the questions and the offered answers were the same as those in Graham and Harvey's study. The overall response rate amounted only to 5%. The results of the responses are shown in Table 5.

Table 5
Methods of determining the required rate of return in the USA and four European countries in 2004 (the percentage illustrates the proportion of companies with 'always or almost always' responses)

Method of determining the required rate of return	U.S.	U.K.	Netherlands	Germany	France
The discount rate for our entire company	58.79%	40.98%	64.58%	41.96%	24.14%
A risk-matched discount rate for this particular project (considering both country and industry)	50.95%	23.73%	27.08%	25.00%	27.27%
The discount rate for the overseas market (country discount rate)	34.52%	20.00%	14.89%	14.85%	16.36%
A divisional discount rate (if the project line of business matches a domestic division)	15.61%	17.24%	17.02%	12.00%	12.50%
A different discount rate for each component cash flow that has a different risk characteristic (e.g. depreciation compared to operating cash flows)	9.87%	10.53%	2.13%	7.14%	11.32%

Sources: Graham and Harvey 2001, p. 4 and Brounen et al., 2004, p. 97

Table 5 reveals that respondents from every country participating in this survey, with the exception of France, use the discount rate for their entire company when evaluating a new project in an overseas market. French respondents favour the method of a risk-matched discount rate for a particular project, which is quite popular among British, Dutch and German company managers, also.

In the same year Truong et al. (2004) conducted a survey on capital budgeting practices in Australia. The results were consistent with both American and European research. The survey based on 87 responses reveals that the most popular method is the discount rate for the entire company (57%), which is followed by the risk-matched discount rate for a particular project (22%). The number of Australian managers determining the discount rate based on their previous personal experience amounted to 17%.

CONCLUSIONS

Quantifying discount rate in corporate practices is extremely difficult. In addition, its evaluation is based on estimation. Consequently, there is a subjective factor involved. After conducting comparative analyses of several empirical research studies, it can be claimed that there are several methods of determining discount rate in corporate practice. The studies written in English and analysed here each show a different approach to this issue and ask quite different questions related to methods of determining discount rate. On the basis of the methods used in the questionnaires, the research studies can be classified into two large groups: surveys that ask about the discount rate determined from weighted average cost of capital, and surveys that lack this method. Since these studies analysed different aspects, the findings of the two groups cannot be compared.

Since the general decision-making methodology is being given more and more attention in the financial literature, corporate decision makers use the weighted average cost of capital (WACC) for determining the discount rate in dynamic capital budgeting. The analysed studies reveal that there are countries such as Finland, the Netherlands, Hong Kong, Indonesia, Malaysia and Singapore where the rate of companies using WACC for determining the discount rate is surprisingly high.

The surveys which do not include WACC in their analyses reveal that managers in the USA, U.K., the Netherlands, Germany and Australia often do not determine the discount rate when they evaluate a new project. They rather use the discount rate for their entire company in capital budgeting. Unfortunately, very few researchers deal with exploring correlations and links hiding behind the obtained results.

It is typical that in some countries company managers determine the discount rate without performing any calculations. They completely rely on their previous personal experience, which does not seem to be a less acceptable method than WACC if decision makers are well-qualified, experienced and prudent enough.

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Tendencies in the European and Hungarian Management Consulting Market

ÁGNES TOKÁR-SZADAI, Ph.D.
ASSISTANT PROFESSOR

e-mail: vgtsza@uni-miskolc.hu

SUMMARY

There are two main approaches in the relevant literature of consulting: the first approach emphasises that consultants are helpers; they help clients with solving their problems. The second approach, which views consulting as a special professional service, is used by professional associations and institutes of management consultants. I would like to summarise the different approaches and definitions of management consulting in the relevant English and German literature, evaluate the development of the definitions, and integrate the different approaches. After delineation of the complex definition of management consulting, I will summarise tendencies in the European and Hungarian management consulting market based on surveys of the European Federation of Management Consultancies Associations (FEACO) in the period 1998-2011.
Keywords: management consulting, management consulting market, management tendencies
Journal of Economic Literature (JEL) code: M53

INTRODUCTION

There is no common definition of management consulting in the relevant literature. We lack unambiguous, common definitions in the area of consulting, which would be the basis or the essential condition for making a fair international comparison. Here I summarise the different approaches and definitions of management consulting available in the relevant English and German literature. Then I shall evaluate the development of the definitions, and attempt to integrate the different approaches.

APPROACHES AND DEFINITIONS OF MANAGEMENT CONSULTING

There are two main approaches in the relevant literature of consulting:

- The first approach takes a broad view of consulting. Peter Block suggests that "You are consulting any time you are trying to change or improve a situation but have no direct control over the implementation… Most people in staff roles in organizations are really consultants even if they don't officially call themselves consultants" (Block 2000, p. 2).
- The second approach views consulting as a special professional service and emphasises characteristics that the consultant must possess. The essential points and fundamental principle of management consulting are included in the definition of Larry Greiner and Robert Metzger, which has been quoted in a number of books and articles: "Management consulting is an advisory service contracted for and provided to organizations by specially trained and qualified persons who assist, in an objective and independent manner, the client organization to identify management problems, analyse such problems, recommend solutions to these problems, and help, when requested, in the implementation of solutions" (Greiner and Metzger 1983, p. 7.) The first approach emphasises that consultants are helpers: they help managers or anyone else solving problems. In this approach a manager can also act as a consultant if he or she gives advice and help to employees rather than directing orders to them. The second approach views consulting as a special professional. This approach is used by professional associations and institutes of management consultants. According to the European Federation of Management Consultancies Associations (Federation Européenne des Associations de Conseils en Organisation, or FEACO), "These services help private and public organisations to analyse and redefine their strategies, to improve the efficiency of their business operations and to optimize their technical and human resources." (FEACO 2012, p.11).

The two approaches can be regarded as complementary rather than conflicting. Management consulting can be viewed as a professional service and as a method of assisting organisations to improve management and business practice.

There is no doubt that management consulting has developed into a specific sector of professional activity and should be treated as such (Kubr 2002). At the same time it is also a method of providing practical advice and help. In this relation not only full-time consultants, but also many other technically competent persons can act as consultants. These people may take part in research, systems development, project development and evaluation, and/or give practical advice to clients. In this relation also coaching can be treated as a borderland of consulting.

The International Coaching Federation (ICF 2006) defines coaching as an ongoing partnership that helps clients produce fulfilling results in their personal and professional lives. Through the process of coaching, clients deepen their learning, improve their performance, and enhance their quality of life. The coach's job is to provide support to enhance the skills, resources, and creativity that the client already has. The ICF defines coaching as "partnering with clients in a thought-provoking and creative process that inspires them to maximize their personal and professional potential" (ICF, 2012). The coach supports the manager in recognising problems, and identifying when the old solutions are not effective anymore, and helps him or her to improve his or her own solution. The substance of coaching is to put the right question at the right time. A consultant can also act in the role of coach, when

instead of offering concrete suggestions to improve effectiveness and increase success, he or she puts the client on the way to finding a solution.

It would be effective if not only full-time consultants were hired but also other technically competent persons whose main occupation may be research, systems development, project development and evaluation or teaching. To be effective they need to have consulting skills and to observe the fundamental behavioural rules of professional consulting, and it is worthwhile for consultants to be familiar with and apply coaching as a work method.

Development of the Definition of the Management Consulting in the Relevant English and German Literature

Traditionally the scope of the services offered by management consultants was confined to functions, subjects and problems regarded as a part of management, although the scope of "management" has never been fully and accurately defined. "Management consultants were keen to stick to their business and maintain their identity, and most of them were not particularly seeking to broaden their services and explore new territory" (Kubr 2002, p. 27).

In recent decades this attitude has changed dramatically: management consultants have started to rethink and redefine their business, widening and enhancing their service offerings. The complexity of management consulting has grown in both the national and international environment. Based on surveys on business consulting in 2001 and in 2005-06 (Tokár-Szadai 2008) according to the opinion of clients one of the most important factors in choosing a consulting firm was the complexity of the service. The consultants have to follow the national and international trend: the growing demand for integrated professional services.

This tendency can be noticed in the changes in the definition of management consulting. According to the European Federation of Management Consultancies Associations – established in 1960 – "Management consulting is the rendering of independent advice and assistance about management issues. This typically includes identifying and investigating problems and opportunities, recommending appropriate action and helping to implement those recommendations" (FEACO 2006). This definition is applied by the members of FEACO (for example the Association of Management Consultants in Hungary (Vezetési Tanácsadók Magyarországi Szövetsége), (VTMSZ1994 and the Bundesverband Deutscher Unternehmensberater (BDU 2012)).

Although neither the name of the 50-year-old Associations of Management Consultants nor the definition it employs has changed in the last decades, they emphasise the widening and enhancing of consulting service, so that it is not narrowed to the traditional classical management consulting activity. They have recognised this alteration, and recently they do not define "management consulting" on their websites (ICMCI, FEACO, ASCO, 2012). In Table 1, we can see how FEACO defined the areas of management consulting services between 2000 and 2004 (FEACO, 2000, 2001, 2002, 2003, 2004).

FEACO segmented the management consulting market into five key service lines: Operations Management, Information Technology Consulting/IT Implementation, Corporate Strategy Services, Human Resources Management and Outsourcing Services. Corporate strategy services target improving the long-term strategic health of a company, while Operations Management consulting services target the improvement of the operational aspect of an organisation. IT consulting services target improving the way the client stores, retrieves, disseminates and utilises information, which is one of the most important resources in organisations nowadays. Human resources consulting services target improvements in the people element of an organisation. Outsourced services are activities that the client previously carried out within its normal structure and resources, but now chooses to contract out to a consultant or another service provider.

Table 1
Management Consulting Service Line of FEACO, 2000-2004

Corporate Strategy Services – Strategic Planning / Organisation Development – Mergers & Acquisitions – Market & Competitive Intelligence – Sales / Marketing / Corporate Communication – Financial Advisory – Other	Information Technology – IT Consulting – IT System Analysis, Design, Development & Integration – Other
Operations Management – Business Process Reengineering – Change Management – Customer / Supplier Relation Management – Project Management – Turnaround / Cost Reduction – Purchasing & Supply management – Other	Human Resources Management – HR Strategy & HR Marketing – Executive Coaching – Recruitment / Search & Selection – Benefits, Compensation & Retirement – Performance Measurement & Management – Training & Development – Talent Strategies – Other
Outsourcing	

In the last few decades management consulting has developed and changed considerably; it has widened and its complexity is growing continuously. In this new environment, "consultants have felt the need to stress that their field of activity is no longer management consulting (narrowly and rigidly defined), but business consulting (a wider concept and service portfolio) or consulting to management, consulting to business or organizational consulting (more open concepts permitting the service portfolio to be easily adjusted as opportunities and demands change)" (Kubr, 2002. p. 27). Although the Management Consultants Associations haven't changed their name or definition, but they emphasize the widening and development of the service. The meaning of management consulting is changing and widening; nowadays it can be interpreted as business consulting.

Taking into consideration new tendencies in the management consulting (MC) market, FEACO changed categories in 2005 (FEACO 2005) to those shown in Table 2.

Table 2
Management Consulting Service Line of FEACO, 2005

Business Consulting ⟹	Business Consulting – Strategy Consulting – Operation Management – Project Management – Change Management – Human Resources Consulting
IT Consulting	
Development and Systems Integration	
Outsourcing	
Other services	

Source: FEACO 2005

We see in the table that IT Consulting was divided into two categories:

- Information Technology Consulting (ITC) helps organisations to evaluate their IT strategies with the objective of aligning technology with the business process. These services include strategic planning and conceptions, operations and implementations.
- Development and Integration includes the development of applications (including software): the creation of new functionalities through, often tailored, processes developments. Usually these developments integrate or unite internal or external business processes and can involve a conversion of applications so that they can be used for different platforms or conceptions, and the design of services which integrate applications which were created in different existing IT applications or infrastructures (system integration -development).

The previous separately recorded "Strategy Consulting" and "Operation Management Consulting" both became part of "Business Consulting". Earlier "Project management" and "Change management" were part of "Operation Management Consulting", now they are recorded separately as a part of "Business Consulting"."Other services" is a new category: previously it was not recorded separately, rather as a part of other areas.

Permit me to remark that data before 2005 are not comparable directly with data after 2005. We can ensure comparability theoretically with the contraction of certain categories, but in practice comparability is not holistic. Comparing the FEACO Survey of the Management Consultancy Market in 2004 with that in 2005 we can see a "jump": for example the rate of IT Consulting in Hungary increased from 8% to 51% between 2004 and 2005. The reason for this is not a rise in the importance of IT Consulting, but that some activities – those previously recorded as either "Operation Management" or "Strategy Consulting" – are now classified as IT Consulting because of the change and detail of categories.

In the German-speaking countries "Unternehmensberatung" is used, which means "entrepreneurship consulting". BDU (Bundesverband Deutscher Unternehmensberater – Federal Association of German Management Consultants) translates "Unternehmensberatung" into "management consulting", emphasising that its interpretation is wider than classical management consulting and stressing its complexity. Management consulting, IT consulting, and Human Resources Consulting are the parts of Unternehmensberatung. The two divisions of management consulting are organisation and strategic consulting (BDU, 2006). The categories used by BDU are not directly comparable with the categories of FEACO. Interestingly BDU has recently returned to the earlier categories of FEACO (BDU 2009, 2012). Vogelsang calls management consulting "universal" consulting, and he also stresses the complexity of the service (Vogelsang 1992).

Though integrating the previous definitions and approaches and taking into account the basic characteristics and fundamental principles of management consulting the following definition can be made: Business consulting is an independent professional advisory service contracted for and provided to client organisations in order to add value: knowledge and other resources are used to increase effectiveness to achieve other business and organizational purposes. Business consultants assist in an objective and independent manner the client organisation to identify management problems and purposes, they perform the required surveys, analyses and evaluations, recommend solutions to fulfil the aims of the client organisation assist clients to identify and seize new opportunities and help, when requested, in the implementation of solutions.

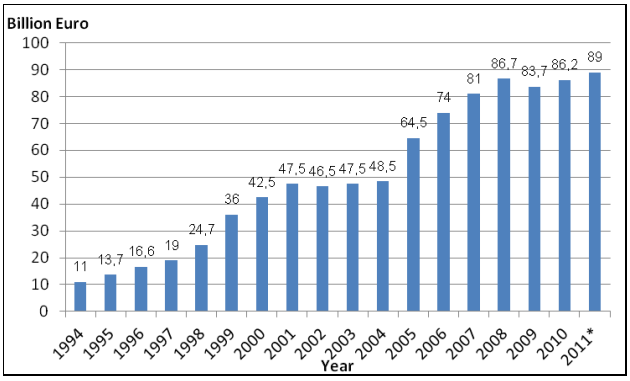
Briefly, in short: Business consulting is an independent, objective service, providing professional assistance in order to achieve business and organisational purposes.

In this article I use "management consulting" in its widened and complex meaning as a synonym of business consulting.

EUROPEAN AND HUNGARIAN MANAGEMENT CONSULTING MARKETS

After delineation of the complex definition of management consulting, I'd like to summarise tendencies in the European and Hungarian management consulting market based on the surveys of the European Federation of Management Consultancies Associations (FEACO) between 1998 and 2011. FEACO reports are considered to be representative, because the countries delivering data cover 80% of the total European management consulting market. Data were evaluated on a statistical basis, using data and variance analysis to prove the reliability of the results (FEACO, 2008-2012).

According to the international standards of FEACO, the areas of Business Consulting, IT Consulting, Development and Systems Integration, Outsourcing and Other Services are all included in Management Consulting. Between 1994 and 2011 the management consulting market in Europe grew at an average annual rate of 13%. For the first time in more than 25 years, consulting revenues decreased by 2% in 2002. The European consulting market makes up about 33% of the international consulting market (Gross and Poor 2008). Figure 1 shows the development of the European turnover in management consulting.



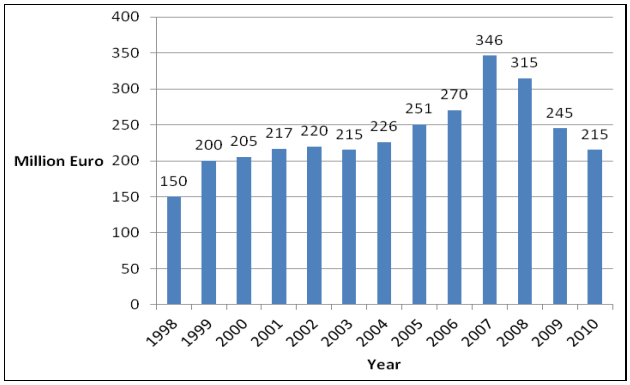
*estimated value
Source: FEACO 1998-2011

Figure 1. Size of the European MC market, 1994-2011

The European management consulting market went through some major changes and difficulties in the beginning of this century. It was influenced by currency pressures, global economic stagnation, the collapse of some industry sectors and a number of other effects, such as scandals, the growing number of consultants finding jobs by the recommendation of their earlier clients, the widening of clients' consulting knowledge. However, the annual growth rate went up to 2.1% in 2003, and the marketplace returned to the size it had been in 2001.The management consulting market in Europe has continued the upward trend of the previous years. After several years of incremental growth, the MC market experienced a slight decline in 2009, but it seemed to be only a temporary downfall: in 2010 the volume of the industry had almost reached its 2008 level. According to estimates, the MC sector is on target to beat the

record with an optimistic forecast of 89 billion Euros in 2011 (FEACO 2011). It should be mentioned that these years do not give a uniform picture of European countries. In 2010 the highest decline occurred in Hungary at -12% and in Greece -11.2%, while there are some countries that reported increases (for example Switzerland +5.6%, Germany 5.3%, France 5% and Portugal 4.8%).

Hungary makes up the 0.25% of the European management consulting market (215 million euro in 2010). Figure 2 shows the development of the Hungarian turnover in management consulting in million euro.



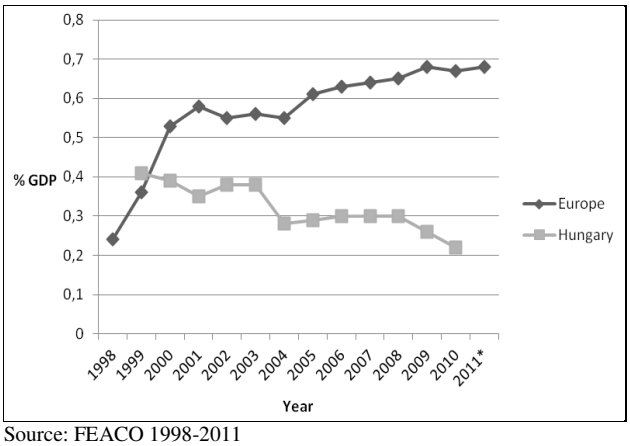
Source: FEACO 1998-2011

Figure 2. Size of the Hungarian MC market, 1998-2010

The Hungarian management consulting market followed the European trend between 1998 and 2007. In that period, the management consulting market in Hungary increased at an average annual growth rate of 9.7%. In 2003 consulting revenues decreased for the first time, by 2.27%. In 2008, the total turnover of the Hungarian MC market accounted for €315 million, which represents a 9% decrease in total turnover compared to 2007. Demand for most consulting services has fallen, due to the deep recession. The growth rate in 2009 was -22.2%. The total turnover of the Hungarian Management Consulting market was 215 million euros in 2010 (30 million euro less than in 2009) and the decline for the Hungarian MC market was -12%. Hungary predicted a -10% decline for 2010 in the previous year, thus revealing a realistic forecasting scheme. The anticipation for 2011 is more optimistic, with a growth rate of 2.5% projected for 2011 (FEACO, 2012).

One way of measuring the importance of the consulting industry in a country is by considering consulting revenues as a proportion of the Gross Domestic Product (GDP). The European average was 0.67% in 2010. According to the data of FEACO Germany is at the top with 1.13%, followed by the UK with 1.1%, Sweden with 0.95% and Spain with 0.93%. These countries were above the European average. Hungarian consulting revenues formed 0.27% of the GDP in 2010. The lowest was Poland with 0.09%. Figure 3 shows the development of the European and Hungarian management consulting revenues as a percentage of the GDP in the last 13 years.

The European management consulting market grew at a higher rate than the European Gross Domestic Product. The consulting intensity, measured as the contribution of the management consulting sector to the GDP, increased from 0.24% to 0.67% between 1998 and 2010. The intensity of the growth was different: at the turn of the century (1998-2001) it was very fast, partly because of the introduction of the euro in many countries. After the decline in 2002 the upward trend continued up to 2009. The MC market shows a 0.01 decrease from 2009 to 2010, which means no actual change. For 2011 results are expected to show a return to the 2009 level.

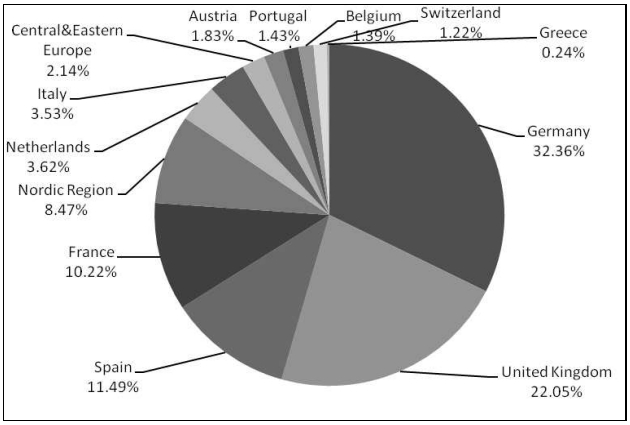


Source: FEACO 1998-2011

Figure 3. Management consulting as a percentage of GDP for Europe (1998-2011) and for Hungary (1999-2010)

In the end of the last century the management consulting revenue as a percentage of GDP for Hungary was above the European average. In the last 11 years it has decreased from 0.41% to 0.22%: the Hungarian GDP grew more than the Hungarian management consulting market. The reason for this can be the settling down of the Hungarian management consulting industry after the "heroic age" of the early nineties.

Figure 4 shows the European management consulting market composition by country / region for 2010.



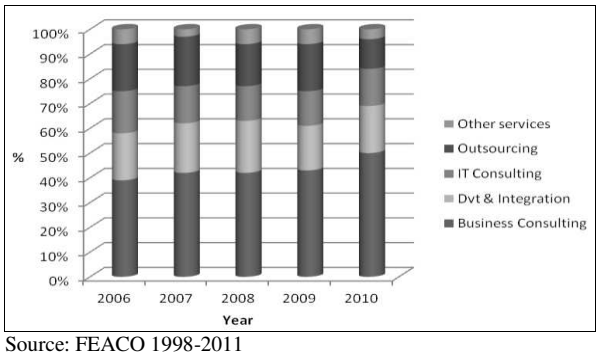
Source: FEACO 1998-2011

Figure 4. Composition of the European MC market by country/region, 2010

The turnover in management consulting was 27,900 million euro in Germany and 19,009 million euro in the United Kingdom. These two countries are the major markets in Europe, accounting for 54.4% of the whole European consulting market. Spain takes third place with 9,903 million euro (11.5%). Central and Eastern Europe accounts for only 2.14% of the whole European consulting market (2,000 million euro in 2010). The Hungarian turnover in management consulting was 215 million euro in 2010, making up about 11.4% of the Central and Eastern European market and 0.25% of the European market.

Figure 5 shows the spending on consulting services in Europe broken down by the percentage spent on key service lines between 2006 and 2010 (that is, using FEACO's revised categories).

Business Consulting is the most robust service line, having increased by 11 percentage points between 2006 and 2010. It now accounts for 50% of the European Management Consulting Market.



Source: FEACO 1998-2011

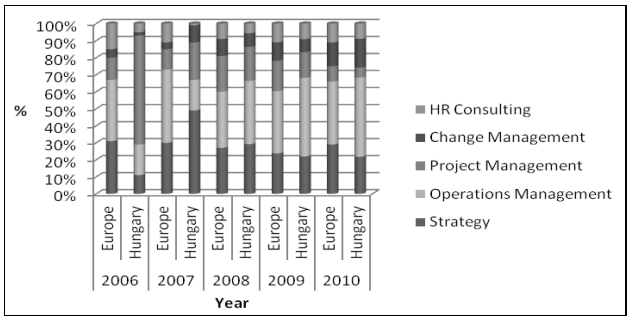
Figure 5. Distribution of the European MC market by service line, 2006-2010

IT consulting services are targeted at improving the way organisations store, retrieve, disseminate and utilise information. IT consulting and IT System Development and Integration are its key areas. At the turn of this century it was the most important consulting activity in Europe because of the fear of the effects of "the Year 2000" on computer systems and due to preparations for introducing the euro. After 2000 and the successful introduction of the euro its importance began to decrease, but it is still the second most important consulting area. Since FEACO divided IT Consulting into two categories in 2005, Development & Systems Integration has overtaken IT Consulting. The proportion of these IT categories together accounted for 34% in 2010.

The Outsourcing Service Line accounted for 19% in 2009 with a 7% decrease in 2010. Outsourced services are activities that the client previously carried out within its own company, with its own resources, but now chooses to contract out to a consultant. More and more business and management processes and functions are regarded as suitable for outsourcing, and many developments in IT focus on enlarging the scope and enhancing the efficiency of outsourcing. These developments cover issues such as reliability, confidentiality, speed of data transfer and worldwide access to business information. In larger IT and management consulting firms, outsourcing has become the fastest-growing area of service and an indispensable source of stable and long-term income (Gonda, 2005).

Other services consist of a variety of services provided by many Management Consulting Companies that are generally complementary to Consulting. Categories here include: Training, Engineering Consulting, Outplacement, Executive Selection and Recruitment, and Audit and Accounting. Other Services, already small, lost 2 percentage points and now its share stands at 4% (FEACO, 2012).

Figure 6 shows the breakdown of Business Consulting (BC) turnover in Europe and in Hungary, 2007-2010:



Source: FEACO 2007-2011

Figure 6. Breakdown of business consulting turnover by topic in Europe and in Hungary (%), 2007-2010

Organisation/Operations Management (OM) aims at the integration of business solutions through Business Process Reengineering (BPR), Customer/Supplier Relation Management (CRM), Turnaround/Cost Reduction, and Purchasing and Supply Management, as well as advice on outsourcing. While there was an unexpected decline in Organization/Operations Management turnover from 2007 to 2008 in Europe, this line of Business Consulting has begun to rise again (FEACO, 2010). The importance of consulting services targeted at improving the operational aspect of an organisation increased constantly and most dynamically in Hungary, growing from 18% to 47% between 2007 and 2010, which is much higher than the European rate (37% in 2010). Operations Management has been the most important area of Business Consulting in Europe and also in Hungary since 2008.

Strategic Planning Development, Mergers & Acquisitions, Sales, Marketing, Corporate Communication Financial Advisory and HR Strategy are included in Strategy Consulting (SC), which targets the improvement of the long-term strategic health of a company. The importance of this consulting area decreased in the beginning of this century up to 2009: organisations prefer to deal with their strategic affairs and solve their strategic problems inside their own company. Strategy increased its share of BC turnover from 24% to 29% in Europe in 2010. Corporate strategies have been the most important areas of business consulting in Hungary since 2007. Following the European trend, its importance has decreased continuously in the last four years, from 49% to 22%, and since 2009 it has been lower than the European average.

Project Management (PM) is described as "[t]he application of knowledge, skills, tools and techniques to a broad range of activities in order to meet the requirements of a particular project" (FEAO, 2011, p. 11). Only one line of Business Consulting declined from 2009 to 2010 in Europe and that was Project Management. It decreased continuously from 2008 to 2010 (form 21% to 9%). In accordance with the European trend, its importance decreased continuously also in Hungary in the last years (from 22% to 6%).

Change Management (CM) "consists of services which, on top of any other type of consulting service, help an organisation deal with the effects that change has on the human element of the organisation" (FEACO, 2009, p. 11). Compared to 2007 the market share of Change Management tripled in the year 2010. It increased constantly and most dynamically in Europe since 2007 to 2010 (from 4% to 14%). Similarly to the European trend, the importance of Change Management increased from 2008 to 2010 also in Hungary (from 8% to 17%).

Human Resources Consulting (HR) services are those which "target the improvement of the 'people' element of an organisation through performance measurement and management, reorganisation of benefits, compensations and retirement schemes, HR strategy and marketing, the development of talent strategies and executive coaching" (FEACO, 2011, p. 11). Analysing the breakdown of Business Consulting revenue, the most stable market share in Europe, at 11%, comes from Human Resources Consulting. In Hungary this rate increased from 1% to 9% from 2007 to 2010; this improvement was continuous, but this rate was 2 points lower than the European average in 2010.

TENDENCIES IN THE HUNGARIAN MANAGEMENT CONSULTING MARKET

The total turnover of the Hungarian management consulting market was 215 million euro (30 million euro less

than in 2009) and the change for the Hungarian MC market was –12% in 2010 (FEACO, 2011, p. 26).

In the private sector, demand for most consulting services has fallen, due to the deep recession. The growth rate in 2009 was -22.2% (FEACO, 2010. p. 28). Clients were committed to carrying out only projects of vital importance, in almost each case related to cost cutting and increasing efficiency. A lack of commitment to long-term development was the characteristic client behaviour in 2008 and 2009. In the public sector, spending on consulting became more cautious due to scandals (for example BKV scandal (Pénzes 2009)). Corruption cases cast a shadow on the profession. The only driver has been the availability of EU funding – though it can have only a limited impact on the profession (FEACO, 2009, p. 27).. According to their opinion the number of bunglers increased in the Hungarian consulting market. They can ruin the image of the professional consultants with their unethical behaviour. One solution can be to popularise the reputation of membership of VTMSZ (Association of Management Consultants in Hungary), which demands professionalism and ethical behaviour from its members.

The estimate for 2011 was more optimistic, with a growth rate of 2.5% projected for 2011 (FEACO, 2011, p. 26). There was a remarkable dominance of Business Consulting within Management Consulting (47%) in 2010. IT Consulting is quite strong in Hungary (36%) and in the United Kingdom (25.9%).

Small firms generate almost half of the total Hungarian MC turnover at 45%. They are followed by the major players, accounting for 32%, and by medium-sized firms, yielding 23% of total turnover (FEACO, 2009, p. 27).

CONCLUSION

There are two main approaches in the scientific literature of consulting: the first approach emphasises that consultants are helpers that help clients solve problems. The second approach views consulting as a special profession; this approach is adopted by professional associations and institutes of management consultants.

In the last decades management consulting has developed and changed, widening its scope and increasing its complexity continuously. The meaning of management consulting is changing and widening; nowadays it can be interpreted as business consulting. The classification of FEACO is accepted in many countries, enabling us to make international comparisons.

New tendencies in the management consultant (MC) market take into consideration FEACO's new categories, changed in 2005. Data before 2005 are thus not directly comparable with data after 2005. We can ensure comparability theoretically with contraction of certain categories, but in practice comparability is not holistic.

The European consulting market makes up about 33%of the global consulting market (Gross and Poór, 2008). For the last 10 years (2001-2011) the management consulting market in Europe has a grown at an average annual growth rate of 6.5%. It went through some major changes and difficulties in the beginning of this century, influenced by global economic stagnation, economic crises, the collapse of industry sectors and a number of other factors.

The annual study of FEACO which maps European management consultancy market also considers the distribution of management consulting turnover among countries. This enables us to compare the data of more-developed and less-developed countries. Applying correlation-analysis to GDP and management consultancy turnover, and to the GDP per capita on purchasing power parity as a share of EU-27 average and the revenue per consultant we can receive similar results: there is a strong, positive relationship between our variables ($r=0.888$, $p=0.00$). Based on the analysis of 24 European countries, a strong, positive correlation can be found between the application of management consulting services and the level of economic development.

The fluctuation of GDP in time and the revenue of consultants are in a strong, positive relationship according to the correlation analysis ($r=0.751$, $p=0.008$): Booms are beneficial for consultancy, more entrepreneurs can afford to hire consultants, contributing to their faster development; stagnation in the economy results in the stagnation of consultancy as well.

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Characteristics of Arable Land Valuation in Hungary

TAMÁS NÁNDOR TÓGYER
PH.D. STUDENT

e-mail: nandor.togyer@sodexo.com

SUMMARY

Since the transition, the different asset valuation methods have gained an increasing importance in agriculture. Land assessment has a high priority in agriculture, since it is the basis and an indispensable resource of the branch. Hungarian land prices are low, which is mainly due to two factors; the lack of land sales, and low farm incomes. Further issues to be addressed are what the old gold-crown system should be replaced with, and also if economic and ecological land evaluations should go together. In this context, it is also necessary to decide whether a uniform land valuation system has to be introduced, or whether the choice of a method suiting the purpose of valuation will always be the most effective.
Keywords: land market; Gold-crown system; yield calculation
Journal of Economic Literature (JEL) code: Q15

INTRODUCTION

Fundamentally, an economic management approach is used in this study to examine certain elements of land valuation. In course of the work, neither is a position taken nor are details given in connection with the current political events. They are simply mentioned. The only reason for mentioning them is that these events can significantly influence the domestic market price of the land. Furthermore, in the paper the purchase of land is investigated essentially by the help of a non-financing investment speculative approach, while farming and the management of land cultivation are regarded as the primary motivation for purchasing.

The problem of the economic evaluation of arable land is, although with varying intensity, a much-debated issue of agro-economic analyses. In the case of a normally functioning land market the price of land is governed by market conditions and the market price always develops in relation to these conditions. In countries, where there is not much buying or selling of land, the economic value of a parcel of land should be calculated. Some of the factors affecting the economic productivity of a piece of land depend on human intervention either to some extent or on a certain time horizon. Other factors are determined by the economic environment resulting from human influence on a permanent or a temporary basis. Therefore, all the results that can be related to the relative proportion and the unique standard of soil-related economic and ecological factors cannot be taken as pure ecological or economic dividends. The study presents certain elements of this complex problem.

THE FEATURES OF LAND MARKET AND THE MOTIVATIONS OF ITS ACTORS

Now, in the land market of Hungary - in spite of the recovery - the so called 'wait and see' strategy can be experienced. Many potential sellers are waiting for the prices to rise (speculating), while the willingness of customers to purchase is restricted by the lack of capital and the dilemma of ownership and leasing. Supply and demand trends are influenced by the quality of soil, accessibility and geographical location of a land, the branch of cultivation and many other factors. In addition, demand is controlled by a special law in Hungary, because The Land Act has excluded legal persons from land purchase since 1994. In a market economy, however, the possession of capital and financing are typically the strengths of companies, not of individuals.

There is an increased demand for lands of higher value in better-located, more-developed areas of the different counties, for lands of higher value. However, for lower quality or less-facing areas, around aging villages and end-of-road settlements as well as in remote areas, the lack of demand and oversupply are more characteristic. Besides these, neither the scattered, small (less than 1 ha) parcels of land, nor those where ownership is unresolved (undivided common property areas), are readily marketable.

There was only a partial restitution in Hungary: most of the region's earlier small farmers have already retired or died. The majority of their heirs found jobs in other sectors during the transformation of the economic regime and they have become city-dwellers since then. Many of them were not experts on farming and they did not even want to do it, unless unemployment forced them to. In this way, after the change of regime a layer of outside ownership was brought into existence by the greater part of the agrarian reforms. These owners however, are not willing to sell their land or their corporate share (Burgerné, 2003).

FROM THE GOLD-CROWN SYSTEM TO THE D-E-METER METHOD

The Gold-Crown System and its Problems

The introduction of an arable land evaluation system based on gold crowns was ordered by the Act VII in 1875, but solely for taxation purposes. The definition of a gold crown according to the law mentioned above is the following: "The ordinary net income of a land is the value of the average crop obtained from long-term farming minus the costs of farming." The per-year per-farm value of production and the costs of farming were calculated in the case of woods on the basis of a 25-year period of experience, in the case of grapes a 15-year period, and for other cultivation branches 10 years of experience. This value then was set in the current monetary unit, the gold crown.

This is the reason for the fact that the qualification of a land by its gold-crown value was its economic evaluation at the same time. The monetary unit was about the value of a parcel of land (yield). Although the gold crown is no longer a means of payment this method has become a part of today's economic

evaluation of land. The gold crown was actually a complex indicator that could show the quality of agricultural land, based on an evaluation of estimated costs and yields at the end of the nineteenth century.

An essential feature of the method is that besides the quality and productivity of the land it took into account the economic factors of the era's agricultural production (expenses, sales). The economic elements of the system have remained basically unchanged till today, despite the fact that the biggest changes have happened in the economic factors of agricultural production. This is exactly why the gold-crown system is mostly criticised.

Nevertheless, within an estimating area or village it still shows 'clear income differences' between lands. It must be obvious now that today's records are extremely outdated. The land classification based on one or two pieces of soil data was carried out about 150 years ago. These estimated soil data come from very rare sample areas revealed by every 130 to 150 hectare, and therefore they can represent the diverse soil covering only in traces (Dömsödi, 2010). However, it is still an important part of today's real estate records, and also of the determination of the Land Fund, because it expresses qualitative differences and the different productivity in different parts of the same parcel of land.

The Agricultural Habitat Assessment System

The new land evaluation process, called "hundred-points" in everyday speech, appeared in the 1970s. This method had been developed to replace the gold-crown system and it was based on the scientific knowledge of soil. The first such scholarly developed land evaluation (habitat and economic) methods were published in 1970.

At that time the widely-applied principle of habitat assessment was that the soil, topography, climate and hydrological factors had to be evaluated separately, and then by expressing their values together a habitat rating could be developed. By the help of this method a score was made for all genetic soil types. The maximum score possible was an ideal 100, from which deductions were made based on the differences between the topographic, climatic and other elements of land.

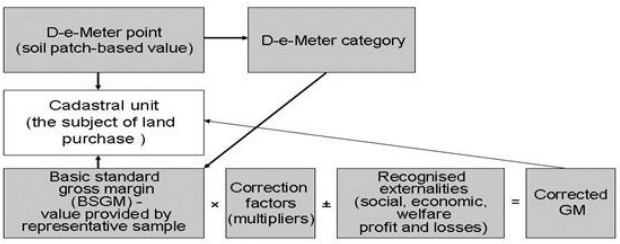
Since its introduction, however, it has been strongly suggested that this solution does not give the expected reliable results, because:

- it keeps both the faults of the gold-crown system and of those land evaluation districts (called 'becslőjárás').
- Data from soil sample areas do not meet the knowledge of soil
- A simple arithmetic average of data from the sample areas provides a false picture about the spatial distribution of land resources.
- The evaluation, carried out by branch of cultivation, incorporates hidden elements of economics (Lóczy, 2002).

The gold-crown system could have been replaced by a land evaluation method based on the scores of production sites, if a modern, scientific evaluation based on the determination of gross or net income per unit area had been created in economics. However, this has not happened so far, so at the change of regime, the gold-crown value system necessarily returned. The habitat assessment work has been halted; today it means a problem even to find the completed boards. In addition, the compensation process itself, which was actually the central program of agricultural transformation, was carried out based the values of the gold-crown system.

The D-e-METER Ecological Land Evaluation System and its Upgraded Versions

The current gold-crown system is not only out of date, but since the time it was created it has had a number of errors (as in the previous subsection). It has become necessary to introduce a new indicator, one that is not only a substitute for gold crowns but which, by promoting sustainable development can be an underlying parameter of land evaluation. D-e-METER is an ecological land evaluation system supported by an online GIS (geographic information system) modelling option, combined with the integrated developments of agriculture. The aim of the ecological land evaluation research was to develop a system that can detect differences in the production conditions of certain regions and show them in figures on the basis of environmental requirements of the major economic crop, the intensity of production and the risk inherent in climatic and geological factors. D-e-METER brings together the quality and fertility indicators of domestic soils in a single frame, plant by plant. The structure of the system provides maintenance for the stability of the value of soil indicators (Gaá et al., 2003).



Source: Szűcs et al. (2006)

Figure 1. The integrated system, which combines the D-e-Meter system with a complex economic land evaluation

The standard evaluation system is based on the D-e-Meter categories charged with economic substance (as is illustrated in Fig. 1). By this, the condition can be fulfilled that the ecological and economic endowments of a land (a parcel) should be handled and evaluated together while determining the economic value of the land. Charging with economic substance means to assign a so-called weighted, standard gross margin value to D-e-Meter point categories. Gross margin values are sets of sampling data. The accounting units of a given area are made up of arable crop production enterprises while monitoring units are made up of individual parcels. Therefore, the D-e-Meter system, by linking and integrating the economic, ecological, cartographic and computer scientific information into a specific booking system, allows an automated land evaluation procedure. In the course of calculating land prices, 'automatism' means that after that the lot number has been entered, the land value and land price belonging to that particular lot number will be displayed in the output of the system (Vinogradov, 2009).

THE ECONOMIC EVALUATION OF ARABLE LAND IN OUR COUNTRY

In the former socialist countries of Europe, land assessment previously was carried out in a calculative way, by means of different approximation methods and models. The reason for

this is that the land market did not work properly and real market prices could not develop.

Currently there are two statutory ways of economic land assessment:

- a comparative method (based on market differences),
- a yield-base calculation method.

Methods for determining market value are contained in Regulation 54/1997 (VII.1.) of the Ministry of Agriculture. The definition of credit security of urban real estate is contained in Regulation 25/1997 (VIII.1) of the Ministry of Finance.

The Market Comparative Method

This approach starts with the collection of data of earlier sold real estate situated in the neighbourhood of the land under investigation. In course of this process, as much data should be collected as possible, from at least three transactions. The market value of a particular piece of real estate can be determined by comparing the most important properties of various sites, creating average data and making individual adjustments. According to an important rule, only the same kind of areas can be compared (e.g.: plow with plow).

The steps of evaluation:

- Making a specific set point on the basis of previously collected transactions (average price per square meter [HUF/m2])
- Collecting unique, value-increasing factors, for instance: if proximity to the city is less than the average 4-5 km, or if an established driveway leads to the land. In such cases the value of the land can be increased by 1-2 percent. However, factors such as being located on a flat area, having a regular shape, being suitable for mechanical cultivation or having easy access to water can lead to arable land having a much higher value than that.
- Collecting depreciating factors, such as heavy vehicle traffic, air pollution, possible damage by wild animals, etc.
- Calculating the result given by the combination of value-increasing and value-decreasing factors (balance adjustment), and determining the market value of the land by multiplying the area with the balance adjustment and the specific set point.

When using this method, the goal is to learn the actual market prices of the areas that have similar characteristics to those of the land in question. As a past decades a real land market has not developed in Hungary in the past few decades, probability of the reliable application of this method is rather small for the time being.

The Yield-base Calculation Method

The Hungarian Agricultural Research Institute has developed a practical method, in which the income is determined on the basis of the current system of land evaluation (gold crown), and the rental value is also involved in the calculation. This method is based on the current land evaluation system. Despite some reasonable criticisms, the correlation calculations have justified that the 'gold crown' still reflects approximate differences in the quality of lands. This is exactly why this system is appropriate (after certain corrections) to create a basis for a monetary evaluation system. The yield-base assessment derives the value of land from the difference between its future benefits and its costs. This kind of arable land evaluation must be carried out in accordance with Regulation 54/1997 (VIII.1) of the Ministry of Agriculture. Another thing that suggests the applicability of gold-crown system is that the current land lease system is built on the 'gold crown', as the rental fee of a land is defined in the price of wheat (per kg) paid for a 'gold crown'. In order to facilitate the application of the method, the result of a comprehensive investigation is available. Its records of it provide a review of the development of the average Hungarian income of land between 1980 and 1990, and also determine the value of wheat (per kg) equivalent of one gold crown, by county and by each cultivation branch.

The formula used for determining the market value based on yield calculation

$$MVL = \frac{(P_j + B) \cdot p}{2 \cdot i} \cdot (1 + k)$$

where,

MVL = market value of land (HUF)

Pj = yield (kg wheat) calculated from the multiplication of the annual income of land (kg wheat / GC (gold-crown)), and the gold-crown value of the assessed property).

B = yield (kg wheat) calculated from the multiplication of rent considered characteristic of the immediate surroundings of the land (kg wheat / GC), and the gold-crown value of the assessed property (kg wheat)

p = the average domestic stock market price of wheat (HUF/kg) established in the year before evaluation

I = capitalization rate (%/100)

k = the correction factor (%/100) used to modify the calculated market value of the land within consolidated criteria.

The criteria, and the recommended threshold figures used for determining the correction factor *k* must be expressed in percentages. Having been calculated in accordance with the above formula, the market value of a land (default value) should be corrected on the basis of known criteria. The effect that each individual criterion has on market value must be expressed in percentages, the summed-up value of which is equal to the correction factor k (Mizseiné, 2009).

The interpretation and problematic issues of the data contained in the calculation formula:

- According to the regulation referred to, the annuity income *Pj* should be set by the MA. In the absence of that, an average value determined by Szucs et al is used in practice, though it cannot reflect the actual income situations (Szucs, 1998).
- The *B* lease should be determined on the basis of information gathered from the larger tenants operating in the neighborhoods of the land in question. In this case, the problem of long-term lease contracts arises, where the value determined earlier is likely to remain well below the current value considered as realistic, for a long time. Therefore, it would be advisable to apply only the values of recently concluded lease contracts.
- There is not an established methodology for determining the *p*. The legitimate claim of many valuators is that if over the years there is a significant change in stock prices, its must be followed by the value of the land as well. So, the average of 3-5 years would be appropriate to be taken into consideration.
- According to regulation, the capitalization rate *i* should be set by credit institutions. Since the rate of interest varies according to credit institutions, a distortion is caused in the

calculation. Therefore, as a result of diversity, its exact content is undetermined.

➢ The correction factor *k* can change its default value to the following extent: (*k*.min = -0.8 and *k*.max = 2.5).

Knowing all this, we can conclude that apart from the correction factor in the formula, further modifications or clarifications must be taken into consideration in order to be able to estimate an approximately fair value.

THE YIELD-BASED ESTIMATION OF LAND VALUE (LAND PRICE) BY THE ECONOMIC APPROACH

It is clear from what is written above that the quality of soil can basically influence the result or efficiency of all agricultural activities. So, one can say that companies are primarily differentiated by the soil quality of land, which, according to the economic approach, can be determined as the income producing ability of arable land expressed in figures.

Through the eyes of an economist, the economic value quantifies and expresses (by the actual instrument of payment, HUF) the ecological quality of land as well.

The Yield Calculation-based Value Estimation Method

Both in the literature and in practice (especially in the developed European countries), widely used formulas and methods are applied to estimate and determine the price or value of arable land in some calculative way.

Here this paper provides an overview of a land estimation process that is based on yield calculation. The reason for this is that its application is not too complicated; expert knowledge is not required. Moreover, the data used in the method are up to date, not fed by gold-crown system sources. Values are provided by the capitalization of the calculated income.

$$LV = \frac{LI}{i}$$

where:

LV land value (HUF/ha)

LI land income (HUF/ha)

i capitalization rate

For the sake of clarity and in order to draw valid conclusions after analyzing the computed data, a great emphasis should be placed on the following.

Many pieces of information should be gathered in order to determine land income. These are shown in Table 1.

The next element, the determination of which has a special importance, is the capitalization rate method. Unfortunately, the precise content of the method is not detailed in the calculating formula included by MA Regulation 54/1997 (VIII.1). This is the reason why I worked in the theoretical context of a calculative rate (i = ih + iv). This is used to determine the economic content of the capitalization rate, while calculating the economic profitability of an investment (Illés 2002).

In this way the starting point of determining the capitalization rate is the reference yield of risk-free investments, namely the long-term government securities. Actually, in the first quarter of 2012 this was fluctuating between 8-9 percent[1] .After that a risk premium[2] should be given to it, which is known as the ß factor in the literature.

Table 1
The outcome categories used to determine land income (LI)

Denomination	Contents	Problems with the application of LV formula
EBITDA	The amount of operating profit and amortization	It is suitable for LV calculation
Operating profit	Revenues minus: - Material costs - Personal expenses - Depreciation and amortization - Other expenses	It is not suitable for LV calculation, due to: - Uncertainty in the yearly distribution of amortization costs - The long-term investments (melioration, drainage, etc.) significantly increase the quality and value of a piece of land, and they revalue it. Therefore, the buyer is rightly expected to compensate for it. The new landowner will enjoy the benefits of these long-term interventions, even if he changes the branch of cultivation.
EBIT	The same as operating profit	Not suitable for LV calculation. (for similar reasons as the operating profit).
Net Income	Revenues minus: - Material costs - Personal expenses - Other expenses.	Suitable for LV calculation

Source: The author's editing

Table 2
The elements of the capitalization rate used to determine the value of arable land

Denomination	Value (%)
Market reference yield of government securities	8.5
Macroeconomic risk	1.5
Market risk	2.0
Drought, flood etc. risk	1.0
Total	13.0

Source: The author's calculations and editing

Table 3 shows the internal structure of the calculative interest rate from a management approach and it also provides information for the farmer (whether it is a large agricultural company or a family working on the land) about what yield to expect in another branch of the same risk sector. Based on this consideration, the farmer can decide how much the real market price of his land is, and estimate how much risk he can take. Just as I have presented it in the previous sections, in the course of determining the price of a piece of land, results should be kept under permanent review. They should be re-estimated and fitted to the current agricultural policy and market conditions.

Such a high level of interest rate for capitalization (13 percent) would result in very low land prices. From the investors' point of view, a 13 percent gain cannot be considered an unrealistic expectation, regarding Western European context data and the risks described. Therefore, further investigation into the value of each capitalization rate category is necessary (as for current information, trends), and they should be included accordingly. Because of the special features related to land assessment and land price, agricultural valuers and experts apply a capitalization rate between 4.5 and 6.5 percent.

[1] *Based on data of the Public Debt Management Agency.*

[2] *The risk premium (ß factor) and the rate of the categories used to estimate it were determined on my own. The number of these categories may rise and fall, and their rates can vary as well. This change can always be influenced by the location and size of the land, macro-and micro-economic conditions, weather, supply and demand trends, and many other factors.*

Table 3
The yield trends of bank interest and lease charges between 2007 and 2013 (in the case of a 350, 000 HUF/ha investment)

Year (Data listed in %)	2007	2008	2009	2010	2011	2012	2013
Bank interest rate	8.0	8.0	6.0	5.8	4.0	4.0	3.0
Yield of Lease	7.5	8.0	9.0	10.0	10.2	10.2	10.4

Source: Author's editing, based on the data of Tisza Cash Zrt and Kardos (2009).

Tisza Cash Inc. has dealt with land trade, intermediation and related services since 1998. Its profile is unique in the country, and it is a major player of the market. The company considers the Hungarian land as suitable for investment and promises a promising yield. On the basis of experience of many years, their medium and long term annualized rate of the expected yield is around 20-30 percent. The explanation of this is that the land doubles its value in every 3-4 years, or leasing arrangements provide constant revenue, which is 3-6 percent per a fixed amount per year, tax free.

It is not easy to determine the correct capitalization rate, because it may be done only after a thorough consideration of several factors. These are for example the motive of the purchase, the current supply-demand situation, the agro-economic policies the potential domestic and EU funds, etc. In addition, a further review is needed to find out the ratio of the created capitalization rate and the land income, and also to see how it fits in with the domestic market conditions.

When the above estimates are done, the value of a piece of land can be easily estimated by yield-based calculation. This can be summarized briefly in four steps:

- The first step in yield calculation is a land-use analysis. In course of the analysis tests are carried out to find out in advance what economic impacts can be expected in case of solutions different from those of today.
- The second step is making an income statement. It is an estimation of future revenues and expenditures. The accounting information available may provide a good basis for estimation, however; it cannot be a substitute for calculations specific to the case.
- The third step is estimating payment plans.
- In the fourth step, the capitalization rate should be determined.

Key Aspects of Land Purchase and Certain Discretionary Aspects of Purchase Price

In the economic approach, yields are examined from the point of current prices and costs, and the income-producing ability of a land should always be determined. In this way, the production efficiency of an arable land is being analyzed in given market conditions, since the evolution of land resulting in different levels of costs is of the greatest interests for anyone. So, the effort of land owners and land managers to increase the fertility of their land is fully understandable. There are basically two ways of doing it.

In the first, the so-called 'working capital-related interventions' are carried out from time to time. It is typical that these are repeated every year, like fertilization. In this case, the intervention can be assessed from a yearly perspective and its costs-yields relations should be examined on an annual scale.

The other option is when 'fixed asset type' long-term interventions are performed. These can be for instance melioration activities, such as land reclamation, drainage, etc. However, these are really costly expenditures, for which payback cannot be expected after a year of farming. Therefore, calculations are performed for several years in connection with return on the intervention, while actually treating it as an investment.

It is natural, and should never be ignored, that lands of different quality respond differently to the same input. The level of expenditures is related to land quality as well. Thus, it has to be decided how long it is worth increasing the level of spending for different land quality. This actually can always be determined by the comparison of marginal revenue and marginal cost of the land.[3]

Depending on soil quality the relation of marginal revenue and marginal cost can develop in a different way. In the case of land of good quality, costs can be increased, and the two values will meet at a relatively high spending level. (Beyond this level, however, the manufacturing cost of the product will be higher than the price at which it may be sold) In the case of land of poorer quality, expenditures must be reduced, because the point mentioned above occurs at a much lower spending level.

In accordance with the current price and cost conditions however, the maximum level of spending needs to be reassessed from time to time. If the price of the product (that is, the marginal revenue) is increasing, costs can be increased even in case of a poorer quality land and the two values will meet later. However, if the price of the product declines, this should result in the reduction of spending in the case of good-quality lands as well. Expenses can be reduced for a while, of course, but revenues continue to steadily decline in the long run, the farmer should consider a possible change to the branch of cultivation.

It cannot be overemphasized that the buyer should be very careful while purchasing. He should not rush to buy because in the long run this will fundamentally influence the results of the economic management of the land. If a land purchase seems to be too risky in any respects, it is better to cover the land needs of the enterprise by renting.

CONCLUSION

Throughout two decades of the domestic market-economy, Hungary has not been able to prepare for the liberation of land. However, on 20 December 2010, the European Committee permitted the lengthening of the Moratorium on arable land purchase in Hungary, till 30 April 2014. One of the most important reasons for this is that the inequality in price between Western European and Hungarian land has not been eliminated.

Clearly, it is not an easy task to determine how much the "market" price of land should be in Hungary. Besides complexity, which actually means that ecological and economic aspects should be considered and evaluated in an equal way and also while estimating the price of land, further problems such as the immature land market (detailed above) and the already described shortcomings of the gold-crown system, have arisen.

If the two systems - the ecological and the economic land evaluation – are so cumbersome to create together, to operate and continuously keet up to date, perhaps we had better

[3] *The evolution of marginal cost after a certain level of production shows an increase, which means that the production of an additional unit of goods is more and more expensive, while the value of the marginal revenue is constant. This is because of the fact that in most cases the product that was first to be manufactured can be sold at the same price as the last one. In addition, this kind of development of marginal cost is consistent with the 'diminishing returns theory', that is, by a linear increase of expenses; yields start gradually decreasing after that a certain yield level has been reached.*

conclude that it is not realistic for such a system to be brought into existence, and instead merge the figures of the two method too - is that the experts of the two disciplines (soil science and economics) do not always accept the results and methods of the other branch of science.

I do not think it is likely that a single land evaluation method is always the most appropriate. In my view the method

In order to resolve inequalities between the Hungarian and Western European land prices, primarily those farmers should be granted land by a market-based allocation that do not intend to speculate on the land, but who would like to cultivate it and make a living out of it. Thus, the income producing potential of land is likely to increase, which will probably contribute to the

disciplines. An even more difficult problem - and probably the cause of the failure of the so-called 100-point land evaluation should be made conditional upon the purpose of evaluation and the results should also be assessed and used on this basis. There is no uniform land evaluation system even in the most developed European countries. The methods used there are determined by the countries and their goals.

convergence of the market price of domestic land with the level of land prices in Western Europe. If this process is carried out successfully, land valuation disputes extending over several decades, calculation differences and estimation difficulties will also be resolved, or will completely disappear.

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