Közgazdász Fórum
Forum on Economics and Business
22(141), 3–11.
2019/4

Corporate strategy and competitiveness in a knowledge-based economy

IVÁN BÉLYÁCZ[1]

Nowadays, we live in a knowledge-based economy. The focal point of the term 'knowledge-based economy' is the greater reliance on intellectual capabilities than on physical inputs or natural resources. That is why innovation provides firms with a strategic orientation to overcome the difficulties they encounter while striving to achieve a sustainable competitive advantage. The strategy that governs the innovation process within a company is called the innovation strategy. It gives guidance on the allocation of resources in order to achieve the previously set goals. All these mean that innovation is considered to be one of the most important factors determining competitive advantage. Researchers can be divided into two main groups. Some of them consider that the concept of competitiveness mostly relates to firms and products. Others find that national competitiveness is a significant determinant of firms' overall competitiveness and they analyse it from a sectoral viewpoint. Continuous growth in productivity over a longer period of time should be the top goal of economic policy. For achieving all this, a knowledge generation encouraging the business environment is needed to foster constant innovation in products, services, processes and management.

Keywords: innovation, knowledge, innovation strategy, competitiveness, productivity, new economy.

JEL codes: D83, J24, O31.

Introduction

Knowledge generation and innovation have been cited as some of the key factors behind economic success. As a consequence of increasing competition in the global markets, companies have realised the importance of innovation since fast-changing technologies and harsh global competition quickly erode the value added of existing products and services. Innovation has become a necessary and compulsory part of corporate strategy for several reasons. It is crucial for the implementation of more productive manufacturing processes, for gaining a better market position and achieving a more positive reputation among customers, all of which lead to a sustainable competitive advantage.

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Publishers: Hungarian Economists' Society from Romania, Department of Economics and Business Administration in Hungarian Language at Babeș–Bolyai University, and the Partium Christian University
ISSN: 1582-1986 www.econ.ubbcluj.ro/kozgazdaszforum

Innovation strategy in a nutshell

One of the most widely cited definitions of strategy is constructed by Pisano (2015). According to him, "a strategy is nothing more than a commitment to a set of coherent, mutually reinforcing policies of behaviours aimed at achieving a specific competitive goal" (Pisano 2015. 46). Well-developed strategies encourage the smooth operation of the different functional areas within the organisation, they set clear goals and concentrate resources and efforts to reach them. It is crucial for companies to pay attention to identifying their general business strategy and describing how the different functional areas help reach it (Pisano 2015).

Two types of firms can be distinguished. Cumulative firms adopt an innovative strategy that is based on an internal learning process with different searching methods, while non-cumulative firms adopt a strategy focused on external sources of knowledge (Llerna–Oltra 2000).

An innovative strategy leads to competitive advantage. Competitive advantage can be analysed at macro and micro levels. Michael Porter states that "the only meaningful concept of competitiveness at the national level is productivity" (Porter 1998. 160). The World Economic Forum makes an addition to this definition, namely that competitiveness is "the set of institutions, policies and factors that determine the level of productivity of a country" (Schwab 2009. 4). In other words, the more competitive an economy is, the higher the levels of income it can produce for its inhabitants. The productivity level also defines the rates of return achieved by investments in a given economy. An economy is considered to be competitive if it has a trade surplus, few import barriers and limited "discounts" for exporters. As Atkinson (2013. 3) clearly expresses, "the true definition of competitiveness is the ability of a region to export more in value added terms".

At micro level, innovation is considered a method of reaching competitive advantage. Managers should articulate an innovation strategy that stipulates how their firm's innovation efforts will support the overall business strategy. This will help them to make trade-off decisions so that they can choose the most appropriate practices and a set of overarching innovation priorities that are in line with all functions. Creating an innovation strategy involves determining how innovation will create value for potential customers, how the company will capture the value and what type of innovation to pursue. When creating an innovation strategy, companies have a choice about how much focus is placed on technological innovation, product innovation, organisational or marketing innovation as well as on business model innovation.

The importance of innovation

The most frequently used definition of innovation is designed by the OECD, according to which "an innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations" (OECD 2005. 46).

However, even when innovation is defined properly, it is often confused with competitiveness and/or productivity. While innovation is related to productivity, it is not synonymous with competitiveness. There are many types of innovations that have little to do with productivity and competitiveness.

$$Output/Unit\ of\ Input = Productivity \quad (1)$$

Productivity is the ratio of economic output to the unit of input. The unit of input comprises labour hours (labour productivity) or all production factors, including labour, machines and energy (total factor of productivity).

To be able to understand the sources of productivity, it is important to recognise that economies have three ways to grow in the medium and long terms. These are the growth in:

– Workers,

– Productivity across the board, and

– The share of activity in high-productivity industries.

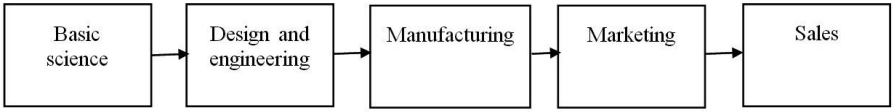
A shift effect occurs when high-productivity industries grow faster than low-productivity industries. The lion's share of productivity in most nations comes not from the shifting of the sectoral mix to higher productivity industries, but from all branches. Industries, even low-productivity ones, are boosting their productivity (Miller–Atkinson 2014). Nations need well-articulated and distinct strategies addressing competitiveness, innovation and productivity. No one strategy addresses all three factors effectively (Manyika et al. 2010).

The essential outcome of entrepreneurship is innovation or its transformation into a new product that can be sold to a sizeable market (Schumpeter 1934). Schumpeter focuses on the typical European economic structure of the late nineteenth century when new entrepreneurs entered the industry with new ideas, new products and new processes. Radical or breakthrough changes result in new and fundamentally changed products and services. Incremental improvements add to or sustain their value. Radical and breakthrough modifications contribute to new or fundamentally transformed business and management processes and

practices. Incremental improvements enhance the efficiency and effectiveness of existing business and management processes and practices.

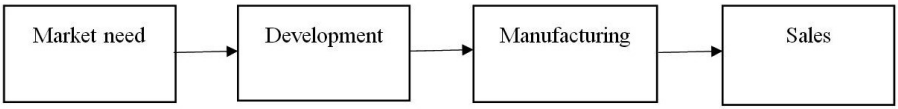
Lam (2005) defines innovation as a capacity to respond to changes in the external environment, and organisational innovation as the creation or adoption of an idea or behaviour new to the organisation. All these mean that "the most fundamental resource in the modern economy is knowledge and, accordingly, the most important process is learning" (Lundvall 1992. 1).

Enterprises significantly differ in their approach to innovation and that is why there is no single model of innovation process. The linear model can be mentioned as the first model of innovation. Here, we can distinguish two types. The main essence of the science-push linear model (Figure 1) is that basic research constitutes the main source of innovation. On the other hand, in the case of the market-pull linear model, innovation originates from demand (Figure 2).



Source: Rothwell 1995. 36

Figure 1. Science-push linear model



Source: Rothwell 1995. 36

Figure 2. Market-pull linear model

The importance of knowledge in the new economy

The new economy discourse emphasises the productivity-enhancing effects of information and communication technologies (ICTs). The other side of the new economy discourse refers to a new family of firms whose characteristics are assumed to signal the future. These firms are typically producing Internet services or other advanced knowledge-intensive products and services (Lundvall 2004). Those firms that introduced ICTs without combining them with investments in the training of employees, management changes and changes in the work organisation had a negative effect on productivity growth, which lasted for several

years (Lund–Gjerding 1996). Paradoxically, it may be argued that, as long as the economy remains new, it will be much more difficult to obtain productivity growth than in an old economy. In the OECD countries, the highest rate of productivity growth ever was registered in the 1960s when the OECD economies had already moved far ahead on the Fordist scale intensive trajectory. The very maturity of the technologies used made the rapid growth of productivity possible. The fact that, in recent years, high productivity rates have been registered predominantly within ICT-producing sectors reflects that, for these sectors, information and communication technologies do not represent a new paradigm, but an old and well-established one. This is one reason why it is adequate to call the current era a "learning economy" (Lundvall–Johnson 1994. 23). It is worth noting that the divergence between dynamic firms and static firms is modest to begin with, but it keeps growing as time goes by. This might reflect that the radical change in technology and organisation has a positive impact on performance only after a period of organisational learning. In the current situation, it might be useful to start thinking about a new kind of Keynesianism, where public expenditures aim at upgrading human resources and promoting organisational change.

Knowledge-producing institutions like universities have the potential to stimulate growth. Often, the analysis of universities' knowledge potentials is strictly related to the utility of research and research spin-offs. Research certainly shows potential in terms of utility and entrepreneurship, but it is not the only important source of knowledge for learning and innovation in the relations between university and enterprises.

Productivity is a measure of value added in the production of goods and services. In this way, it can be understood as an indicator of added-up efficiency in applying tangible and intangible assets in production processes at enterprise level. One important driver of productivity growth is the ability of the firms active in a specific area to apply new knowledge and innovate. Product innovation and process innovation are considered productivity enhancers. Innovations are results of learning relations and new knowledge is materialised into products or processes. The knowledge foundation of innovation makes it interesting to study the learning relations between knowledge-producing institutions, like universities and enterprises.

Research and development are certainly important for product innovation, but they are not the only forms of knowledge, as their importance was previously

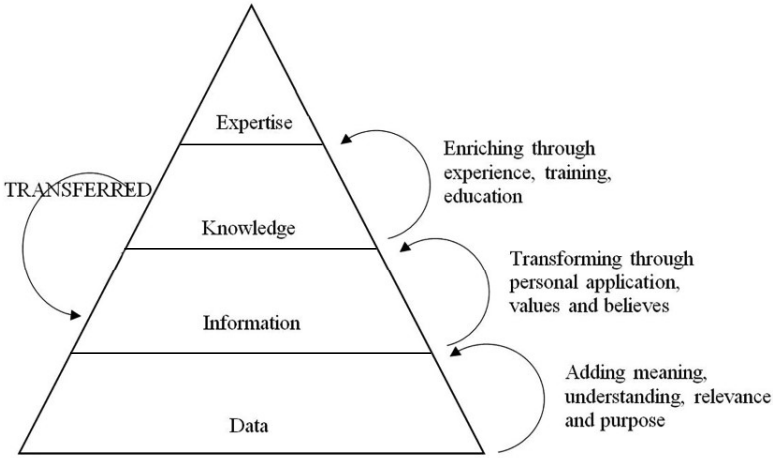
indicated for product and process innovation, too. Other more experience-based or empirical learning forms may play important roles both in the knowledge portfolios of universities and as sources of innovation in enterprises and entrepreneurship.

Often, research is an institutional embedded, collective and path-dependent process. Research knowledge, which eventually becomes formalised, systematic and verified as scientific knowledge, can be more or less basic and abstract or operational and ready for transformation to practical purposes (Dallango–Tortia 2019). Scientific knowledge is typically used as the cognitive substance of learning in linear innovation processes, which is tested and verified as the basis of product or service innovations. Even though it is difficult to assess the competitive advantage of firms that are product or service innovative, it can be expected that the market novelty of the innovation will bring more advantages to enterprises.

With the emergence of the so-called "knowledge economy", knowledge has become one of the most fashionable terms in the political and managerial spheres. As Weiler (2001. 36) states, "the politics of knowledge become less and less separable from the politics of production and profit, arguably the most powerful political dynamics in today's world". According to Halal (1997. 2), knowledge has a crucial role in a new way of seeing the organisation, "we see now that knowledge is the most strategic asset in enterprise, the source of creativity, innovation and economic value". Knowledge management is considered to be a vital aspect of the so-called "knowledge economy" and, hence, it has a strong influence on innovative practices. Figure 3 shows the classical hierarchical positions of the concept (Bender–Fish 2000). Data constitute the bricks from which the pyramid of knowledge is built.

If we wanted to determine data in managerial terms, we could because they are available without many restrictions in the knowledge society, on the Internet, in databases and in daily activities (Villalba 2007). On the other hand, Bender and Fish (2000. 126) pointed out that "data will become information only when they have been permeated with meaning, understanding, relevance and purpose."

Martensson (2000. 208) distinguished between general information and contextual information. According to him, general information consists of data that are organised and structured, whereas "contextual information is created by filtering and organising general information to meet the requirements of a specific community of users".



Source: Bender–Fish 2000. 126

Figure 3. Knowledge hierarchy

Information is converted into knowledge when an individual person processes and internalises it. New information has to be incorporated into the individual's existing knowledge structure in order to generate learning. Finally, if somebody masters a certain subject or area of knowledge, he or she will become an expert.

Sveiby (1997) makes a clear distinction between tacit and focal knowledge. Focal knowledge is knowledge of a specific thing, while tacit knowledge is the knowledge that is used as a tool to handle what is being focused on (Sveiby 1997. 30). Tacit knowledge is only possessed by individuals; it is not public but private. It belongs to the given person and only he or she can fully use it (Leonard–Sensiper 1998). Wiig (1993) distinguished between tacit and explicit knowledge, which refers to the internal and external knowledge base.

Using the distinctions between tacit and explicit knowledge, two different approaches can be mentioned. According to the first approach, knowledge and information are considered to be not identical but interchangeable. Knowledge can be transformed into information and every piece of knowledge can be made explicit. The second approach states that knowledge cannot be totally explicit as there is always a subjective and individual component. O'Connor and Carr (1982. 61) used other terms, the "know what" and the "know how" knowledge. The first one refers to "knowing that the proposition is true" and the second one

to "knowing how to do something". Understanding the nature of knowledge and innovation is important to make the right decision in the highly competitive knowledge economy.

Summary and suggestions for policymakers

To conclude, it must be clearly stated that some steps that reduce a firm's short-term costs actually work against its true competitiveness. At national level, a weaker currency makes imports more expensive and discounts the price of exports. This is essentially a national pay cut. A nation's competitiveness hinges on its long-term productivity, which is the value of goods and services produced per unit of human, capital and natural resources. Only by improving their ability to transform inputs into valuable products and services can companies prosper in a given country.

Increasing productivity in the long run should be the central goal of economic policy. This requires a business environment that supports continuous innovation in products, processes and management. Governments commonly play an important role by temporarily increasing outlays to soften the impact of recession. Such moves may improve company performance in the short run, but they typically don't improve the fundamental drivers of productivity and, therefore, cannot improve company performance in the long run.

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Közgazdász Fórum
Forum on Economics and Business
22(141), 12–24.
2019/4

Perception of well-run companies: Opinions of master's-level business students from Hungary

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Defining the well-run company requires a comprehensive approach considering the general acceptance of the stakeholder theory. The ASPEN Institute prepared a survey to explore the main characteristics of well-run companies. The results among MBA students show that, beyond attracting and retaining exceptional people, customer orientation and quality are considered the most important factors, while strategic issues and social responsibility are less important. Comparing the results to former international surveys, the sample of Hungarian master's-level business students shows local characteristics. Based on the responses of 471 students, the statistical analysis indicates that being a stable employer and effective, flexible operations are more essential than in other samples. The analysis of variance pointed out a significant difference between full-time and part-time student reviews. The latter group evaluated strategic and social issues as being more important, and their opinions are closer to the professional concept of management. The results can be used to develop more effective content for learning materials in the field.

Keywords: well-run company, ASPEN survey, management education, student reviews, leadership.

JEL codes: C14, M14, M29.

Introduction

Beyond the fundamental task of providing products and services, companies have a broader social role and responsibility. Carroll (2016) differentiates economic, legal, ethical and philanthropic levels of responsibility. In a simple approach, the responsibility may cover providing job opportunities, contribution to the local, national and international economy, collaboration with others for environmental protection, local problem solving and other issues. The main challenge of companies remains, but the appearance of the expectations may be transformed with time. Based on the stakeholder theory (Freeman 2013), success can be interpreted as the satisfaction of the stakeholders.

If companies are the building stones of national economies, we can consider well-run companies as the bricks of the headwall. According to this metaphor, exploring both the characteristics and expectations is a key issue in the interest of development.

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Publishers: Hungarian Economists' Society from Romania, Department of Economics and Business Administration in Hungarian Language at Babeş–Bolyai University, and the Partium Christian University
ISSN: 1582-1986 www.econ.ubbcluj.ro/kozgazdaszforum

This study deals with the attitudes of master's-level business students to the nature of a well-run company. The analysis aims to explore the order of a set of characteristics as well as the differences in respondents' opinions.

The concept of well-run companies

A well-run company adds value to both customers and shareholders (Chikán 2003). Its performance can be measured by financial or management indicators based on 'hard' indicators, or it can be evaluated in relative terms by comparing it with competitors' performance. Based on such evaluations, strategic challenges can be determined (see, e.g., Armstrong–Brodie 1994; Slack 1994; Szász et al. 2014). Nevertheless, a 'soft' approach is applicable.

Special attention was paid to well-run companies in the 1980s. The economic growth of Japan and Europe (primarily Germany) reorganised international trade and put the US economy in an unpleasant situation (Tenner–DeToro 1995). Researchers realised that a radical change in management methods was inevitable. Garvin (1988) investigated the role of quality as a strategic factor. Besides the reconsideration of the quality concept (Berényi 2017), cultural factors have become the focus of interest (Kotter–Heskett 1992). The soft elements of the 7S model (Waterman et al. 1980) draw up the pattern of success by using internal (company-level) factors. The book entitled 'In Search of Excellence' by Peters and Waterman (1984) collects case studies of the best-run US companies and sets them as an example to the economy. Staff, motivation, open-minded management style and long-term thinking can be highlighted as success factors. The quality-oriented management approach offers great development opportunities and responds to the Japanese challenge through improved product quality and the recognition of customer needs. This purpose also includes the birth of lean management (Womack et al. 2007), with controlled processes and production costs. It is noted that lean management first and foremost requires a change of leadership attitude (Gelei et al. 2015; Demeter–Losonczi 2019).

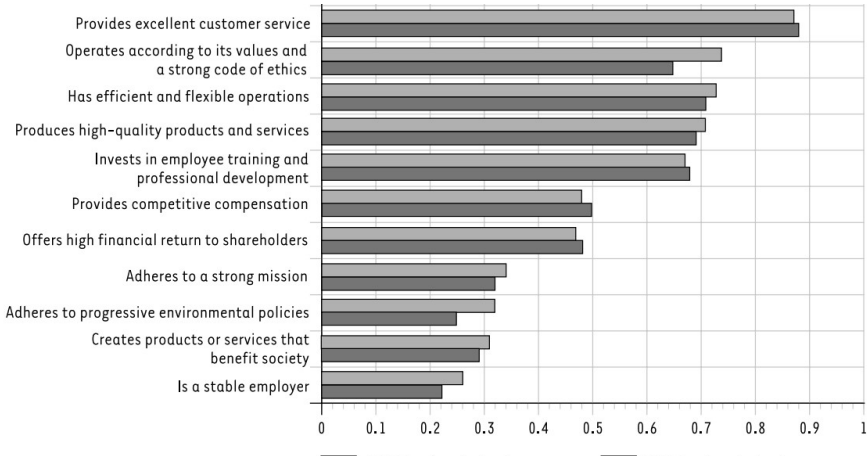
Porter (2002) summarises that a well-run company should be able to beat its ineffective rivals on all dimensions simultaneously. A similar idea drives business excellence models that have opened new ways of interpreting well-run characteristics. The endeavour of the Malcolm Baldrige model (Leonard–McGuire 2007), followed by the EFQM model (Hakes 2007) has become popular beyond companies. Despite the different application conditions, both models offer

a comprehensive and customisable evaluation framework. Moreover, excellence models offer a framework for management, especially for organisational learning (Fry et al. 2016; Miller–Parast 2018). The evaluation criteria include external issues such as social impact.

According to my approach, the development of CSR (corporate social responsibility) has boosted the field. The varied opportunities for CSR actions can be considered as reflections of current social expectations. Carroll's (2016) four-level model marks the economic and legal levels of responsibility as 'required by the society'. Notwithstanding the economic interests and the need to serve the shareholders that have a determining role in achieving a breakthrough in the field (Laudal 2011), authors agree that social responsibility efforts pay off (Burke–Logsdon 1996; Friedman–Friedman 2002; Kotler–Lee 2005). Behringer and Szegedi (2016) point out that the focus of responsibility in achieving sustainable development was shifted from states' responsibility towards multi-players' responsibility. However, CSR is usually considered to be a privileged voluntary activity of large corporations; the efforts and results are broader (Benedek et al. 2015).

The multi-faceted interpretation of a well-run company is mirrored in the survey of the Aspen Institute Business and Society Program (Aspen BSP). In 1999, they ran the questionnaire among MBA students for the first time, then they applied it again in 2007 (ASPEN 2003; ASPEN 2008). A question block explores the attitudes to the question "In your definition of a 'well-run' company, how important are the following?". However, the results presented in the reports are not directly comparable due to the different presentation. It can be concluded that, in both surveys, the most important virtues were attracting and retaining exceptional people and providing excellent customer service (ASPEN 2008). Moreover, a higher level of CSR goals is ranked lower by the respondents. The 2001 and 2002 results are presented in Figure 1.

A limitation of the methodology used by the ASPEN Institute is that it is based on MBA students' evaluation. There are objective corporate performance indicators that are not included. Nonetheless, the attitudes of future decision-makers provide valuable sources of information for shaping the business strategy. Moreover, learning about these attitudes strongly supports the development of education and training programmes.



Source: ASPEN 2003

Figure 1. Characteristics of a well-run company based on the ASPEN survey, 2001 and 2002 results (Index -1 to +1 based on 'very important', 'somewhat important' and 'not important at all' responses)

Methods and sample

Exploring the character of a well-run company is a constant challenge and this study aims to contribute to that knowledge based on a Hungarian survey.

The research questions are formulated as follows:

• What are the students' current attitudes to well-run companies?

• Are these attitudes uniform within the sample?

Data collection was performed based on a survey conducted between 2016 and 2018 among students of Hungarian higher education institutions. The survey uses a voluntary questionnaire managed by the Evasys Survey Management System. Data analysis is supported by IBM SPSS. The research sample comprises master's-level business students (n=471). However, the findings can contribute to a better understanding of attitudes to well-run companies based on a Hungarian case, with notable limitations. The research sample cannot be considered representative, which prevents us from generalising conclusions for the total population of higher education students, even business students in Hungary. A further limitation is that participation in the online survey was voluntary and the survey was completed without supervision; the results may reflect the reality in a biased manner.

The empirical study incorporates the questions of the ASPEN Institute's survey about well-run companies, but it uses a different evaluation method. The

questions are integrated into a comprehensive survey related to attitudes to CSR. The respondents were asked to mark their opinions on a 5-point scale (from 'not important' to 'very important'). In its turn, the original method used a 3-point scale ('very important', 'somewhat important' or 'not important at all').

The statistical analysis of the results includes:

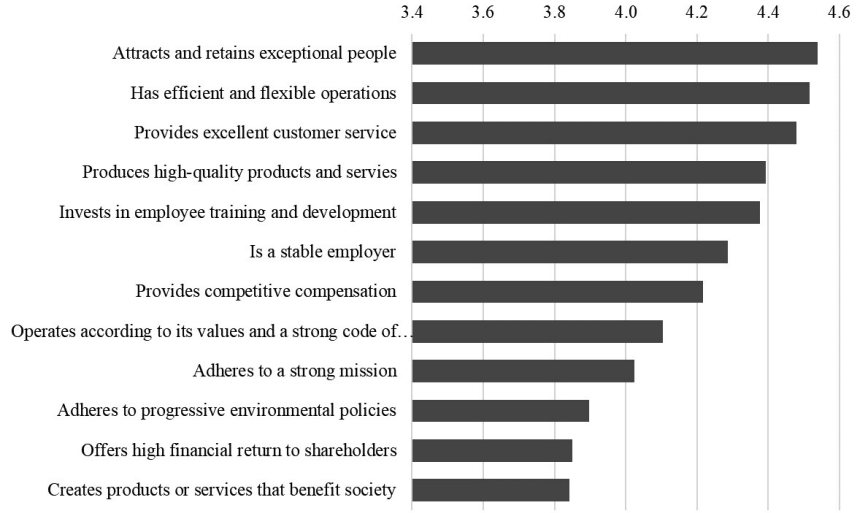
• Comparing the priority order of statements between the recent survey and the former results of the ASPEN Institute,

• Analysis of variance within the research sample by gender, study characteristics and religiousness (non-parametric test).

Results

Judgment on the characteristics of a well-run company

The average results of respondents' evaluation are summarised in Figure 2 and Table 1. Hungarian master's-level business students consider attracting and retaining exceptional people, having an efficient and flexible operation and providing excellent customer service as the most important characteristics of a well-run company. Progressive environmental policies, socially beneficial products are at the bottom of the list as well as high financial returns for stakeholders.



Source: Own research

Figure 2. Characteristics of a well-run company based on the ASPEN survey, Hungarian sample, 2018
(5-point scale – 1 to 5, from 'not important' to 'very important')

Table 1. Mean values of survey results by sub-sample (5-point scale – 1 to 5)

	Total	Male	Female	Full-time	Part-time	Religious	Not religious
N (number of respondents)	471	179	292	295	176	223	248
Provides excellent customer service	4.48	4.49	4.48	4.46	4.52	4.50	4.46
Attracts and retains exceptional people	4.54	4.58	4.51	4.56	4.51	4.53	4.54
Has efficient and flexible operations	4.52	4.46	4.55	4.51	4.53	4.52	4.51
Invests in employee training and development	4.38	4.34	4.40	4.32	4.48	4.35	4.40
Produces high-quality products and services	4.39	4.38	4.40	4.35	4.47	4.45	4.34
Is a stable employer	4.29	4.22	4.33	4.24	4.37	4.34	4.24
Operates according to its values and a strong code of ethics	4.10	4.01	4.16	4.00	4.28	4.18	4.04
Adheres to a strong mission	4.02	3.95	4.07	3.88	4.26	4.13	3.93
Provides competitive compensation	4.22	4.18	4.24	4.12	4.38	4.19	4.24
Adheres to progressive environmental policies	3.90	3.78	3.97	3.83	4.01	3.96	3.84
Creates products or services that benefit society	3.84	3.75	3.90	3.80	3.91	3.97	3.73
Offers high financial return to shareholders	3.85	3.80	3.88	3.75	4.01	3.94	3.77

Source: Own research

Across the total sample, the distribution characteristics of responses are as shown in Table 2.

Table 2. Distribution characteristics, Hungarian sample, 2018

	Mean value	Median	Skewness	Kurtosis
Provides excellent customer service	4.48	5	-1.577	2.855
Attracts and retains exceptional people	4.54	5	-1,532	2.568
Has efficient and flexible operations	4.52	5	-1.596	2.951
Invests in employee training and development	4.38	5	-1.119	0.812
Produces high-quality products and services	4.39	5	-1.206	0.605
Is a stable employer	4.29	5	-1.134	0.741
Operates according to its values and a strong code of ethics	4.10	4	-0.797	0.077
Adheres to a strong mission	4.02	4	-0.718	-0.033
Provides competitive compensation	4.22	4	-0.958	0.547
Adheres to progressive environmental policies	3.90	4	-0.563	-0.360
Creates products or services that benefit society	3.84	4	-0.714	-0.206
Offers high financial return to shareholders	3.85	4	-0.452	-0.224

Source: Own research

Impact of grouping criteria

Since the Kolmogorov-Smirnov H test for normality shows that the distributions of answers do not follow a normal pattern (sign.=.000 for each item), I used the non-parametrical Kruskal-Wallis test to check for differences in responses across sub-samples. The results of the variance test are summarised in Table 3, with significant items being marked by '*'.

Table 3. Results of variance analysis, Hungarian sample

	Gender			**Full/part-time**			**Religiousness**		
	Chi-Square	d_f	Asymp. Sig.	Chi-Square	d_f	Asymp. Sig.	Chi-Square	d_f	Asymp. Sig.
Provides excellent customer service	.050	1	.823	.358	1	.549	.288	1	.591
Attracts and retains exceptional people	1.162	1	.281	1.194	1	.274	.151	1	.698
Has efficient and flexible operations	1.784	1	.182	.368	1	.544	.038	1	.846
Invests in employee training and development	1.447	1	.229	3.714	1	.054	.267	1	.605
Produces high-quality products and services	.010	1	.919	2.169	1	.141	1.228	1	.268
Is a stable employer	1.932	1	.165	3.069	1	.080	1.342	1	.247
Operates according to its values and a strong code of ethics	**4.037**	**1**	**.045***	**10.545**	**1**	**.001***	**3.853**	**1**	**.050***
Adheres to a strong mission	1.391	1	.238	**21.145**	**1**	**.000***	**5.572**	**1**	**.018***
Provides competitive compensation	.949	1	.330	**10.481**	**1**	**.001***	.145	1	.704
Adheres to progressive environmental policies	**4.043**	**1**	**.044***	**3.874**	**1**	**.049***	1.689	1	.194
Creates products or services that benefit society	2.401	1	.121	.960	1	.327	4.091	1	.043
Offers high financial return to shareholders	.478	1	.489	**9.768**	**1**	**.002***	3.680	1	.055

Source: Own research

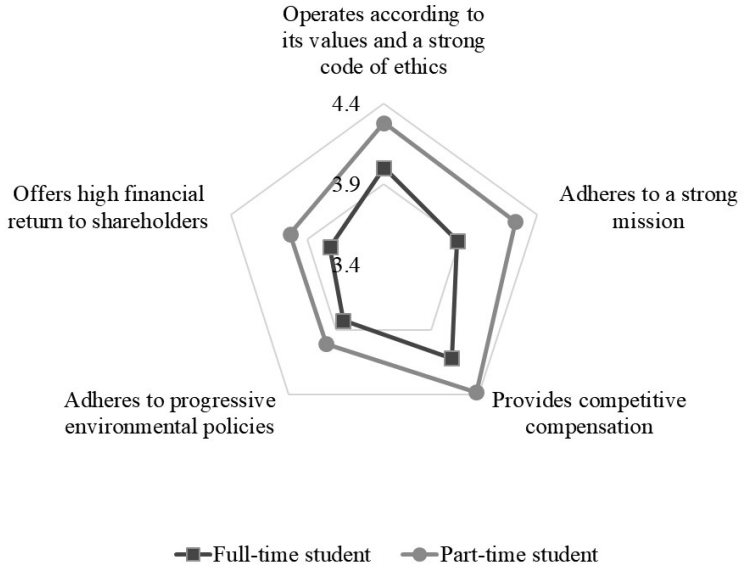
According to the Hungarian sample, the analysis of variance based on the selected grouping criteria can justify significant differences only in a few cases. The overall picture of gender differences based on the mean values (Table 2) is in harmony with CSR-related results underlining that females are more sensitive to environmental and social issues (see, e.g., Lämsa et al. 2008; Schmidt–

Cracau 2015; Deutsch–Berényi 2018). The difference between male and female respondents is significant on two issues:

– Operates according to its values and a strong code of ethics (x_{male}=4.01 x_{female}=4.16, Chi-Square=4.037, d_f =1, Asymp. Sig=.045),

– Adheres to progressive environmental policies (x_{male}=3.78, x_{female}=3.97, Chi-Square=4.043, d_f =1, Asymp. Sig=.044).

Figure 3 shows that the mean values of the evaluation by part-time students are higher than by full-time students. The biggest difference of opinion is found about adhering to a strong mission, and opinions of the groups are the closest to each other about environmental commitment.



Source: Own research

Figure 3. Comparison of significant differences in mean values between full-time and part-time students

Religiousness is a popular grouping factor for analysing differences in value systems. Religious respondents evaluated two statements significantly higher than non-religious students:

– Operates according to its values and a strong code of ethics ($x_{rel.}$=4.18, $x_{non\text{-}rel.}$=4.04, Chi-Square=3.853, d_f =1, Asymp. Sig=.050),

– Adheres to a strong mission ($x_{rel.}$=4.18, $x_{non\text{-}rel.}$=4.04, Chi-Square=5.572, d_f=1, Asymp. Sig=.018).

Comparison of ratings to former survey results

Although it is not advisable to compare the mean values to the results of former surveys (ASPEN 2003; ASPEN 2008) due to the unavailability of individual data, the limited presentation of indicator data and the different sample sizes, the priority order can point out a change in preferences (Table 4).

Table 4. Priority order of the characteristics of a well-run company in different survey periods

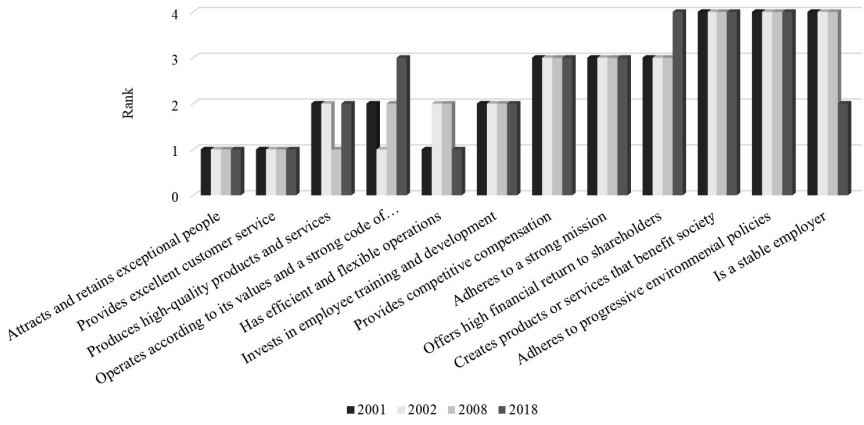
	2001	2002	2008	2018
Provides excellent customer service	2.	2.	2.	3.
Attracts and retains exceptional people	1.	1.	1.	1.
Has efficient and flexible operations	3.	4.	5.	2.
Invests in employee training and development	5.	6.	6.	5.
Produces high-quality products and services	4.	5.	3.	4.
Is a stable employer	12.	12.	12.	6.
Operates according to its values and a strong code of ethics	6.	3.	4.	8.
Adheres to a strong mission	9.	9.	8.	9.
Provides competitive compensation	7.	7.	7.	7.
Adheres to progressive environmental policies	11.	10.	11.	10.
Creates products or services that benefit society	10.	11.	10.	12.
Offers high financial return to shareholders	8.	8.	9.	11.

Source: Own edition

The change in attitudes can be better visualised by forming four quarters based on rankings. The 1-3, 4-6, 7-9, 10-12 ranking positions are merged. Figure 4 presents the results, where a shorter bar means a better ranking. The classification shows the same quarter of importance in 7 of 12 cases. Being a stable employer and efficient, flexible operations have a higher priority in the recent Hungarian sample than in the former ones.

Discussion

The ASPEN Institute (2008) notes that students' definition of a well-run company has remained quite consistent over the years (between 2002 and 2007). The current survey shows that most factors have been consistent for more than ten years. Nevertheless, a shift of focus is expected in line with social changes.



Source: Own edition

Figure 4. Priority order by year, sorted by ranking quarter

Attracting and retaining exceptional people has remained the leading factor. At the top of the list, customer-oriented factors are mentioned, while both a strong mission and stakeholders' or social benefits are at the bottom of the list. From the lecturer's perspective, it is noted that neither strategic nor social issues have a dominant role in the attitudes. Both topics have an emphasis in the curricula of business education, their essential role is generally accepted in the literature but not reflected in the survey results.

A remarkable difference is that being a stable employer is appreciated (6th rank) in the Hungarian sample. The question arises whether this result is general or just a Hungarian pattern. In the present sample, there are also 91 international students who answered the questions. Comparing the mean value of their responses (Mean=3.97, n=91, Rank=9.) to the Hungarian sample, it can be concluded that this difference in priorities is a local experience. Furthermore, another difference is found in the case of the statement about flexible operations. The results of international students (Mean=4.21, n=91, Rank=5.) are consistent with the results of former surveys, while this statement is evaluated as being more important by Hungarian students (Mean=4.52, n=471, Rank=2.).

There is a notable limitation in the interpretation of the results, given the missing normality of distributions. The distribution characteristics summarised in

Table 2 point to the conclusion that students tend to overestimate the importance of the statements; ranking differences may remain hidden on a personal level.

Conclusions

Defining a well-run company is a complex challenge. The methodology and the questions developed by the ASPEN Institute can point out personal preferences and focus points in the field, along with differences between professional and personal opinions. Although recent trends in management and policies force a wider stakeholder approach and the consideration of environmental and social goals, customer orientation is clearly highlighted in students' attitudes.

The main conclusions of the survey can be summarised as follows:

1. Students' definition of a well-run company has been quite consistent over time. Customer and quality-related factors are highlighted in the opinions, while stakeholders' return and social issues are evaluated as being less important.

2. The top position of attracting and retaining exceptional people suggests the relevance of a 'soft' approach to defining a well-run company.

3. The Hungarian survey shows local characteristics. Being a stable employer and efficient, flexible operations are evaluated higher than in other samples, including former surveys and the attitudes of international students. This result may reflect the need for the economic sustainability and stability of companies.

4. The recent Hungarian sample shows significant differences by gender or religiousness, but easily separable student profiles were not recognised. Among other things, this experience has an educational impact; a common baseline of learning materials and methods may serve development actions.

Another experience of the survey underlines an important challenge and limitation of the methodology. The opinions of part-time students reflect better the literature about success factors of companies than those of full-time students. Assuming that part-time students have more work experience than full-time students, the results suggest that surveying full-time students may lead to a bias in the interpretation of the 'well-run company' definition. As a lecturer, I can conclude that clearing up misunderstandings about corporate operations is a key issue for educational development.

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Közgazdász Fórum
Forum on Economics and Business
22(141), 25–38.
2019/4

Analysis of the financial situation of Hungarian sports enterprises[1]

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The reason for the dynamic development of the sports industry is the increase in demand for sports opportunities due to leisure and lifestyle changes. This creates a continually expanding market for enterprises providing sports services and for businesses dealing with sports tourism and sports equipment production. Thus, the economic analysis of enterprises engaged in sports activities is an interesting and necessary field of research. The primary objective of this paper is to analyse the financial situation of enterprises whose primary business activity falls under NACE 931 "Sports activity". The 1,568 enterprises included in the sample were grouped into four clusters based on their net sales revenue, operating profit and balance sheet total. Subsequently, individual clusters were analysed (return on assets, return on equity, quick liquidity ratio and total indebtedness). The favourable short-term financial position of sports enterprises is due to their activity, i.e. they possess a relatively high amount of cash and a low amount of short-term liabilities. However, in the long run, these enterprises are significantly indebted, the main reason for that being probably their very low or even negative equity.

Keywords: sports industry, Hungary, enterprises' financial situation, return on assets, quick ratio, total leverage.

JEL codes: Z20, Z23.

Introduction

Currently, in developed countries, sports no longer appears only as a leisure activity, the embodiment of a healthy lifestyle and part of the entertainment industry, but also as a growing and more serious factor in the business sector.

[1] The publication is supported by the EFOP-3.6.2-16-2017-00003 project. The project is co-financed by the European Union under the European Social Fund.

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Publishers: Hungarian Economists' Society from Romania, Department of Economics and Business Administration in Hungarian Language at Babeş–Bolyai University, and the Partium Christian University
ISSN: 1582-1986 www.econ.ubbcluj.ro/kozgazdaszforum

Sport, with its multidimensional range of value, has become an enormous business. Business-based sports require a good marketing strategy, i.e. excellent sales location (sports stadium, sports hall), calculated price (affordable tickets for the middle classes, season ticket offer), advertising slogans for mobilising sports fans (sports communication), product (quality sports product) and, of course, the professionals who set it all in motion and keep it moving.

The economic role of sports shows an improving tendency year by year in terms of the extent to which they contribute to the countries' GDP. Due to the increasing flow of funds into the sector, the analysis of sports enterprises from the economic point of view has become a priority. For the smooth functioning of a market economy, it is essential that market participants have unobstructed access to objective information on the assets, finances and profitability of enterprises present on the market. The goal of our research is to assess the financial situation of the Hungarian enterprises carrying out sports activities (NACE 931). To achieve this, we analyse two profitability indicators, one liquidity indicator and one solvency indicator for a number of 1,568 enterprises, divided into four clusters for easier interpretation.

Theoretical background

One of the reasons for the development of sports activities was the increase in their economic significance, which created a need for their economic analysis (Ács 2015). Eventually, the sports industry has become an integral part of the entertainment industry. In many countries, sport is considered a profitable sector and its economic importance has increased. The reason for the dynamic development of the leisure market in the sports industry is the increase in demand for sports opportunities due to leisure and lifestyle changes. This creates a continually expanding market for companies providing sports services and for businesses dealing with sports tourism and sports equipment production (András 2003).

The findings of other researchers also concluded that sports is a multibillion-dollar economic business, one of the most dynamically developing industries in the world. The contribution of the sports sector to GDP in the EU Member States is close to 5%, while in Hungary it is approximately 1-1.5%. This ratio is likely to increase, with various corporate tax subsidies providing a good basis for that (Ráthonyi-Odor–Borbély 2017). Examined from an economic research perspective, sports can also be considered a topic for both macro- and microeconomic research. It

is macro-level research if its economic significance, its contribution to employment, national economic income, and consumer spending are the priorities of the analysis. It is considered micro-level research if the functioning of sports organisations, their supply and demand characteristics are analysed (Ács 2015).

Companies that provide an organisational framework for sports-related businesses are called sports companies; they operate as business entities and they are smaller enterprises in terms of size (András 2002). Szabó (2009) summarised the usefulness of recreational sports at the level of society, economy, companies and individuals. The more people do sports, the healthier they will get and, hence, there will be a lesser burden on health and social security. The increase in the proportion of the population that is engaged in sports in Hungary would result in significant savings in the area of sickness benefits; thus, health improvement would lead to financially quantifiable cost savings or revenue growth (Szabó 2009; Kovács 2002).

Economic performance and productivity show a growing tendency due to leisure sports. By creating jobs, sports increase consumption and tax revenue. Based on the findings of several studies (Szabó 2009; Kovács 2002; Staines et al. 2003; Pálócz 2006; Suhrcke et al. 2005), it can be established that health is closely related to the competitiveness of the national economy through leisure sports and they mutually reinforce each other alongside an appropriate economic policy. Finally, leisure sports are also beneficial for companies, as their expenditures on sickness benefits decrease, the number of absences from work and workplace accidents declines, while employee performance, motivation and satisfaction improve. Also, the extensive involvement in sports has a favourable impact on related industries such as companies manufacturing and distributing sports apparel, sportswear and equipment, providing substantial business revenue for the business sector (Szabó 2009).

Only businesses characterised by efficient operation and rapid adaptability can be considered successful (Fenyves et al. 2018). Well-established decisions require in-depth economic and financial analysis. In an accelerated, globalising world, there is less time available for the decision-making process, thus there is a growing demand for a high level of support for managerial decision-making (Blumné–Zéman 2014).

The balance sheet, which presents the company's financial profit and loss account, as well as the notes to the financial statements provide information for

external stakeholders about the financial situation of the company (Böcskei–Hágen 2017). The notes to the financial statements have to support a more comprehensive presentation showing the reliable and realistic overall picture of the enterprise's financial position (Adorján 2008).

To offer a comprehensive picture of the sports companies' financial situation, in our study, following the analysis of the asset and liability structure indexes, we also examined the additional information and explanations presented in the notes to the financial statements.

Methodology and sample characteristics

In this paper, we analyse the financial situation of Hungarian sports companies based on the data of financial statements for the period 2014-2017, prepared and published in conformity with mandatory provisions and requirements. We extracted data from the OPTEN database, built up within the EFOP-3.6.2-16-2017-00003 project co-financed by the European Union under the European Social Fund.

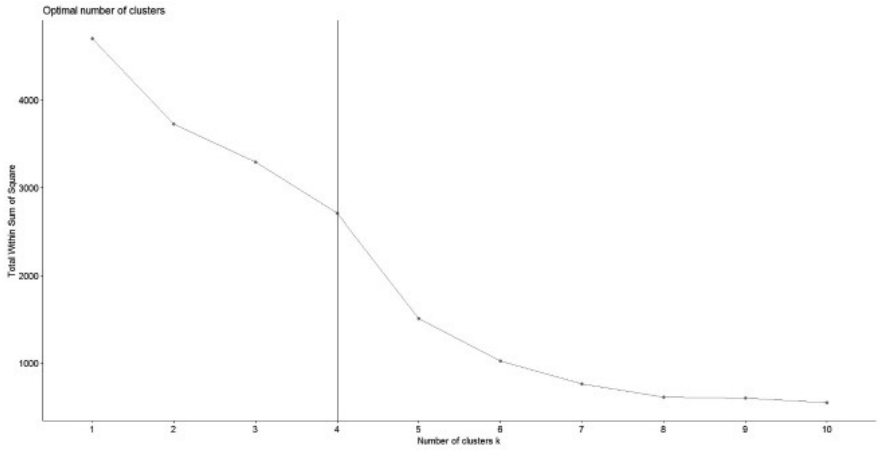
Enterprises included in the database fulfil the following conditions:

- They have a registered office in Hungary;
- Their primary activity is sports (Hungarian NACE code 931);
- They were established before 1 January 2014 and have a minimum of four closed business years;
- They are neither in bankruptcy nor in liquidation;
- They prepare an annual statement or a simplified annual statement.

Altogether, 1,747 enterprises met the requirements above and were therefore included in the database. Enterprises without revenue for the analysed period were excluded from the database, assuming that they were out of operation, thus the final number of enterprises analysed is 1,568.

To perform the analysis, we used Microsoft Excel and Rexcel, the R statistical system used within Microsoft Excel (Heiberger–Neuwirth 2009).

We carried out a cluster analysis based on three factors: total assets, total net revenue and operating profit. These indicators, in our opinion, characterise company size and operation the most accurately and can be extracted from the balance sheet. Studying the optimal number of clusters with the elbow method (Figure 1), we concluded that four clusters should be formed.



Source: Own research

Figure 1. Optimal number of clusters

Based on Bíró et al. (2016), we selected four indicators to analyse the financial situation of the enterprises:

- Return on assets shows the ability of assets to generate return. The indicator may be influenced by the profitability of sales (after taxation) and the change of asset rotation.
- Return on equity is the coefficient of profit/loss after taxation and equity. It is a quite common indicator to measure profitability because it is in strong relationship with the profit-sharing scheme of the management, providing information regarding the ability to pay dividends and the maximum capital gain. In addition, it is widely used in international practices to compare enterprises.
- Quick liquidity ratio is one of the indicators that best describes the short-term solvency of enterprises. It examines the coverage of their short-term liabilities by current assets without inventory. According to the literature, the value of the indicator should be around 0.8-1.
- Total indebtedness (the proportion of outside capital relative to total liabilities) shows the long-term debt position of the company.

On the clusters created we calculated the following statistical attributes of the chosen indicators: mean value, standard deviation, minimum value, first quartile, median, third quartile and maximum value.

Results of the study

Characterisation of sport enterprises' clusters

Before the comprehensive analysis of the financial indicators of the enterprises included in the study, delving into the basic statistical attributes of the clusters created is crucial.

A number of 412 sport enterprises were included in the first cluster (26.28% of the total), 918 enterprises (58.55%) in the second cluster, 175 enterprises (11.16%) in the third cluster and 63 enterprises (4.01%) in the fourth cluster.

The total assets of enterprises from Cluster 1 range from 200 thousand HUF to 2 369 509 thousand HUF, with a mean as high as 144 017 thousand HUF (Table 1). As the standard deviation (CV%) of this indicator is quite high, the group cannot be considered homogenous according to this indicator. Total net revenue ranges from 0 HUF to 482 474 thousand HUF. The distribution of the group is favourable, because of standard deviation from 35% to 133%, therefore the total net revenue describes the population accurately. The operating profit for their daily functioning was relatively high each year in the first quartile of Cluster 1. The median was around 1,000 thousand HUF in the years studied, while the maximum values of the operating profit ranged from 30 million HUF to 155 million HUF. They have high standard deviation values, therefore Cluster 1 is not properly characterised.

Table 1. Attributes of sport enterprises in Cluster 1 (unit: thousand HUF)

		Cluster 1 (412)						
		Minimum	**Quartile 1**	**Median**	**Quartile 3**	**Maximum**	**Mean**	**CV%**
Total assets	**2014**	423	16 220	45 689	115 776	1 852 698	117 964	212%
	2015	0	16 466	44 919	105 888	1 620 810	115 135	195%
	2016	214	18 017	55 743	136 110	1 868 894	124 976	200%
	2017	225	12 642	55 816	143 447	2 369 509	144 017	219%
Total net revenue	**2014**	0	37 663	46 180	51 179	56 997	41 796	35%
	2015	0	29 242	47 859	64 983	200 667	50 168	70%
	2016	0	18 333	42 614	78 334	336 262	59 985	107%
	2017	0	21 715	44 459	80 641	482 474	68 231	133%
Operating profit	**2014**	-222 457	-3 329	701	2 379	30 129	-4 600	-677%
	2015	-180 771	-1 801	1 244	4 031	38 953	-2 495	-1050%
	2016	-66 172	-1 482	1 038	7 503	48 674	1 584	1048%
	2017	-76 351	-1 933	946	6 222	155 040	3 006	984%

Source: Own research

Cluster 2 included 918 enterprises that were smaller than enterprises in Cluster 1. Total assets range from 0 HUF to 302 262 thousand HUF and the mean is between approximately 55 and 86 million HUF (Table 2). The coefficient of variation of the total assets was around 200%, therefore the total assets properly characterise the cluster. Total net revenues vary from 0 to 446 million HUF. Mean values increased from 22 million HUF to 38 million HUF between 2014 and 2017. The values of operating profit are also diverse; the enterprise with the most negative operating profit closed 2014 with a loss of 152 million HUF and 2017 with a loss of 66 million. On the other hand, the enterprise with the highest operating profit generated 36, 135, 94 and 90 million HUF during the years studied. Standard deviation values of the operating profit are very high, therefore operating profit does not characterise Cluster 2 properly.

Table 2. Attributes of sport enterprises in Cluster 2 (unit: thousand HUF)

		Cluster 2 (918)						
		Minimum	Quartile 1	Median	Quartile 3	Maximum	Mean	CV%
Total assets	2014	0	6 134	17 677	44 655	1 134 233	55 987	239%
	2015	21	6 463	20 747	50 384	1 110 223	63 136	223%
	2016	3	8 172	23 620	57 926	1 138 669	75 503	218%
	2017	27	8 432	28 565	63 738	1 302 262	86 710	225%
Total net revenue	2014	0	13 461	23 336	31 461	45 118	21 962	57%
	2015	0	8 075	20 784	33 870	480 248	27 640	157%
	2016	0	8 754	21 233	34 458	686 807	33 171	198%
	2017	0	8 990	23 743	40 907	446 327	38 238	161%
Operating profit	2014	-152 591	-983	376	2 700	36 137	-694	-2475%
	2015	-171 567	-948	210	3 513	135 408	-563	-3647%
	2016	-53 692	-1 459	147	3 917	94 410	1 986	679%
	2017	-66 570	-522	510	2 767	89 676	2 179	642%

Source: Own research

Most enterprises from Cluster 3 are in a quite unfavourable financial situation, because they have neither assets nor net revenue and they also reported a loss at the end of the financial year (Table 3). Some enterprises are doing better as they closed 2017 with high assets (max. 5,217 million HUF), quite high net revenue (2,978 million HUF) and a profit of 85 million HUF. The mean of the enterprises' total assets increased from 16 million HUF to 33 million HUF between 2014 and 2017, the mean net revenue rose from 2 million HUF to 13 million HUF, while the mean operating profit was negative 500 thousand HUF.

Table 3. Attributes of sport enterprises in Cluster 3 (unit: thousand HUF)

		Cluster 3 (175)						
		Minimum	Quartile 1	Median	Quartile 3	Maximum	Mean	CV%
Total assets	2014	0	619	2 000	6 612	2 549 897	16 657	646%
	2015	0	725	2 438	7 400	4 375 198	22 653	813%
	2016	0	885	2 957	9 103	4 296 176	27 443	727%
	2017	0	1 128	3 224	9 823	5 217 380	33 375	779%
Total net revenue	2014	0	0	968	2 947	54 766	2 304	199%
	2015	0	0	1 314	3 893	325 546	4 778	348%
	2016	0	0	1 473	4 929	1 208 509	8 713	537%
	2017	0	0	1 500	5 603	2 978 632	12 692	815%
Operating profit	2014	-610 332	-451	-15	235	165 310	-873	-2420%
	2015	-324 613	-399	0	345	42 141	-591	-2055%
	2016	-627 456	-418	0	441	68 315	-646	-3408%
	2017	-531 104	-260	4	526	85 160	-384	-5754%

Source: Own research

The minimum values of total assets in Cluster 4 ranged from 14 thousand HUF to 3 963 million HUF, and the maximum values were between 0 HUF and 7 126 million HUF (Table 4). The total assets do not characterise the sample, based on the standard deviation. Some enterprises have no revenue from operation, while other enterprises reached revenues of nearly 500 million HUF. With regard to the operating profit, the group is heterogeneous and the mean ranges from -546 thousand HUF to 406 thousand HUF.

Table 4. Attributes of sport enterprises in Cluster 4 (unit: thousand HUF)

		Cluster 4 (63)						
		Minimum	Quartile 1	Median	Quartile 3	Maximum	Mean	CV%
Total assets	2014	14	2 637	7 192	22 086	3 963 400	34 523	592%
	2015	14	2 959	8 020	22 017	7 627 215	47 403	806%
	2016	0	3 124	8 501	25 193	7 591 618	51 316	748%
	2017	0	3 288	9 238	28 835	7 126 142	53 216	675%
Total net revenue	2014	0	4 298	7 855	13 198	44 862	9 234	79%
	2015	0	3 311	8 394	14 767	265 785	12 584	159%
	2016	0	2 358	8 207	16 515	439 353	14 557	205%
	2017	0	1 693	7 945	16 203	465 286	17 145	224%
Operating profit	2014	-57 524	-984	48	1 049	15 912	-548	-1064%
	2015	-106 970	-884	145	1 013	50 151	-312	-2626%
	2016	-147 156	-1 079	59	1 042	263 688	185	8757%
	2017	-67 448	-813	59	1 041	62 757	406	1912%

Source: Own research

Analysis of sport enterprises' financial situation based on return on assets, return on equity, quick liquidity ratio and total leverage

The mean return on assets (ROA) of enterprises belonging to Cluster 1 increased from 13% to 30% in the first year of the period studied, then it dropped to 7% and then boomed to 118% by 2017 (Table 5). The mean return on equity (ROE) increased from 0.18% to 14%, which can be considered favourable, but it would be important to check whether it increased due to debt. The liquidity quick ratio increased from 2.68 to 5.09, which is also favourable. It is also important to check the proportion of cash/cash equivalents and receivables within current assets and, in addition, the average time used for the collection of receivables. In terms of total indebtedness, the long-term financial position of enterprises from Cluster 1 (around 70%) is favourable. It is important to note that the mean does not adequately represent the population, as in some cases the standard deviation is very high.

Table 5. Financial indicators of sport enterprises in Cluster 1

		Cluster 1 (412)						
		Minimum	**Quartile 1**	**Median**	**Quartile 3**	**Maximum**	**Mean**	**CV%**
Return on assets	**2014**	-1036.67%	-4.41%	6.42%	47.48%	809.09%	**13.25%**	1603.93%
	2015	-105.06%	1.56%	13.00%	44.01%	379.14%	**29.96%**	235.28%
	2016	-319.49%	-14.03%	6.72%	30.94%	449.06%	**7.56%**	1310.01%
	2017	-767.10%	-1.08%	12.52%	31.86%	3613.94%	**117.74%**	505.95%
Return on equity	**2014**	-147.72%	-5.58%	0.87%	9.67%	64.86%	**0.18%**	16056.89%
	2015	-69.80%	-1.87%	2.57%	11.99%	70.71%	**3.02%**	727.06%
	2016	-162.97%	-3.90%	2.79%	13.88%	272.90%	**6.06%**	768.75%
	2017	-309.25%	-4.02%	2.31%	10.08%	1468.54%	**13.98%**	1398.49%
Quick ratio	**2014**	0.00	0.27	0.87	2.35	31.86	**2.68**	2.02
	2015	0.00	0.13	1.05	2.55	31.49	**3.64**	1.86
	2016	0.00	0.28	1.16	2.86	45.17	**3.74**	2.11
	2017	0.00	0.36	1.22	2.03	68.00	**5.09**	2.75
Total leverage	**2014**	0.00%	28.18%	67.73%	95.16%	233.57%	**68.73%**	68.04%
	2015	0.00%	24.11%	69.57%	93.65%	527.22%	**72.52%**	102.04%
	2016	0.00%	33.43%	66.75%	92.94%	450.93%	**78.21%**	95.24%
	2017	0.00%	32.73%	62.26%	87.56%	520.44%	**75.27%**	105.53%

Source: Own research

The mean value of return on assets for enterprises in Cluster 2 was negative in 2014 and 2015, due to the fact that enterprises closed the financial year with a loss,

but in 2016 and 2017 it was already 31% and 11%, which shows an improvement (Table 6). In 2014, the mean value of return on equity was positive and very high, but the reasons behind show an unfavourable situation: the enterprises listed here had very high negative equity, and their profit/loss after taxation was also negative. Over the following three years, the mean value of return on equity ranged from -7% to -3%. One reason for this favourable change is the increase in equity, and the other reason may be an increase in the profit. Quick liquidity ratio had quite high values in all four years examined, so enterprises did not have liquidity problems, but the share of receivables and their recoverability are also in question. With respect to total indebtedness, we can conclude that liabilities are dominant in the capital structure of the enterprises from the second cluster.

Table 6. Financial indicators of sport enterprises in Cluster 2

		Cluster 2 (918)						
		Minimum	**Quartile 1**	**Median**	**Quartile 3**	**Maximum**	**Mean**	**CV%**
Return on assets	**2014**	-6965.75%	-1.60%	10.77%	55.55%	1502.51%	**-14.15%**	-4378.01%
	2015	-24754.17%	-1.60%	6.63%	43.93%	3181.00%	**-111.03%**	-1705.93%
	2016	-2315.67%	-0.22%	8.05%	36.32%	4668.75%	**30.78%**	1374.05%
	2017	-1000.81%	-1.00%	5.54%	28.86%	976.32%	**11.32%**	1231.89%
Return on equity	**2014**	-521.22%	-3.66%	1.32%	15.36%	36321.43%	**199.52%**	1376.88%
	2015	-440.54%	-4.78%	0.87%	12.40%	132.38%	**-7.34%**	-765.56%
	2016	-406.57%	-6.73%	0.65%	9.76%	95.90%	**-7.26%**	-772.14%
	2017	-426.78%	-2.23%	1.48%	10.33%	67.75%	**-3.56%**	-1296.88%
Quick ratio	**2014**	0.00	0.22	1.27	3.93	142.89	**7.98**	2.71
	2015	0.00	0.24	1.05	3.49	295.27	**10.05**	3.53
	2016	0.00	0.24	1.12	4.42	1357.00	**17.38**	6.12
	2017	0.00	0.24	1.19	5.21	146.58	**10.51**	2.53
Total leverage	**2014**	0.00%	32.26%	76.28%	100.54%	7008.33%	**170.19%**	339.95%
	2015	0.00%	30.73%	75.66%	112.12%	7313.79%	**192.06%**	376.76%
	2016	0.00%	21.51%	64.63%	101.52%	5760.61%	**185.26%**	329.55%
	2017	0.00%	16.99%	60.28%	96.88%	4245.45%	**144.87%**	284.99%

Source: Own research

Enterprises in Cluster 3 had a mean ROA value of 49.48% in 2014, and it more than doubled to 132.55% by the financial year 2015 (Table 7). This means that corporate profits for the reference year were on average higher than the value of their total assets. Subsequently, it dropped significantly by 2016, with a mean value of -6.63%, suggesting that these enterprises operated at a loss. By

2017, it rose sharply to 37.82%, i.e. the ratio of the profit/loss after taxation and total assets. The median values stood at approximately 3% each year. There is a significant difference between the mean and the median values, so standard deviation is also high, and the sample is not adequately characterised by the mean. The mean of ROE was negative each year due to the fact that several enterprises from the cluster had negative equity in the periods studied. The median ROE was around 0% each year. Mean quick liquidity ratios were very high, but only due to the large number of extreme values. The median of the indicator was around 1.1, in line with the literature (Bíró et al. 2016). Finally, the minimum of total indebtedness ratio was 0% and the maximum, 2 239 300%, which means that some enterprises had no debt at all, while some had debts 22 393 times higher than their total assets. This is the result of negative equity. On the basis of the indicator's mean value, we can conclude that, in 2014, the debt was 38 times higher than total assets and, in the following years, the same ratio was 36 in 2015, 42 in 2016 and 15 in 2017. Due to the large difference between the mean and the median, the relative standard deviation is high, therefore the cluster is not homogeneous.

Table 7. Financial indicators of sport enterprises in Cluster 3

		Cluster 3 (175)						
		Minimum	**Quartile 1**	**Median**	**Quartile 3**	**Maximum**	**Mean**	**CV%**
Return on assets	**2014**	-7794.74%	-7.58%	2.46%	32.51%	29460.00%	**49.48%**	2535.22%
	2015	-16820.00%	-4.67%	4.71%	31.76%	95400.00%	**132.55%**	2576.75%
	2016	-12807.69%	-4.66%	3.56%	28.71%	3830.77%	**-6.63%**	-8598.77%
	2017	-7515.38%	-4.41%	3.21%	24.13%	18576.98%	**37.82%**	2151.17%
Return on equity	**2014**	-214600.00%	-21.93%	-0.69%	8.27%	28300.00%	**-247.23%**	-2907.01%
	2015	-151100.00%	-17.42%	0.00%	10.68%	770.59%	**-240.30%**	-2112.73%
	2016	-612800.00%	-15.64%	0.00%	9.43%	9566.67%	**-781.29%**	-2596.81%
	2017	-355133.33%	-12.29%	0.01%	9.36%	12788.24%	**-440.29%**	-2670.70%
Quick ratio	**2014**	0.00	0.08	1.09	6.69	6025.50	**52.07**	6.75
	2015	-6.66	0.11	1.11	6.96	4625.00	**31.60**	6.91
	2016	0.00	0.12	1.31	9.14	2637.00	**30.70**	5.09
	2017	0.00	0.09	1.23	10.83	3002.50	**45.53**	4.89
Total leve-rage	**2014**	0.00%	5.94%	56.42%	145.05%	2239300.00%	**3761.58%**	2003.40%
	2015	0.00%	6.92%	60.29%	137.53%	1601000.00%	**3581.72%**	1550.55%
	2016	0.00%	6.42%	47.58%	125.02%	1629800.00%	**4186.24%**	1531.93%
	2017	0.00%	3.26%	34.12%	99.99%	344400.00%	**1492.89%**	1036.74%

Source: Own research

Table 8. Financial indicators of sport enterprises in Cluster 4

		Cluster 4 (63)						
		Minimum	**Quartile 1**	**Median**	**Quartile 3**	**Maximum**	**Mean**	**CV%**
Return on assets	**2014**	-2138.81%	-2.80%	8.83%	40.33%	4359.74%	**18.80%**	1673.26%
	2015	-19340.00%	-2.60%	8.91%	37.03%	5800.00%	**-19.85%**	-5064.31%
	2016	-1902.13%	-5.06%	5.41%	27.54%	5162.86%	**15.92%**	1898.63%
	2017	-2211.52%	-2.23%	4.77%	22.94%	2263.87%	**9.87%**	2401.71%
Return on equity	**2014**	-1013.54%	-11.21%	0.48%	11.63%	1042.55%	**-15.72%**	-876.44%
	2015	-2468.33%	-7.94%	0.93%	13.17%	1070.45%	**-14.83%**	-1241.69%
	2016	-23568.69%	-15.28%	0.38%	7.10%	22620.00%	**-63.10%**	-2934.97%
	2017	-23766.67%	-14.53%	0.28%	6.23%	3766.67%	**-63.41%**	-1888.81%
Quick ratio	**2014**	0.00	0.14	0.78	2.74	5807.00	**20.54**	13.99
	2015	0.00	0.14	1.04	3.28	1369.00	**9.69**	7.28
	2016	0.00	0.13	1.02	3.75	35447.00	**118.65**	14.91
	2017	0.00	0.12	1.07	4.68	5789.00	**39.47**	9.04
Total leverage	**2014**	0.00%	27.51%	76.25%	131.40%	39362.50%	**272.38%**	727.49%
	2015	0.00%	22.00%	73.22%	130.28%	39362.50%	**339.16%**	616.05%
	2016	0.00%	15.77%	61.20%	118.68%	84621.43%	**609.75%**	808.52%
	2017	0.00%	14.04%	60.29%	117.95%	119870.00%	**771.65%**	851.00%

Source: Own research

Finally, Table 8 shows the financial indicators of enterprises in Cluster 4. The average ROA value dropped from 19% to -20% by 2015, then increased to 16% and declined again to 10% by 2017. The negative value was due to the loss reported in the reference year. On average, ROE indicators were negative each year, which could be either due to negative profit/loss after taxation or to negative equity. The quick liquidity ratio was volatile and it moved between 10% and 119% in the given period. Debts were up to seven times higher than total assets due to negative equity and high liabilities. As standard deviation values are high, the cluster is heterogeneous.

Conclusion

The main goal of our research was to analyse the financial situation of Hungarian sports enterprises in the period 2014-2017, based on four indicators: return on assets, return on equity, quick liquidity ratio and total indebtedness. First, we carried out a cluster analysis and formed four clusters based on the enterprises' total assets, total net revenue and operating profit. The primary objective of clustering is to group the approximately 1,500 analysed sports enterprises on

the basis of three characteristics. By creating four homogeneous clusters, the indicators describe the enterprises of the given cluster more accurately. However, it should be noted that none of the clusters created were homogeneous due to the high relative standard deviation. We carried out the same analysis with 10 clusters, but the relative standard deviation did not improve.

Examining the profitability of sports enterprises, it can be stated that their low return on equity ratio results from their high stock of liabilities and their low or even negative stock of equity. Based on the liquidity situation of sports companies, it can be said that, on average, they are not threatened by failure to fulfil their short-term liabilities. This might be due to the high amount of cash funds generated by their activities. In contrast, the same is not true for their long-term solvency. The indebtedness of the companies is high, as a result of negative equity and the high amount of long-term (over 1 year) liabilities. Consequently, these enterprises have fewer business perspectives. In our analysis, we found no correlation between the operating profit, revenues and total assets of the enterprises. This can be explained by their specific activity.

The indicators that we emphasised in our study and their interpretation should be also disclosed in the notes to the financial statements in order to facilitate the decisions of external market participants, investors and creditors.

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Közgazdász Fórum
Forum on Economics and Business
22(141), 39–53.
2019/4

Lateral innovation in finance

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Our study focuses on the applicability of lateral innovation in the financial field. In the first part of this article, we discuss in detail the concepts related to lateral innovation and we differentiate between lateral and traditional innovations. Later, we will introduce a major breakthrough in the financial sector, the cryptocurrency. The aim of our analysis is to find a financial lateral innovation by processing the literature and the answers received from the in-depth interview.

Keywords: behavioural economics, blockchain, innovative cryptocurrency, lateral thinking, rationality.

JEL codes: G02, G40, O30.

Introduction

Lots of people have heard about lateral thinking, but not many of them fully understand the concept. One of the most compact definitions comes from the British author Paul Sloane (2010. 39): "lateral thinking is a counterpoint to conventional or vertical thinking. In conventional thinking, we go forward in a predictable, direct fashion. Lateral thinking involves coming at the problem from new directions – literally from the side".

Every healthy human being is capable of doing that. To reach our best lateral abilities, we can use several methods, based on the principles developed by lateral thinking pioneer Professor Edward de Bono (1970):

- The recognition of dominant polarizing ideas.
- The search for different ways of looking at things.
- A relaxation of the rigid control of vertical thinking.
- The use of chance.

As it can be seen, not every innovation is lateral innovation. For example, have you ever wondered why we no longer call cars horseless carriages? The answer is quite straightforward: because being horseless has now become the standard for modern vehicles. However, we still use terms like horsepower and several brands, like Mustang, use horse references in their names. This is a reminder for us that

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Publishers: Hungarian Economists' Society from Romania, Department of Economics and Business Administration in Hungarian Language at Babeş–Bolyai University, and the Partium Christian University
ISSN: 1582-1986 www.econ.ubbcluj.ro/kozgazdaszforum

the newer innovation (car) emerged directly from historic inventions (carriage), its immediate predecessors. If we go back in time even more, we see that the design of carriages resembles the anatomy of horses, e.g. the legs became wheels and we sit on the back like riding the horse.

This kind of innovation process works in a way that is very similar to the Hegelian dialectic: a thesis (the paradigm of horse and carriage), its antithesis (horseless carriage) and the result, which is the synthesis (the modern car, which blends the two conceptions without fully negating any of them) (Gonsher 2013).

On the other side, there is the more lateral form of innovation: we step out of the existing categories and jump directly into creating a synthesis, the synthesis of originally totally different categories. For example, why not make carriages with five wheels, or no wheels at all, or with wings on top of them and create totally new types of vehicles? This free-flowing, playful and open-ended attitude to the thinking process can result in the most unusual (and often also useful) inventions. This is a field-independent approach: finance can benefit from it just as much as transportation.

This research is a scientific essay which attempts to answer the following questions:

- What are the different aspects of lateral thinking based on value innovation and how can they be integrated into the financial sector?
- With respect to financial innovation, one point needs to be established: can the continuous development of cryptocurrencies be considered as lateral innovation?

Lateral innovation

When we talk about innovation, most people think about modern technological inventions, like robots or the next generation of the ever-evolving smartphones. However, a creative person or group is not necessarily interested only in physics and technology. Finance needs creative, innovative minds as well.

Let's start with a simple example: about five thousand years ago, a creative man probably had enough of untraceable barter businesses and invented something we can call shell money (a kind of token currency without intrinsic value). That was the ancestor of all future currencies. Before that, ancient people had never thought to ask something for their goods that were not directly useful to them. However, that man thought outside the box and created something totally new that affected the whole human history. In a nutshell, this is what we call lateral innovation.

Table 1. Advantages and disadvantages of lateral innovation

Advantages	Disadvantages
Focuses on avoiding competition by creating new needs	It is harder to assimilate the innovations of lateral thinking if they are very different
Differentiating the product/service and cost efficiency are both achievable	It features more education and communication needs
Massive target audience, tolerable price level, market growth with radically higher value from the beginning	Throughout the process, the companies do not benchmark against their competitors
The possibility of creating new markets, categories and audiences, which we have not been able to do so far	The danger of lateral cannibalism: sacrificing existing possibilities to novel solutions
Makes it possible to increase sales: it can bring a totally new sales volume, which does not affect other markets, or serves the same niche with a new product	Cannot be achieved without a leader type of manager
Old and new companies can both use this strategy	Corporate culture has to adjust to it inversely
It can be considered as the innovation of innovations	Not feasible partially
Organises creative thoughts into a process-based system	The idea itself is easy to steal
Does not look over any alternatives that can lead to new alternatives	Plenty of conceptions can slow down the process
Can use product categories or services that have no connection with the existing product	Can trigger the resistance of the employees and the management
By using the value innovation technology, it is not just a way of thinking, but also a toolbox	There can be motivational, cognitive barriers for human resources
Based on value innovation, it can be high-tech, but it is not a determinant	Technological development may be delayed, so the value innovation cannot get through
It is more than growth, it is also a strategic action; it can have a huge positive effect on brand awareness and can also over-position a whole field	The business can lose its former image
Hard to copy	Lateral innovators may become successful at other companies, too

Source: Own editing

In the case of lateral innovation, plenty of conceptions can slow down the process (Table 1).

Aithal–Kumar (2016) proposed six thinking hats – a technique which outlines different thinking styles required by an individual while analysing a

given problem in an effective way – as a method that supports lateral thinking possibilities and new outcomes during problem-solving sessions in order to find the optimum solution.

Intelligent inverse innovation

In this phrase, intelligent innovation becomes inverted in a way that we come to the expected result not by the use of the traditional – linear thinking – process, but by a different, sometimes backward thinking (Szalai–Czékmann 2009).

The novel approach to innovation does not mean the full rejection of former innovation theories. The extension of the concept comes from the creative approach to competitiveness, with which the compulsion to continuously adapt to the needs of the more informed consumer can be placed in a new space of thought. The characteristic of intelligent inverse innovation is that the lateral innovator can perform novel changes that create value in the life of the company and, as a result, the product or service can be provided in a novel way, with outstanding efficiency and for new customer segments. The competitive advantage thus created is also sustainable in the long run and independent from the current business situation.

Lateral thinking makes it possible to increase sales in several ways: it can bring a totally new sales volume, which does not affect other markets, or can fill the same gap with a new category; it can also result in a growing number of other categories or create natural monopolies.

It can be stated that lateral innovations, in general, need much less investment than their traditional mates, but they are harder to integrate, they are riskier.

Even today, it is hard to define corporate competitiveness or to create a generally accepted definition that applies to all kinds of fields and corporation sizes. Linear thinking creates the base for increased competition, its possibilities are limited, and the company's development path is localized due to the lack of a lateral approach.

The practical steps of lateral individuals, who need process-managed creativity, can widen and stretch the seeming barriers and can often create a synergistic effect. The turbulent processes created this way can induce more lateral actions, which spread across the organisation in a multiplicative manner. This kind of innovation has risks, too: the thinking method on which this novel approach is based can often hit a wall, encounter an obstacle. Then the innovator has to use the inverse integration process which, if successful, can pervade the whole culture of the organisation.

With the ever-increasing complexity of systems, most managers and engineers understand that innovation and solutions require collaboration among multiple contributors. To harness the power of the group, group flow is conducive to efficient and creative work, energizes and engages team members, and supports each of the principles for agile development and design thinking (Buss 2015).

It needs high levels of trustful environment in the organisation, which can be created by the leaders. Lack of trust can lead to serious consequences, like endless and complicated contracts, total lack of cooperativeness, not saying the innovative thoughts out loud, proliferation of litigation matters, and, as a result of all these, slowing down economic growth and losing efficiency (Piricz 2013).

The rationality of behavioural economics

Earlier economic thinking was based on a rational approach whereby we have all the information at our disposal to make a decision and make the best decision (Godelier 2012).

One of the topics of rational thinking is the consumer decision theory (Samuelson–Nordhaus 2009). Generally, the literature discusses the purchasing decision mechanism in several ways. This raises a question that cannot be analysed on the basis of a standard, scientifically underlined theory. Several disciplines have already examined the factors that influence individual choices, correcting the established theories. One of them is the starting point of the classical model, which is closely related to the key assumptions of economics based on the concept of rationality.

Consumer behaviour is characterised by the desire to maximise utility, and the availability of the information necessary to make a decision ensures that he or she makes an optimal decision. However, lifelike experiences often contradict these assumptions and seem to support the arguments of alternative approaches.

Finding the best, optimal solution cannot happen without the introduction of clear, quantifiable variables. The decision maker chooses from a variety of alternatives, each of which has some value to him.

The classical economic model was refined: it does not require for the results to be guaranteed, but it introduces the concept of risk. Nevertheless, the requirement of rationality continues to emphasize the related systematic argument.

Later, many people stated that we are not always able to reach the optimal decision that can be made by utilising information perfectly (Rabin 2013). The rationale behind irrational decisions includes primarily cognitive factors, which

may override traditional economic thinking (Sipos–Tóth 2006). In particular, the development of behavioural economics has changed the approach that previously characterised economic thinking (Barberis–Thaler 2003, Camerer 1999; Foss 2003).

Cognitive dissonance is the mental conflict that occurs when beliefs or assumptions are contradicted by new information. The concept was developed in the 1950s by American psychologist Leon Festinger and became a major point of discussion and research (Encyclopaedia Britannica 2019).

Rationality is a complex behavioural theory that can be parsed into statements about preferences, perceptions, and process. McFadden et al. (2000) look at the evidence on rationality that is provided by behavioural experiments, arguing that most cognitive anomalies operate through errors in perception that arise from the way information is stored, retrieved, and processed, or through errors in process that lead to formulation of choice problems as cognitive tasks that are inconsistent at least with rationality narrowly defined. The paper discusses how these cognitive anomalies influence economic behaviour and measurement, and their implications for economic analysis.

The main purpose of rational choice theory is to lay out in clear and transparent terms what conditions are necessary and/or sufficient for the validity of statements about consistent human behaviour. Strong criteria for rationality are 'wrong' if understood as a positive description. However, their very strength provides a sharp guide for experimental social science's project of mapping the properties of individual behaviour (Schotter 2006).

The foundations of behavioural finance can be traced back to the 1970s, when psychologists Daniel Kahneman and Amos Tversky started their work on studying behavioural biases in humans. Now the question arises: How did these individuals actually classify these under a different category? The answer lies in the name itself. Kahneman and Tversky started to notice that people of different classes and categories, having nothing in common except their race, made irrational decisions while dealing with money matters in the stock market and basically acted against their own interests. Their very first paper opened a new era of discovery in finance. The publication, entitled *Judgment under Uncertainty Heuristics and Biases*, argued that people tend to differ from the logical choices in the stock market, which basically explains why these markets will remain inefficient regardless of their exposure to information (Tversky–Kahneman 1974).

The argument itself may be quite confusing by now, so let's try to simplify the findings. Financial markets are indeed very complex, but that is only one side of the story. These markets are evolving each passing day, and we owe it all to the study of behavioural finance. As soon as individuals are aware of the fact that they are under the influence of specific behavioural biases, they will try to influence their behaviour otherwise. So it can be concluded that behavioural finance is one area of study that is constantly evolving, and using it to your advantage may be extremely profitable; but the best way to protect your investments from it is to also be aware of the biases, making sure you do not let yourself become a victim (Michaels 2017).

Cryptocurrencies – innovation in finance

Financial innovation is the act of creating new financial instruments as well as new financial technologies, institutions and markets (Molyneux–Shaumroukh 1999).

The rise of cryptocurrencies

We are living in an era in which the global financial market creates an increasing pressure to innovate, but there are also more technical possibilities than ever. Information technology and computer sciences are oiling the gears of both vertical and lateral financial innovations.

One topic that has got huge attention in the recent years, even in the mainstream media, is the rise of cryptocurrencies and especially the most popular one, Bitcoin (DuPont 2019). It was invented by the so-called Satoshi Nakomoto in 2009. Still, nobody knows who is behind the alias – maybe a whole group of people. If he is a real person, he is considered the 44th richest man of the world.

From an innovator's perspective, being the innovator is very important, but if we look only at the innovation, the personal identity of the innovator may not be as important. There are several factors that together could have led to the creation of cryptocurrencies:

- The mortgage crisis, which started in 2007 and is still ongoing, has caused a great recession in the world economy. The recession triggered business managers' important strategic and institutional reactions alongside the globalisation of markets, changes in the industrial structure, the information revolution and higher customer expectations.

- People could not trust banks and governments anymore, inequality concerns, debts, inflation.

- Technical development: strong computers, developed cryptography.

- The philosophy of cryptocurrencies is rooted in libertarianism: the concept offers a vision of a better future. Technology, new needs and a vision have led to innovation.

Why are cryptocurrencies per se not lateral innovations?

Remember the example with the vehicles. By creating a carriage without horses, the inventor still works with the concept of carriages. Similarly, a bankless currency remains in the same category: currency (although an alternative one). We can see a vertical step-by-step way of innovating here.

Not long ago, economist Benjamin Klein stated: few areas of economic activity can claim as long and unanimous a record of agreement on the appropriateness of governmental intervention as the supply of money (Klein 1974).

The truth is that the concept of alternative currencies is not new at all, but it emerged centuries ago. There is some evidence of tokens that were found in ancient Greek and Roman cities (Burns 1927). About 4,000 alternative currencies were in circulation before the cryptocurrency revolution (Lietear 2004), but they soon disappeared. Now mostly numismatists are interested in buying these currencies. However, it is interesting to think why they did not last and what is different in cryptocurrencies. There may be a key to designing an alternative currency, which could last longer than its predecessors.

This is the point where the innovator should use lateral thinking and find a different approach to the problem, because vertical thinking has given no results. And this is the point where Mr. Nakomoto created something, a breakthrough in the world of alternative currencies: the blockchain. Without going into technical details, we need to have a broad understanding of blockchains in order to see why Bitcoin is different from any former alternative currencies.

The soul of the system – the blockchain

Blockchain is a growing list of records, called blocks, which are linked using cryptography. Each block contains a cryptographic hash of the previous block, a timestamp, and transaction data (Narayanan et al. 2016).

Why is this important to us? Before blockchains, creating decentralised money, which is safe, anonymous and cannot be spent more than once, was problematic. However, by combining cryptography, computer science, mathematics and

finance, this system makes it possible to move towards an open and decentralised financial system. (There are also experiments about other uses of the blockchain technology, e.g. in supply chain logistics. This is also lateral innovation: we use an already existing technology in new fields.)

It is quickly becoming apparent that blockchain technology is about far more than just Bitcoin. Across finance, healthcare, media, government and other sectors, innovative uses are appearing every day (Marr 2018).

Blockchain applications go far beyond cryptocurrency and Bitcoin. With its ability to create more transparency and fairness while also saving businesses time and money, the technology is impacting a variety of sectors in ways that range from how contracts are enforced to making government work more efficiently.

Smart contracts are like regular contracts, except the rules of the contract are enforced in real-time on a blockchain, which eliminates the middleman and adds levels of accountability for all parties involved in a way not possible with traditional agreements. This saves businesses time and money, while also ensuring compliance from everyone involved (Daley 2018).

Digital cash is here today, and many more smart contract mechanisms are being designed. So far, the design criteria important for automating contract execution have come from disparate fields like economics and cryptography, with little cross-communication: little awareness of the technology on the one hand, and little awareness of its best business uses on the other hand. The idea of smart contracts is to recognise that these efforts are striving after common objectives, which converge on the concept of smart contracts (Szabó 1996).

The competitiveness of cryptocurrencies

Today, there are almost 2,800 different cryptocurrencies, and this number grows day by day (Coinlore 2019). Since the rise of cryptocurrencies, we can hear more and more critical or at least sceptical voices. They are often referred to as the new investment balloon, which will eventually pop. On the other hand, if we look at them from a very optimistic angle, cryptocurrencies may replace fiat money altogether in the near future.

Cryptocurrencies indeed can have a very positive impact on economies by supporting the financial systems of the countries: although they are not the means of the monetary policy, the currency competition they generate can lead to price stability. However, by their nature, cryptocurrencies supply a limited amount of

money (this is how the system works), and a suboptimal amount of money is always prone to self-fulfilling inflation episodes.

So, what is the answer to the question of how big impact cryptocurrencies will have on the economy? Only time will tell, but most probably, they will not fully replace traditional currencies. However, this does not mean that they cannot have a huge economic effect by ending the government's monopoly on issuing money.

The problems of the untapped innovation potential

The concept of cryptocurrencies is certainly not a mature one. This is good news for creative lateral innovators and, as the growing number of successful and not as successful new cryptocurrencies shows, the creative minds of financial and mathematical professionals are already working hard. There is a big potential for innovation in this field, as there are many unresolved issues.

For example, their energy use is huge, in comparison to traditional fiat money. Cryptocurrencies can be obtained through the so-called mining process, which is a very resource intensive computing process. For comparison: Bitcoin mining consumes about as much energy (34.9 TWh/year) as the whole country of Bulgaria.

Also, because of their pseudo-anonymity and lack of proper regulation, cryptocurrencies are often used by the cyber- and traditional criminals of the world.

Complexity is another potential problem. For financially illiterate people, even using scriptural money may be too intangible at times, and we can safely say that nowadays the concept of cryptocurrencies is way too abstract for most of the population. The solution to this problem is education.

Usability is also an issue. Originally, Bitcoin and the other cryptocurrencies were supposed to be utilised for day-to-day needs, like paying the rent and buying lunch, but now they are almost entirely used as investment tools.

This is closely linked to volatility. The dilemma is: Why would I spend my Bitcoin on a Ferrari when it may cost half as much tomorrow?

And even if you do not want to buy Ferraris or anything else, volatility is still an issue with cryptocurrencies. If they negate the concept of intrinsic value (and they often do), then how should we value them? It is decentralised, so the government cannot regulate its value – only the changes in demand and supply. This can lead to the previously mentioned self-fulfilling inflation episodes.

The lateral innovation of innovation

On the boiling market of the cryptocurrencies, there are always some new and interesting products. One of them is BlockBen from Hungary. Awarded the Innovative Product of the Year title in Singapore, at the Cryptocurrency Expo 2017, this currency tries to address some of the above-mentioned problems. Its innovative quality comes from the fact that it is fully gold-backed. Also, it does not need mining, because it is already done by the company behind BlockBen. It is based on their own platform, BlockStock. An unlimited number of cryptocurrencies can be made on this platform, based on any kind of stable, real asset. (It can even be based on some valuable paintings.)

Furthermore, it is not anonymous, which lessens the possibility of criminal abuse.

The product got an innovativity award for both its technical and business concepts. It merges two big categories of cryptocurrencies and uses the advantages of both, while trying to avoid their disadvantages. As it is gold-based, investors have more trust in the currency, which has a remarkable growing potential because of the flexible platform.

We can examine another lateral innovation technique with this example: creating something new by going back to the roots. Before the twentieth century, using the gold standard was the generally accepted way of valuing money. Combining this traditional standard with the new technologies of cryptography can lead to something potentially better.

Interview with a financial innovator

We talked to *Andor Kovács*, who is himself an innovator in the financial market. He primarily provides training for clients to learn effective trading techniques. In addition, he organised the first stock exchange dinner and stock exchange camp in Hungary.

We asked him what he saw as an innovation in cryptocurrencies.

According to him, cryptocurrency creation may have been a background to reputed IT companies, because they had to improve. Another great thing has been the introduction of the MLM system, which is about collecting money. The customer has the opportunity to buy gold and then convert their money into cryptocurrency. We buy cryptocurrency based on gold and then bring people in.

Innovation comes from the packages that appear here. It may be more profitable to get into several small packages. There are newer innovations. Another innovation is the mining machinery.

But most importantly, special dealers are already dealing with this. Copying has started in the cryptocurrency market as well. There is an affiliate link. People can also connect to it. In addition to Bitcoin, the second most popular cryptocurrency is Ethereum.

Then we asked whether the appearance of Bitcoin was a real innovation.

He thinks anyone can create a coin. Bitcoin was just in time, following a period of European uncertainty.

To our question *'To what extent has the blockchain system renewed trading?',* he answered: This is actually a blockchain, which generated a bootable process. They could add anything to it. In addition, they put cryptocurrency alongside gold plating.

We were interested to find out what qualified as lateral innovation in his opinion. Andor Kovács thinks that the previous way of thinking had to be reversed. Everyone thinks it will be a world currency. But it could not change the order of the market. However, cryptocurrency is a very good innovation. Bitcoin is available to anyone at any time. A side innovation is that vending machines have been placed.

What is a related innovation? We got the following answer to this question: Automation, good for everyone. The process began in Europe two years ago. Its creation may have been a background to reputed IT companies.

What can a financial innovator learn from Bitcoin?

While, of course, stable knowledge is the basis of innovation, the fastest way to create something remarkable is through lateral thinking.

Mr Kovács emphasises that designing new and profitable financial services and products can be most efficient if we try to think outside the box and use our creative potential as much as we can.

This way of thinking is placed securely in the minds of all humans, resting on our false, limiting beliefs like: only governments can issue money; decentralised money can be spent more than once, so it will not work; electricity is dangerous, so it is not useful; there is only one possible solution to the problem. Fortunately, we are all able to step outside this box, at least once in a while. (And we will get better and better at it with every try.) Our trusted assistants in the process are good

questions, trying to combine seemingly different fields and categories, curiosity and open-mindedness. If one can master the lateral approach, it will help them not just in finances, but in all areas of their life, every time they face problems.

Conclusion

Our first research question was: What are the different aspects of lateral thinking based on value innovation and how can it be integrated into the financial sector? Using the lateral approach, companies can achieve long-term competitiveness in different areas, crossing industry boundaries. In any case, we need to bridge the gap by combining existing things or revealing a problem that has not been solved for others. Occasionally, they meet the hidden needs of users through lateral innovations in various business sectors and other public areas. The financial sector's IT support for these innovations needs to be highlighted. After the financial crisis, people's lack of confidence created the need for cryptocurrencies, whose transparency and security were enabled by the decentralised blockchain system.

The answer to our second research question (Can the continuous development of cryptocurrencies be considered as lateral innovation?) is that the appearance of cryptocurrencies is an innovative solution, but the blockchain system is a lateral innovation. These innovations are cross-sectoral: the blockchain system started in the financial sphere, but its use extends to other areas and it is expected to continue to be developed. The blockchain system can be used in different fields. The most important ones are: asset management, where it helps with trade processing; insurance, where we can use it in claim processing; the payment system can be backed by cross-border payments. Certainly, we cannot leave out smartphones and smart applications. Nowadays, we can talk about blockchain healthcare, blockchain music, blockchain government. And there are some opportunities to use it for personal identification, e.g. passports, birth certificates, wedding certificates. This also proves that lateral innovations extend across industries, and we cannot speak of a sector that does not apply the novel approach to innovation discussed above.

In the future, it would be worth exploring ways of developing lateral thinking in economic education at university level, with the help of leader-type instructors. Further opportunities for research could come from blockchain utilisation in both educational and research fields.

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Published with the support of the Hungarian Academy of Sciences



Publisher:

Hungarian Economist's Society of Romania

12 Aurel Suciu street
400440 Kolozsvár/Cluj-Napoca
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