Ágnes Márta Dr. Saxné Dr. Andor

The Accounting Theory of Intangible Assets and its Application Under the Hungarian Regulations

Financial Accounting Department

Supervisor: Dr. János Lukács, CSc

Corvinus University of Budapest
Management and Business Administration Doctoral Program

The Accounting Theory of Intangible Assets and its Application Under the Hungarian Regulations

Ph.D. dissertation

Ágnes Márta Dr. Saxné Dr. Andor

Budapest
2014

Table of contents

List of figures

List of tables

1. Introduction

1.1. Objective of the research

The concepts of *'knowledge economy'* and *'knowledge-intensive firm'* have gained great popularity in the past decades. It is actually an undisputable fact that in the economic and social context which has undergone important changes both at the global and the local level, the economic importance of intellectual capital has increased. Knowledge and information are mainly embodied in intangible assets, which play a decisive role in the technological renewal of countries, sectors and firms. Several wide-reaching researches have been published, both from a theoretical aspect and in the form of empirical studies, concerning the ever increasing importance of intellectual capital. Sooner or later, the effects of economic restructuring will also be reflected in the accounting regulations. Both Hungarian and international accounting frameworks cover accounting issues related to intangible assets; therefore the researcher needs to examine in the first place to what extent the structure and logic underlying these regulations are aligned with their practical implementation. Although research on intellectual capital is wide-ranging, both internationally and in Hungary, less focus has been given to the accounting treatment of the subject. In Hungary, the accounting aspects of intellectual capital have received scarce scholarly attention [see Laáb (1994) and Juhász (2004)], and only a small number of empirical studies have been conducted to date. The primary objective of this research is to contribute to the accounting theory and empirical research of intangible assets in Hungary.

1.2. Definitions

The Hungarian accounting regulation uses the term *'report'*, whereas international frameworks and academic literature use the concept of *'financial statement'*. For the purposes of the present study, it is quite unnecessary to distinguish between these two; therefore, in this paper, both 'report' and 'financial statement' will refer to the set of documents to be disclosed by firms to the general public. The differences or

simplifications in the forms and contents of each type of statement are discussed in empirical section of the paper.

From a conceptual aspect, it shall be necessary to clarify the difference between intellectual capital and intangible assets. *Intellectual capital* is the wider concept of the two, and also includes intangible assets. In a general sense, intellectual capital is a resource that builds on knowledge and possesses an economic value. *Intangible asset* is primarily an accounting concept denoting an economic advantage taking a non-physical form which is controlled by the firm and capable of generating cash flow or other profit for the firm in future. The use of these terms in theoretical research reflects this aspectual distinction.

1.3. Definition of the subject matter

Several areas of research are related to intangible assets recognised in financial statements. These areas include: studies on the purpose and usefulness of financial statements, intellectual capital management (including, in particular, human resources management), theoretical research focusing on the measurement of intellectual capital, the production of information on intellectual capital as a field of inquiry, and intellectual property rights as a separate area of law. The main focus of my research is the definition of intangible assets from an accounting perspective. In order to give a better understanding and theoretical background, I will also summarise the most important findings of other relevant fields. These, however, will be confined to the essentials, for brevity.

Within the scope of the accounting approach, I will primarily examine *matters related to the Hungarian accounting regulations*. Therefore this paper does not discuss *taxation questions* as part of research. For a number of reasons, I will also deal with the relevant *international accounting standards* (IFRS and US GAAP) as part of my theoretical research. In dealing with theoretical questions I will focus on international regulations that have so far received scarce treatment in Hungarian regulations and professional publications, and in respect of which the Hungarian regulations adopt the reasoning of international standards and foreign publications. In

my research, this will mainly concern the issue of capitalisation. I shall also include an international outlook in certain other chapters of the theoretical section (such as those on valuation and disclosure), but with far less emphasis than in the case of capitalisation. Another reason for including international standards in the theoretical section is that in Hungary consolidated financial statements of listed companies must be prepared and disclosed in accordance with IFRS based on Regulation (EC) No 1606/2002. Therefore, IFRS standards have direct practical implications in Hungary, although at present they only affect a very limited number of businesses. Where the applicable rule set out in the US GAAP substantially differs from the Hungarian or IFRS requirement (as in the case of the reporting of research and development costs), I shall also describe the provisions of the US GAAP, which exerts an important influence at the level of the global economy.

The scope of *theoretical publications and empirical research on the accounting of intangible assets in Hungary is not extensive*, especially when compared to research conducted abroad. Due to this scarcity of Hungarian resources, my research relies more on foreign publications. I will not present the findings of the empirical research connected to the individual chapters in a separate section, but embedded in the corresponding chapters.

In addition to a focused overview of theories on intellectual capital, my research is primarily centred on *three important subjects in accounting*: *capitalisation criteria* (i.e. the criteria for recognition in the balance sheet), *valuation*, and *disclosure*. However, I will not include a comprehensive, itemised description of accounting regulations under these three key topics. Within intangible assets, the research focuses on concrete, identifiable assets, and for this reason I will not deal with the detailed accounting regulations of goodwill, either.

I have conducted my *empirical research* among Hungarian companies and accounting professionals. This approach has allowed me to draw on my familiarity with the Hungarian economic and social situation, and reach more substantiated conclusions. On the other hand, my research aims to contribute to existing related research and publications in Hungary.

1.4. Research questions

My dissertation seeks to answer the following *research questions*:

1. How faithfully do financial statements reflect the role of intellectual capital in the economy? What factors make it difficult to recognise specific items of intellectual capital in financial statements?
2. Is it possible to differentiate between economic operators in the Hungarian regulatory environment based on the recognition of intangible assets in financial statements?
3. How often and with what methods do Hungarian companies value intangible assets in accounting procedures?
4. What are the characteristics of disclosures related to intangible assets among Hungarian companies, and what factors influence them?
5. To what extent are the structure and logic underlying accounting regulations on intangible assets aligned with their practical implementation?

The theoretical inquiry of this dissertation, the hypotheses and the empirical research conducted to verify them, are centred around these ideas.

2. The connection between intellectual capital and the economy

2.1. The impact of intellectual capital on economic development

Colonisation, reaching its zenith in the 15th and 16th centuries, prepared the way for the transition from feudal economy to capitalist global economy. The period from the mid-17th century to World War I is called the capitalist era, which however may not be viewed as a homogeneous unit. The era of *commercial capitalism*, from 1640 to 1780, with capitalist production replacing the former feudal land and agriculture based economy, laid the foundations of the conditions for the later global economy. In the period of *industrial capitalism*, between 1780 and 1880, industrial capital, as well as the free market ("led by an invisible hand", according to Adam Smith) and free competition became pre-eminent, with Great Britain playing the central directing role. This was followed, until World War I, by the period of *monopoly capitalism*, "the era of imperialist colonisation and capital exportation, resulting in the growth of capital concentration and centralisation". [Vofkori (2002) p. 44] The capitalist national states engaged into a war aiming at the redistribution of the global economy, of which 'pie' the United States and Japan began to claim an ever more important slice.

The period following World War II is the era of the *new economy*, characterised by the formation of globalisation and of a multipolar world in the economic, military and political sense. Drucker (1993) describes this era as a post-capitalist one, which at the same time is not identical with anti-capitalism; capitalist institutions survive, only some of them take on different forms. The end of the 20th century represents another turning point from the aspect of economy. "From 1990, capital and technologies entered a phase of intensive development, the bipolar world order became fragmented, the Soviet superpower disintegrated." [Vofkori (2002) p. 45] The era was characterised by international capital flow and division of labour, multinational and transnational companies, accelerating growth, and mass production and consumption. At the same time, as the world reached the limits of growth and was facing a financial and economic crisis, the need for sustainable development, green economy and global responsibility emerged. [Vofkori (2002)] Analysing the

OECD publication entitled "Science, Technology and Industry Scoreboard 1999: Benchmarking Knowledge-Based Economies", Abdulwahab (1999) draws the conclusion that actually no dominantly knowledge-based economies exist in the global economy, although the knowledge and technology intensive sectors are the main drivers of economic development. This is confirmed by the fact that the amounts invested by developed countries into the acquisition of knowledge tend to increase year by year. Intellectual capital and physical capital seem to be moving across borders following opposite directions: productive capital is invested in countries with lower wage costs, whereas highly productive intellectual capital is attracted by developed countries capable of paying for it. [Bőgel (1998)]

In the new economy, capital, natural resources (such as land) and labour ceased to be the most important *economic resources* or 'factors of production'. The fundamental economic factor now is knowledge. Value is created by 'productivity' and 'innovation', which are both based on knowledge. Nobel prize winner US economist Theodore W. Schultz considers knowledge and human capital to be the foundation of economic welfare: "The decisive factors of production in improving the welfare of poor people are not space, energy, and cropland; the decisive factors are the improvement in population quality and advances in knowledge". [Schultz (1981) p. 4] The feature of 'population quality' which can be assessed and, with due investment, improved, is human capital. The attribution of a higher value to knowledge and, consequently, to intangible assets is also reflected in the restructuration of economic sectors. Agriculture, having played a prominent role in the economy of the era of industrialisation, gave way to industry which remained the driving force of economy for hundreds of years. Since the late 20th century, however, the services sector has caught up with industry in the race for the dominant position. Figures 1 and 2 show the contribution rate of each economic sector to GDP in the EU-27 and in Hungary in the 2006–2011 period. The figures make it clear that industry, the energy sector, construction, agriculture and trade contribute to the GDP to an extent of 40–50%, the remaining 50–60% representing the production of the other sectors, mainly consisting of the classical services. (The order of magnitude between the two categories is illustrated by a red line in the graphs.)

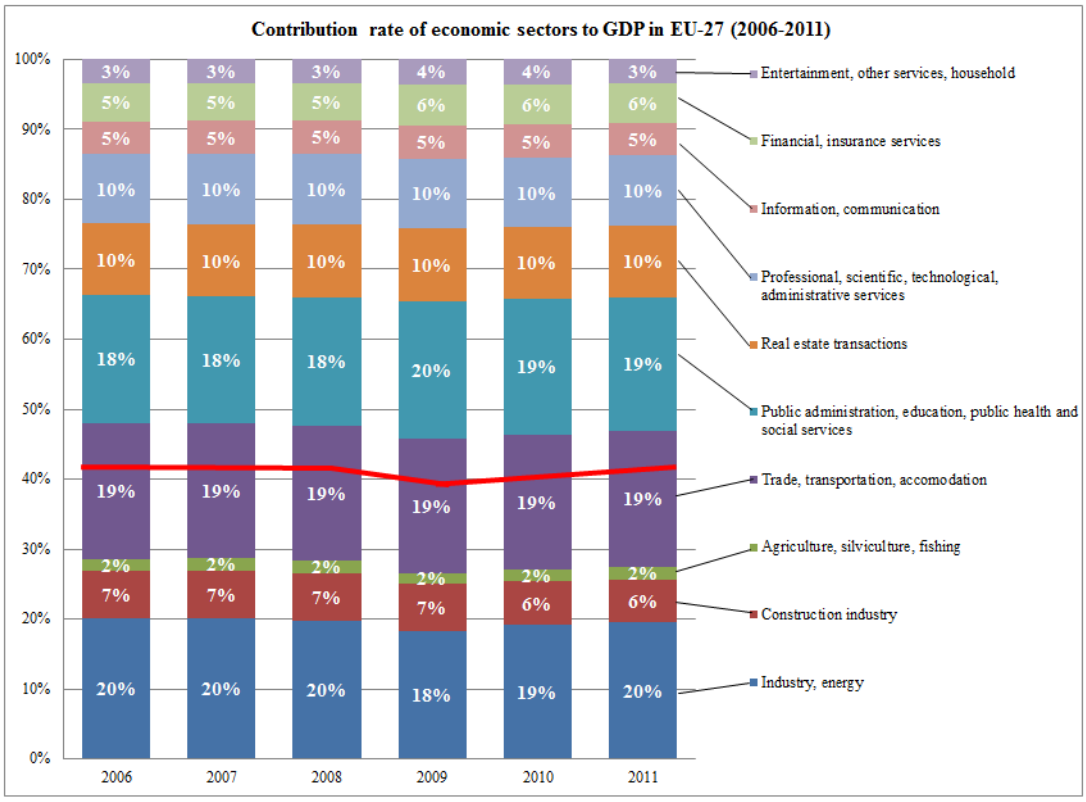


Figure 1. Source: OECD statistics[1]

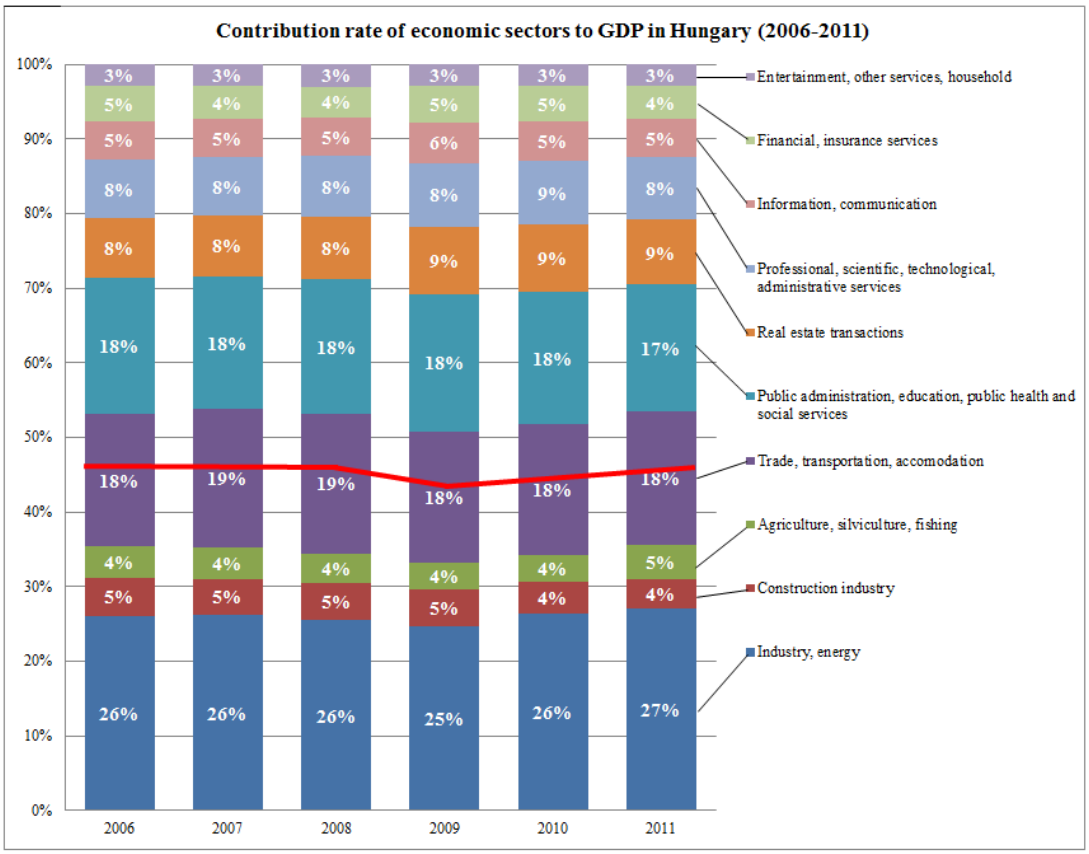


Figure 2. Source: OECD statistics [2]

[1] http://stats.oecd.org/Index.aspx?DatasetCode=SNA_TABLE1
[2] http://stats.oecd.org/Index.aspx?DatasetCode=SNA_TABLE1

The new economy is characterised by *knowledge society* [Shepherd et al. (2010)], with an ever increasing rate of intellectuals within the active population. The leading social layer now consists of intellectuals, so-called knowledge workers, who use the appropriate allocation of knowledge to increase efficiency, just like capitalists used to use appropriate allocation of capital to increase profit. Bőgel (1998) describes this trend as the dematerialisation of knowledge, using the metaphor that the 'head' has become more important than the 'hand'. The pre-eminence and the efficient exploitation of knowledge have been fostered by several innovative inventions made in this period, such as the computer and the internet, as a result of which most professions today tend to build on knowledge and information. [Veblen (1904), Quinn (1992), Drucker (1993), Stewart (1997), Boross–Gyökér (1999), Gyökér (2004), Shepherd et al. (2010)]

The value of most products and services produced in the economy of this era depends primarily on the development of knowledge-based intellectual creations. Therefore, the appropriate management of knowledge based assets and their integration into products and services represents a critical and fundamental activity in this age. [Quinn (1992)] In this context, *'knowledge based companies'* or 'knowledge companies' have gained in importance. The competitive edge of knowledge companies originates from their intellectual capital and from their ability to use it. The operation of these firms is based on their human resources, representing the core element in the capacity of the company to generate revenue. Knowledge companies are service companies offering non-standardised, creative, highly customised products capable of delivering complex solutions to problems. The operation of industrial companies is based on the investors' risk capital, on labour force and on raw materials. Characteristically, knowledge companies do not use raw materials, their activity is not necessarily based on capital investment: human capital is at the heart of their operation, regardless of its individual or structural form. [Sveiby (1989), Quinn–Paquette (1990), Edvinsson–Sullivan (1996), Czoboly (2009)] Bőgel (1998) identifies this type of company with the concept of 'meritocracy', denoting an organisation within which know-how and information are the most important factors of power. Incontestably, companies and market players before the 20th century used to possess intellectual capital and intangible assets. However, the role played by intellectual capital in the economy has since become far more important, and the

value of intangible assets has increased; a process for which Lev offers the following explanation:

> "What is new, driving the recent [...] surge in intangibles, is the unique combination of two related economic forces. One is intensified business competition, brought about by the globalisation of trade and deregulation in key economic sectors (for example, telecommunications, electricity, transportation, financial services). The second is the advent of information technologies, most recently exemplified by the Internet. These two fundamental developments [...] have dramatically changed the structure of corporations and have catapulted intangibles into the role of the major value driver of businesses in developed economies." [Lev (2001) p. 9]

The importance acquired by intellectual capital and its embodiment in innovation can also be deduced from the very essence of division of labour and *competition*. Production efficiency means, in a sense, that economic operators produce more wealth than they consume. Overproduction motivates economic operators to acquire the surplus goods produced by others instead of producing everything they need themselves. This leads to the division of labour and to specialisation. The deeper the division of labour and the wider the market, the stronger the competition for outlets and for favourable opportunities to acquire the necessary factors of production, and the most successful market players will be those who best adapt to their environment and who discover and exploit new potentials. Consequently, market players aim to acquire and own new innovation opportunities. The increase of economic efficiency is more than the primary source of growth; it also has to compensate for "the relative narrowing of the sources of factors of production, and the (often quite dramatic) increases in their average acquisition costs". [Osman (1991) p. 22] Ágnes Laáb's (1994) research in the field of human resources also highlights the scarcity of non-reproducible natural resources. In the new economy, businesses need to adapt quickly and flexibly to a market which is itself very unstable, but where the directions and characteristics of the changes are hard to predict. The economic value of intellectual capital and innovative activities lies in profit generation realised through the exploitation of new market opportunities. Basu and Waymire (2008),

however, claim that this evolutional process is not clearly demonstrated, explaining that the increasing number of protected intellectual creations is a necessary consequence of industrialisation and economic progress, and is connected to the development of modern legal institutions, and does not necessarily reflect an accelerating development in the number or value of intangible assets.

The new economic context also transformed the *system of relationships* between businesses. The vertical integration of the companies of the industrial era was gradually replaced by a network based on close cooperation and alliance between suppliers, customers and employees. The relationship with the partners – usually virtual and mainly based on intangible assets – has become the most important source of profit. This statement is underpinned by the fact that in the late 19th and early 20th century, innovation mainly originated from private individuals, whereas since the late 20th century, innovation has become a key corporate activity with substantial resources allocated to it. [Lev (2001)]

The advent of the dimension of knowledge is also reflected and can be traced in the shift of the focus of *management theories*. Up to the 1980s, mainstream management theory mainly analysed the business environment to explore new sources of competitive advantage. Since the 1980s, management theory has taken on a 'resource-based' approach.[3] This professes that competitive advantage does not necessarily arise from the product/market combination characteristic of the given industry, but rather from the different types of organisational resources. Consequently, the focus has shifted from the business environment to the company's internal operation. Resource-based management theory claims that the business organisation possesses a set of different specific resources, abilities and aptitudes. Resource-based strategies build on the exploitation of the company specific resources; and as knowledge is one of the key resources behind competitive advantage, its integration into the strategies is essential. [Roos–Roos (1997), Sullivan (2000)]

[3]David Teece's work made an important contribution to the creation of the resource-based theory of strategy.

2.2. Deviations between a company's book value and market value

Until the 1980s, the market value of an average company was roughly equal to its book value. This was due to the fact that the ability of the company to earn revenue basically depended on the physical assets it had at its disposal. [Shepherd et al. (2010)] Academic literature [Edvinsson (1997), Stewart (1997), Sveiby (1997), Edvinsson–Malone (1997), Roos–Roos (1997), Bontis (1998), Boross–Gyökér (1999), Gyökér (2004)] consider that the widening of the gap between book value and market value of companies is proof positive of the rising importance of intellectual capital, and largely put down the difference to the intellectual capital not represented in the financial statements.

The relationship between market value and book value of a company is measured by a rate called *Tobin's q*[4], which means the ratio between market value and book value of the company (i.e. the replacement or reproduction value of the assets). If q is less than 1, the proceeds earned by the company are less than the expected rate of return, that is the cash flow of any additional cash unit invested in the company is less than 1. Such companies frequently become targets of acquisition. [White et al. (2003)] On the long term, this ratio approximates 1, yet experience shows that Tobin's q may deviate from 1 for quite long periods of time. For instance, in the software industry, mainly based on intellectual capital, Tobin's q might reach a value of 7, while in the steel industry it may be close on 1. [Bontis (1998)] Interpreting Tobin's q, Eperjes observes that where this ratio is higher than 1 – meaning that the asset reproduction value is lower than the market value of the firm –, "the company realises monopoly revenue", that is, "its invested rate of return is higher than the normal rate of return". [Eperjes (1999) p. 20] Sveiby cites a classical example of Tobin's q:

> "Shares in Microsoft, the world's largest computer software firm, changed hands at an average price of $70 during 1995 at a time when their so-called book value or equity was just $7. In other words, for every $1 of recorded value the market saw $9 in additional value for which

[4]The indicator was introduced in 1969 by Nobel prize winner economist James Tobin.

there was no corresponding record in Microsoft's balance sheet." [Sveiby (1997) p. 3]

Some researchers [see e.g.: Edvinsson–Malone (1997), Roos et al. (1997), Stewart (1997), Sveiby (1997), Lev (2001)] explain the deviation between book value and market value by the existence of intangible assets not accounted for in the books. Research by Péter Juhász found that the gap between market value and book value may be due to various reasons, such as "the radical difference between the financial (investor's) and accounting viewpoints" and "the impacts of various market trends". [Juhász (2004a) p. 59] Similarly, Eperjes (1999) draws attention to the risks associated with the use of simple methods of calculation. Attributing the difference between book value and market value entirely to the intellectual capital of the company would be an excessive simplification failing to reflect the complexity of the real world, including the effects of general market uncertainties and of the selected accounting methodology.

Several empirical researches focus on and explore the possible explanations for deviations between market value and book value. Lev (2001) refers to the research performed by Standard & Poors on the 500 largest US companies which found that between 1997 and 2001, the ratio of the market value and book value of businesses increased from 1:1 to 1:6. At the same time, Lev points out that intangible assets only account for part of this difference, as some physical and financial assets are presented in the balance sheet at their historical cost and not at their market value. An empirical research by Brand Finance[5] determined the corporate value of more than 37,000 listed companies in 53 countries. Concerning the distribution of the global corporate value, it is found that the value of the physical assets, intangible assets and goodwill included in the financial statements only explains and substantiates a fragment of the companies' market values.

[5] Brand Finance is an independent consultancy with a worldwide presence which advises strongly branded organisations on the effective management of their intangible assets.

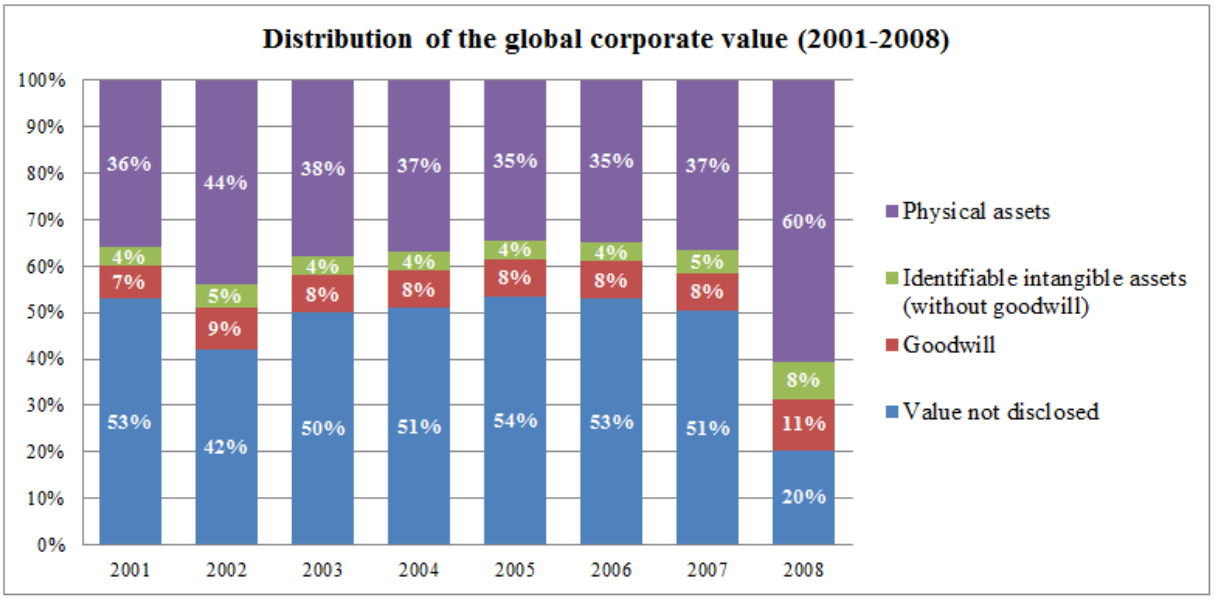


Figure 3. Source: Brand Finance (2009) p. 9 [6]

In a research conducted in 2007, Ernst & Young analysed 709 acquisitions all over the world. The research found that only 30% of the acquisition price could be associated with physical and financial assets. 23% of the price was connected with identifiable intangible assets, and 47% was accounted for by goodwill. The allocation of the acquisition price differed from one industry to another, but on the whole, the dominance of goodwill and identifiable intangibles within the acquisition price was clearly apparent. [For details, see: Ernst & Young (2009)]

[6] Rounding differences may happen.

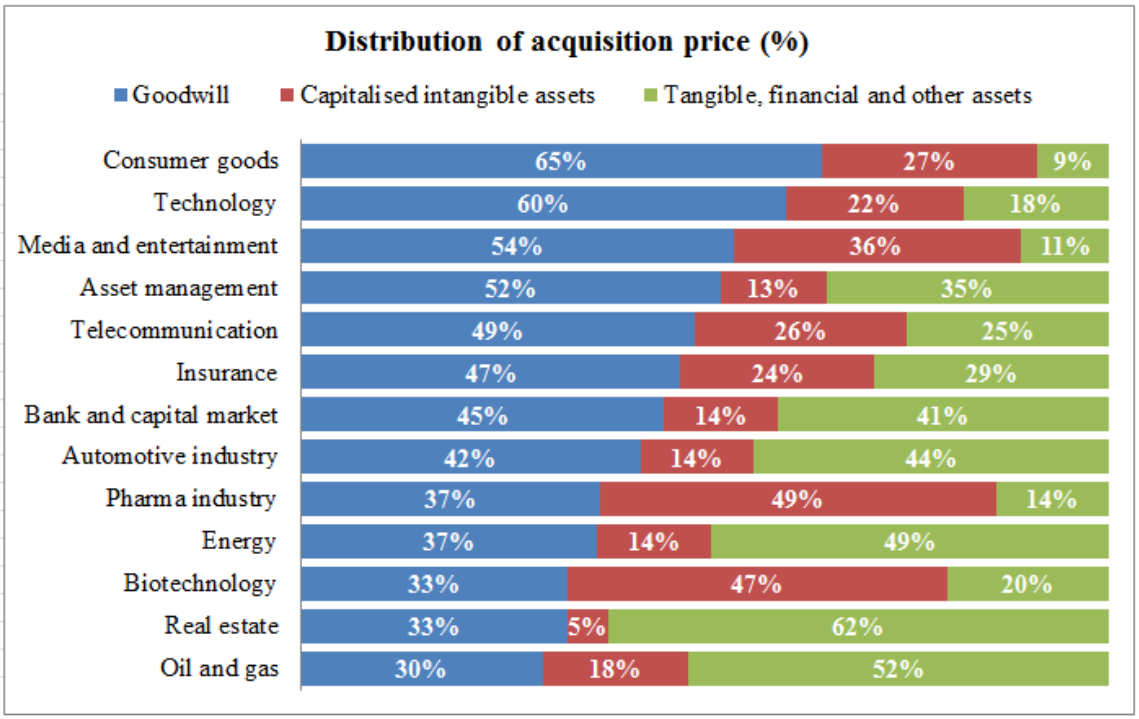


Figure 4. Source: Ernst & Young (2009) p. 6 [7]

Based on the above cited theoretical and empirical studies, we may conclude that the difference between book value and market value, as expressed by Tobin's q, is explained by several economic factors.

Explanation for difference between book value and market value I.

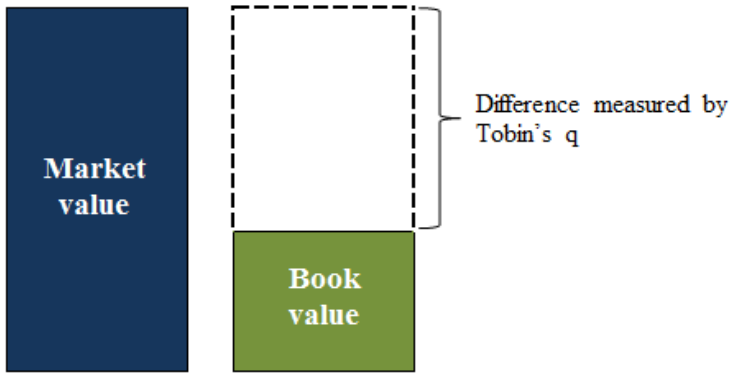


Figure 5. Author's own version

The deviation between book value and market value is partly due to accounting reasons, and partly to reasons related to market speculation. One of the accounting-based factors is the fact that certain assets and equity and liabilities in the books are

[7] Rounding differences may happen.

not presented at their market value. The company may also decide, in its own discretionary competence, not to activate or passivate certain assets and equity and liabilities, or may not be able to do so if the conditionalities for activation or passivation are not fulfilled; this is also a reason connected to accounting considerations. The market value of a company is also influenced by expectations and by market speculation, both at the micro and macro level. Figure 6 offers a possible explanation for the deviation between companies' book values and market values[8].

Explanation for difference between book value and market value II.

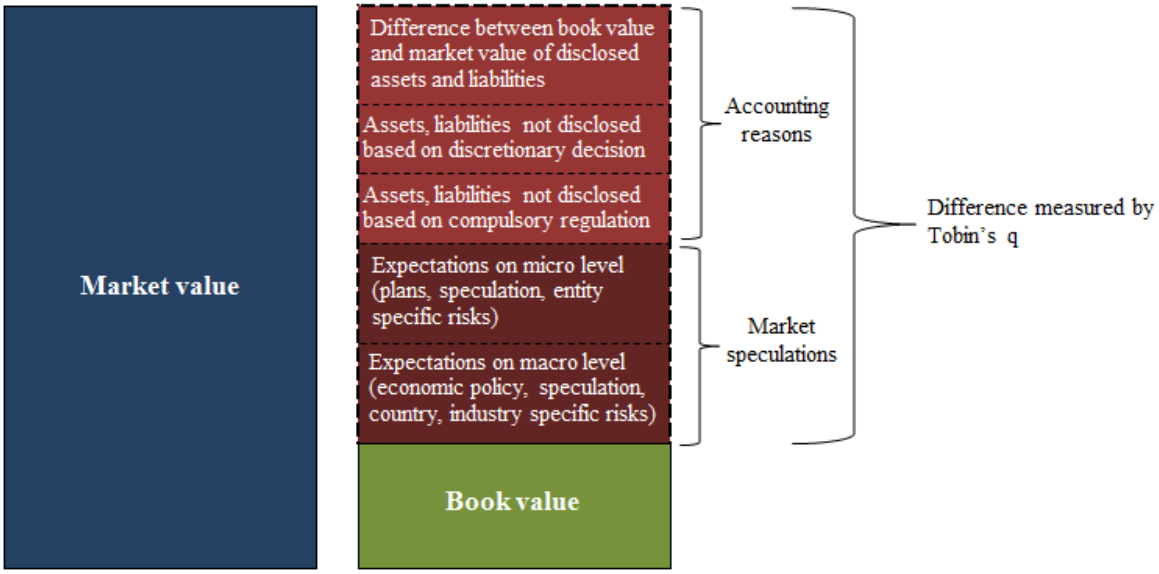


Figure 6. Author's own version

Skinner (2008) acknowledges that the difference between book value and market value is partly due to the intellectual capital (intangible assets) not included in the statements. At the same time, he points out that opinions are divided concerning the role of financial statements. In the owners' (contract-based) perspective, the fundamental aim of financial statements is to ensure that the assets included in the balance sheet are reliable, which is possible by primarily relying on historical, external transactions. This approach excludes phenomena originating from non-external occurrences and items the value of which could only be confirmed at an excessive cost. On the other hand, the investors' perspective considers that account statements aim to provide useful information for investors about the value of the

[8]Juhász (2004) performed an in-depth research into the deviations between companies' book values and market values.

company. In Skinner's opinion, the owners' perspective needs to have priority concerning the function of the account statements, and the absence of certain intellectual capital elements from the financial statements is not necessarily detrimental to the stakeholders' interests.

3. Fundamentals of intellectual capital

3.1. Evolution of the academic concept of intellectual capital

John Kenneth Galbraith is supposed to have used the concept of *'intellectual capital'* for the first time, writing in a letter to economist Michael Kalecki in 1969: "I wonder if you realise how much those of us the world around have owed to the intellectual capital you have provided over these last decades." [Cited in: Bontis (2001) p. 42] Bontis (1999) refers to the fact that research into intellectual capital was mainly induced by the needs of practicing professionals. Intellectual capital management developed from three sources. One of the three 'pioneers' was the Japanese Hiroyuki Itami who examined the impact of 'invisible assets' on Japanese organisations. His work entitled "Mobilizing Invisible Assets" was first published in Japan in 1980, then its English translation in the US in 1987. The American trends of the 1980s (Penrose, Rumelt, Wemerfelt and others) were synthesised into a harmonised theory by David Teece in 1986 in his publication entitled "Profiting from Technological Innovation", analysing the value creating role of technological innovation. The founder of the Swedish intellectual capital theory was Karl-Erik Sveiby, who mainly examined the human elements of intellectual capital. His research was centred on businesses producing knowledge-based products instead of traditional goods; Sveiby determined their value based on their know-how and on their employees' competences ("The Know-How Company", 1986). Sveiby's "Knowledge Management" published in 1990 is considered to be the first book ever on knowledge management. He was the first to recognise the necessity to measure human capital, and to lay the foundations of the accounting practice related to intangible assets. The Swedish Council of Service Industries was the first in the world to propose a standard using Sveiby's concept of human capital in financial statements. Leif Edvinsson, also from Sweden, head of the Department of Intellectual Capital of Swedish insurance company Skandia[9] AFS, began his researches in Sveiby's tracks, and became the first to develop an intellectual capital management model and to prepare the first ever statement of intellectual capital (attached to the 1995 report of

[9]Skandia is a cutting-edge Swedish company working towards the development and use of a system which makes it possible to capture and measure intellectual capital.

Skandia). In his article published in Fortune in 1991, Thomas A. Stewart laid the foundation of the concept of intellectual capital in management science when he defined intellectual capital as "the sum of everything everybody in your company knows that gives you a competitive edge in the marketplace". [Stewart (1991)] Stewart described his concept of knowledge management in "Intellectual Capital" in 1994. Baruch Lev began his research in the early 1990s, focusing on the quantification of the value of intangible assets and their relationship with financial performance. Recent studies have examined to what extent intellectual capital is capable of explaining the difference between a company's book value and market value, and have been making efforts to quantify businesses' intellectual capital. [Sveiby, Sullivan (2000), Ahlgren (2011)]

In parallel with the considerations on intellectual capital, the concept of *'knowledge management'* came into existence. In his article entitled "Towards a Methodology for Knowledge Management", published in 1994, Rob van der Spek wrote: "Knowledge Management consists of managerial activities that focus on the development and control of knowledge in an organisation to fulfil organisational objectives." [Cited by: Sveiby (1998)] Sveiby (1998) considers knowledge management as "the art of creating value from intangible assets".

3.2. The concept of intellectual capital

Some authors use the concepts of *intellectual capital, intangible assets* and *intellectual property* as synonyms [see e.g.: Brooking (1996)], while others differentiate between them [see e.g.: Edvinsson–Sullivan (1996), Bontis (1998), Reilly–Schweihs (1998), Andrikopoulos (2010)].

The widest of the three concepts is the category of *intellectual capital*. Definitions in academic literature agree on the fact that knowledge is at the heart of intellectual capital, with each of them adding some other element to its scope, such as ensuring the operation of the company [Brooking (1996)], creating value [Edvinsson–Sullivan (1996)], ensuring sustainable competitive advantage [Roos–Roos (1997), Edvinsson–Malone (1997)], or creating wealth [Stewart (1997)]. Bontis considers that

intellectual capital means "the pursuit of effective use of knowledge" [Bontis (1998) p. 67], and Bőgel describes it as "something volatile and hard to grasp, which only chooses to stay if it feels comfortable in a suitable soil". [Bőgel (1998) p. 25] Intellectual capital is usually concentrated around knowledge and information. [Heiens et al. (2007)] From the point of view of *economic science*, intellectual capital means the possession of some knowledge, information, experience, network or processes which contributes to the creation of value and wealth within the company, and provides competitive advantage to the business in question. Intellectual capital is so important that its efficient use is an essential issue in corporate management. Intellectual capital may comprise novel elements unknown to outsiders, but also an innovative combination of existing and known elements in order to attain some objective or solve a problem may represent economic value. The accounting approach to intellectual capital is based on accounting statements and strives to identify intellectual capital elements presented in (or missing from) them. From the point of view of *accounting*, intellectual capital means all reported and not reported (hidden) assets of the company, which may be absent from the company's balance sheet but certainly form part of the company's value. [Osman (1991), Roos–Roos (1997), Marois, cited by: Dammak–Triki–Boujelbene (2010)]

Andrikopoulos (2010) points out that the focus and scope of the categories of *intellectual capital* and *intangible assets* are fundamentally different. Intellectual capital comprises all knowledge-based intangible resources of the company wealth, whereas the scope of intangible assets is much narrower. Intangible asset is primarily an accounting concept. Intangible asset is an economic advantage taking a non-physical form which is controlled by the firm (i.e. the firm is able to control others' access to it) and capable of generating cash flow in future. [Edvinsson–Sullivan (1996)] Lev considers that "an intangible asset is a claim to future benefits that does not have a physical or financial embodiment". [Lev (2001) p. 5]

The concept of *intellectual property* is typically used to denote the property right and legal protection issues related to intangible assets. The essence of the concept of intellectual property was best described by Edvinsson–Sullivan, identifying intellectual property as some "codified, tangible or physical descriptions of specific knowledge to which the organization may assert ownership rights and for which

legal protection may be obtained". [Edvinsson–Sullivan (1996) p. 363] Also Reilly–Schweihs (1998) and Lev (2001) highlight the differentiation of intellectual property based on its content.

3.3. Classification of intellectual capital elements

The surplus value in intangible assets is novelty, which may consist either in new knowledge or in a novel combination of existing knowledge elements. This novelty may also be labelled as 'innovation'. Innovation is usually called for by some problems which need to be solved. However, problems are usually poorly structured, and the available information in itself does not provide a solution to them. Innovation builds on the knowledge base of the community which continues to grow over time. Part of this knowledge base is *public* and *universal*; but part of it is *tacit* and *specific*. Tacit knowledge lies hidden in the individual: it is poorly defined, uncodified and private. As opposed to this, universal knowledge is systematic and available. Over time, tacit knowledge tends to be transformed into universal knowledge. [Dosi (1988)] Basu and Waymire (2008) differentiate between the universal knowledge base and the specific knowledge capital deduced from the former. They consider that *cultural intangibles* are ideas and theories that mankind preserves and passes on as time goes by, which reinforces the chances of the individual to survive. Within cultural intangibles, *economic intangibles* are ideas supporting the production of consumption goods and services having a direct or indirect value. *Accounting intangibles*, a subset of economic intangibles, are statutory rights by the exclusive use of which within a certain period of time the company can realise cash inflow.

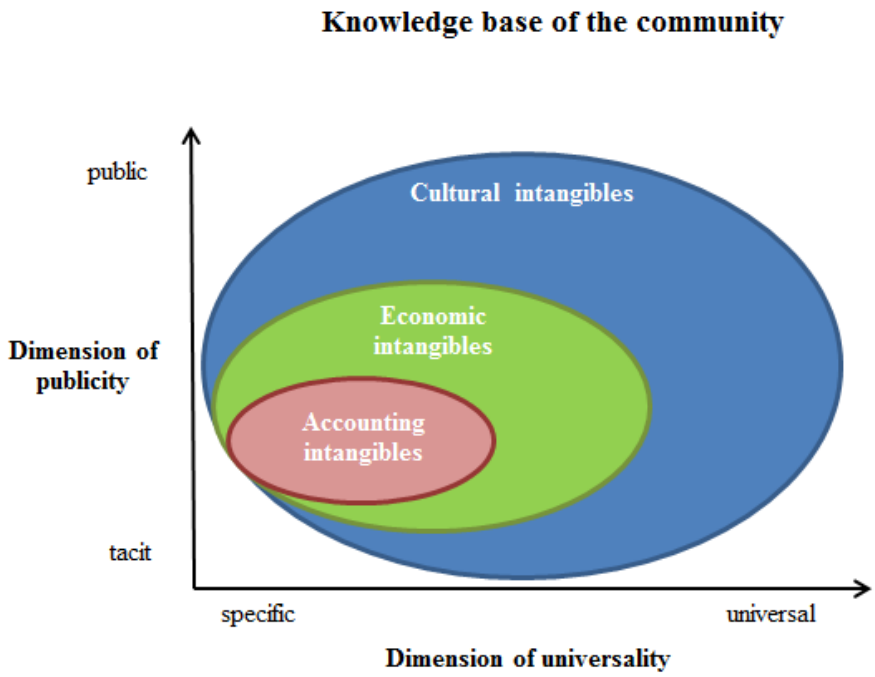


Figure 7. Source: Author's own version based on Dosi (1988) and Basu–Waymire (2008)

Academic literature offers in-depth analyses of the categorisation and classification of intellectual capital [Sveiby (1989), Brooking (1996), Edvinsson–Sullivan (1996), Edvinsson (1997), Roos–Roos (1997), Stewart (1997), Bontis (1998), Reilly–Schweihs (1998), Eperjes (1999), Lev (2001), Mayo (2001), Andrikopoulos (2010)]

In each theoretical classification, *human capital* or individual capital represents a key element of intellectual capital. Human capital is the tacit (hidden) knowledge, collective experience, creativity, problem solving ability, leadership and entrepreneurship possessed by the firm's employees and serving as a basis for innovation and strategic renewal. Human capital is the individual's ability to find an innovative solution for the client. The criterion which best delimits human capital from intangible assets in the accounting sense is that human capital fundamentally cannot be the subject of agreements, i.e. the company is usually unable to exercise control over it. An example of human capital is the know-how inherent in the employees' professionalism, innovation capacity, or reactivity to challenges. [Brooking (1996), Stewart (1997), Bontis (1998), Eperjes (1999), Andrikopoulos (2010)] Mayo (2001) identifies the elements of human capital as follows:

– *individual capability:* extension and depth of experience, personal abilities, professional and technical know-how;

- *individual potential to grow:* willingness and ability to develop;
- *individual performance:* the person's contribution to the operation of the organisation;
- *individual commitment:* alignment to the organisation's values;
- *individual motivation:* the basic determinant of individual performance.

Structural capital is composed of company specific factors (processes, structures and relationship networks). Within structural capital it is useful to distinguish between organisational capital and customer capital.

Organisational capital consists of company-specific business processes, structures and methods which ensure the operation of the organisation and enhance the employees' intellectual performance, and consequently, the performance of the company itself. Organisational capital is the pragmatic use of human capital, making it possible for the latter to create value. Organisational capital is "the knowledge that does not go home in the evening". [Stewart (1997) p. 108] Organisational capital includes corporate culture, management processes, IT and network systems. [Brooking (1996), Bontis (1998), Eperjes (1999)] Roos–Roos (1997) and Edvinsson (1997) differentiate, within organisational capital, between intellectual capital ensuring ongoing operation (such as information flow, cooperation and strategy) and innovation capital fostering business growth (new products, concepts and forms of cooperation). *Customer capital* means the value and knowledge inherent in the relationships with the outside environment which the organisation has built up with its clients and stakeholders. Customer (or relationship) capital is the hardest to develop, as this is the type of capital that is the remotest from the core of the organisation. Customer capital includes customer loyalty, distribution channels, brand value and network relationships. [Roos–Roos (1997), Stewart (1997), Bontis (1998), Eperjes (1999), Andrikopoulos (2010)]

As structural capital is composed of company specific elements, the organisation is more or less able to exercise control over it (unlike in the case of human capital). If the conditions of capitalisation are met, intangible assets included in the balance sheet may be connected with structural intellectual capital elements. Within

intangibles, assets with property rights may be classified as belonging to the category of intellectual property. Figure 8 gives an overview of intellectual capital elements.

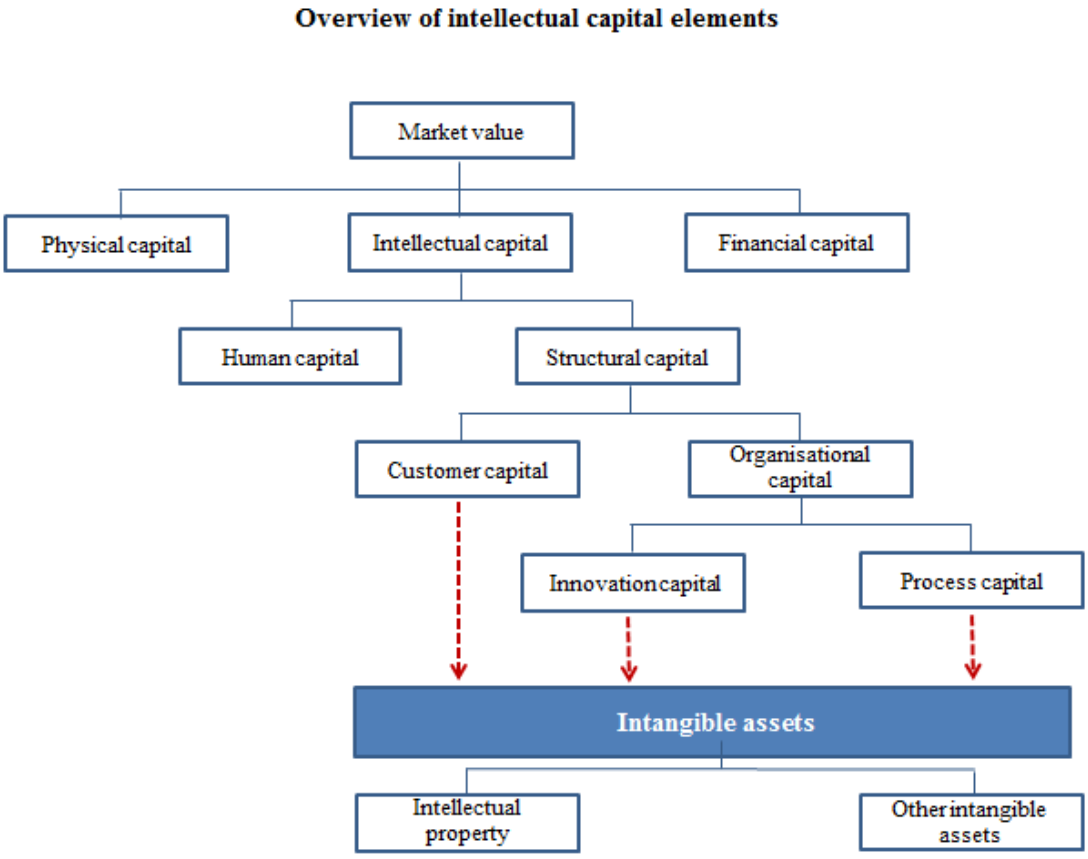


Figure 8. Author's own version

Intellectual capital elements are not independent from one another; on the contrary, they can only create capital value given their mutual interaction and conditionality. Human capital is able to create value in the presence of an appropriate support infrastructure. Without an organisational infrastructure, there is little chance to exploit human capital in an efficient way. On the other hand, the management is responsible for transforming human capital into structural capital. This is very important because as opposed to human capital, structural capital can be controlled, and can thus become an instrument of corporate growth. [Edvinsson–Sullivan (1996), Edvinsson (1997)] A research by Bontis (1998) found that a correlation exists between human, organisational and customer capital, which together exert a significant influence on business performance. These groups build on each other and mutually support each other.

4. Characteristics of intangible assets

4.1. Identifiability

In order to be able to recognise, quantify and evaluate intangible assets both in economic and accounting sense, we need to be able to describe the substance of intangibles in a short and matter-of-fact way. If not so, we only speak of some idea or of some vague characteristic of an asset, which is too uncertain and unclear to be assessed as an individual asset. As a result of their complexity, many intangibles are so entangled with certain physical assets or other intangibles that their identification and separate presentation poses an unsolvable problem. **[**Reilly–Schweihs (1998), Shepherd et al. (2010)]

Perhaps the most freely cited characteristic of intangible assets is that their economic value does not fundamentally arise from some *physical* form or feature. At the same time, some kind of form that can be acknowledged by the outside world (registration documentation, contract, authorisation, computer file, list, data storage facility etc.) is certainly needed for the translation of the substance of intangible assets into practically usable assets (e.g. to be able to exercise ownership rights). This means that intangible assets necessarily have to have some kind of physical incarnation; yet its physical attributes do not play a substantial role in their contribution to business operation.

From an accounting point of view, one of the most salient issues is that it is sometimes very difficult to say when the intangible asset *came into existence*. This date (if no other point of reference is available) can be identified as the date when the intangible asset takes on a physical form. (This, however, represents a certain loss of information, as intangibles tend to obtain a physical form only at a later stage of their life cycles.) If the date of creation of an intangible asset needs to be identified, the same applies for its cessation, even if the owner calculates with an indefinite time of usage. It is therefore an attribute of intangible assets that they come into being and cease to exist at some identifiable point in time or as a result of some identifiable event. [Osman (1991), Reilly–Schweihs (1998)]

4.2. Possession

Romer (1990) differentiates between intangibles and traditional/public assets on the basis of their competitiveness and exclusivity. Traditional assets are competitive and exclusive: they are in individual use and traded on competitive markets. Public assets are not competitive and not exclusive; therefore they do not have a market at all, and their use is conditional on government authority. Intangible assets, on the contrary, are not competitive and cannot be made entirely exclusive.

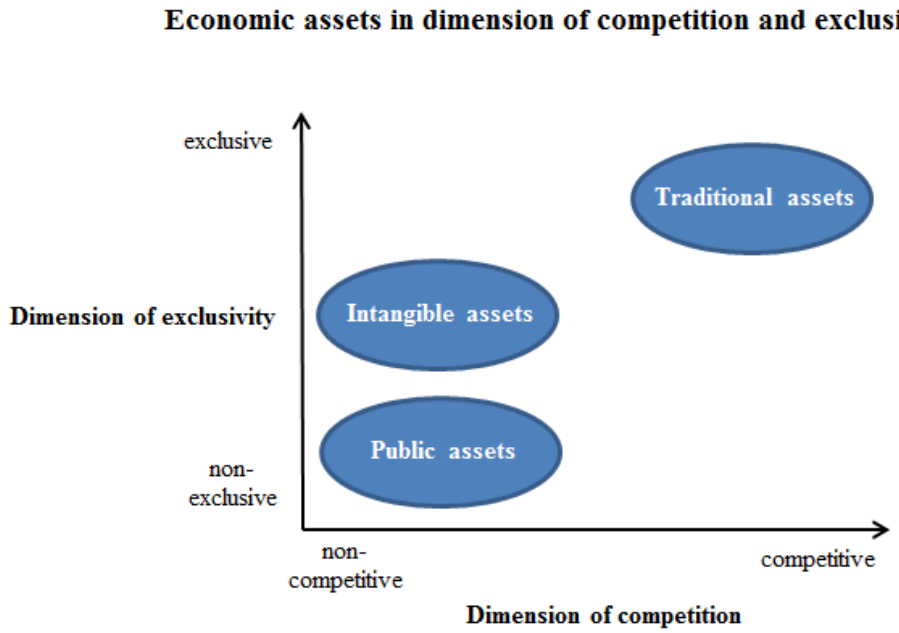


Figure 9. Source: Author's own version based on Romer (1990)

Intangibles are, therefore, assets of a *non-competitive* nature, because their use does not preclude the possibility for others to also use them. This is because intangibles do not have physical features which their use would change. Knowledge as an asset grows through sharing and use, whereas tangible assets typically wear out as a result of use. The knowledge incarnating the value of an intangible asset is therefore not finite (as opposed to traditional economics based on the limited availability of resources); on the contrary, certain intangibles only become more valuable as more users use them. [Laáb (1994), Gyökér (2004), Shepherd et al. (2010)] Stewart formulated this in the following way: "Knowledge can be used without being consumed". [Stewart (1997) p. 170]

It is an indispensable condition of the transformation of intangibles into assets that the company should be able to control them. This requirement is connected with the notion of exclusivity. An economic asset is exclusive if its owner can prevent others from using it. Intangibles are *partially* characterised by *exclusivity*: they can be made exclusive through legal or technical protection, but this exclusivity can no longer be ensured when the knowledge inherent in the intangible asset becomes public property (e.g. after the expiry of the protection period). Another important factor delimiting intangible assets from the other elements of intellectual capital is the specific nature of the related *property rights*. The owner of an intangible asset – similarly to the owner of any other asset – needs to possess every kind of classical property right and liability, such as the right to protect their property in court. The transferability of ownership (as a fundamental feature) does not necessarily mean that the intangible asset can be transferred alone, independently from any other asset element. However, it is a fundamental requirement that the property rights of the intangible asset should be transferable, regardless of the form and elements of the transaction. In the case of other types of intellectual capital (such as human capital) the owner is either unable (or hardly able) to exercise ownership rights of an exclusive nature, or the capital is so organically embedded in business operation that they cannot be separated from the company (this applies, for instance, to a certain part of organisational capital). [Romer (1990), Reilly–Schweihs (1998), Bőgel (1998), Wyatt (2001)]

4.3. Economic benefit

The economic value inherent in intangible assets primarily lies in generation of economic benefits. The fundamental ways to accomplish this is either to contribute to an increase in the company's revenue or to the decrease of its costs. Another way to create economic value is when the intangible asset exerts a positive economic impact on some other (tangible or intangible) asset. Intangibles may create value for the business entity in many forms. Certain intangible assets provide the basis for an activity (franchise), others are most important sources of competitive advantage (new patent, secret know-how), a well-known brand contributes to the increase of the market share, and the sale or licensing of an intangible asset produced by the economic entity results in a direct inflow of economic benefits. The cost volume

connected to the creation of intangible assets is typically far inferior to the order of magnitude of economic benefit they later generate. The creation of an intangible asset may be quite expensive in some cases, yet its subsequent use or multiplication represents a relatively low additional cost compared to other, tangible assets. It is a typical feature (and rather critical from the point of view of economic valuation and accounting recognition) that future benefits generated by intangible assets tend to be uncertain, and the objective probabilities connected to them are not easy to determine. It is also true that intangible assets frequently generate future benefits in an indirect way, through or in association with other (tangible) assets. [Romer (1990), Osman (1991), Reilly–Schweihs (1998)]

4.4. Economic value

As the trade in intangible assets is not systematic (the IFRS framework identifies this as the lack of an active market), their value cannot be identified based on routine market transactions, as it happens in case of most physical assets. Intangible assets are usually created and used within the organisation and are complemented by other intangibles generated within the company; as a result, their *going concern value* frequently differs from their *liquidation value*. Certain intangibles are very expensive, and (due to the uncertainty of their economic benefits) their output is typically not guaranteed. [Bőgel (1998), Gyökér (2004), Basu–Waymire (2008)] Danthine and Jin (2007) underline that the accumulation of intellectual capital and the increase in its value is substantially different from the accumulation of physical capital. Where physical capital grows in proportion with the incurred investment costs, intangible capital is the outcome of a process characterised by occasional breakthroughs, resulting in sudden surges in value of intangible capital. Kovács adds to this that the value of intangible assets "is liable to change very suddenly due to various business decisions and market variations; whereas the value of physical assets is only subject to relatively slight and [...] predictable changes, even in the long run". [Kovács (2011) p. 52]

5. Intangible assets in the financial statement

Several academic studies revealed a certain *decrease in the usefulness of financial statements*. [Lev–Zarowin (1999), Brown–Lo–Lys (1999), DiPiazz et al. (2006)] Research conducted by Fraser–Tarbert–Tee (2009) found that the financial statements of companies with high market value/book value ratios are less informative for the market than those of firms with lower market value/book value ratios. Lev and Zarowin consider that the situation where the usefulness of financial statements decreased and the accounting system became unable to follow the developments was due to an acceleration of business changes. The field where the true and fair reflection of the company's performance and value is most seriously compromised is the accounting presentation of intangible assets (mostly by the incorrect matching of costs and receipts). Whereas the role played by intangible assets in the generation and maintenance of business value becomes ever more widely known and acknowledged, traditional financial statements fail to recognise a substantial part of these intangibles, primarily due to the impalpable nature of the value drivers at the heart of these assets and to the uncertainty of the future benefits they might generate. [Lev–Zarowin (1999), Kang–Gray (2011)] Lev's (2004) studies suggest that the lack of information concerning intangible assets distorts stock market prices and generates high capital costs, and thus results in an incorrect distribution of market resources. Several authors studying the subject of intellectual capital and, more specifically, intangible assets, think that as the balance sheet excludes a number of valuable intangibles, the present financial statements are unsatisfactory, and consequently urge a radical reform of these statements. [See for instance: Edvinsson–Malone (1997), Sveiby (1997), ICAEW (1998), Blair–Wallman (2001), Lev (2001), Meritum (2002)] In a 2001 study directed by FASB[10] *(Financial Accounting Standards Board),* Upton declares: "traditional financial statements do not capture – and may not be able to capture – the value drivers that dominate the new economy". [Upton (2001) p. VII]

[10]FASB is the US committee responsible for establishing financial accounting and reporting standards.

Another research conducted in the late 1990s [Core et al. (2003)] found that the usefulness of traditional financial statements had not decreased, only their explanatory power concerning market processes had been compromised. Skinner (2008) considers that this decrease in the explanatory power may merely be attributable to the irrationally high share prices characteristic of the late 1990s. This is also confirmed by Penman's idea that "financial reporting should serve as an anchor during bubbles, to check speculative beliefs". [Penman (2003) p. 77]

Authors confronting Lev and Zarowin [such as Basu–Waymire (2008) and Skinner (2008)] think that the efforts aimed at a more detailed presentation of intangible assets in the financial statements are not substantiated by well-grounded arguments. Andriessen, Rutledge, White and Upton think that equating book value with market value is not only unnecessary but also impossible. This is also what Pike (cited in: Andriessen 2004) means when he writes that the equation "market value = book value + intellectual capital" is incorrect because the variables are not separable, as required by the equation. This school does not agree that the economy should have changed to such an extent that traditional financial statements became irrelevant and uninformative. Neither has the role of intangible assets substantially increased recently, for they were already present in the early stages of economic development. Furthermore, intangible assets consist in ideas which build on other ideas to create synergies. From this follows that it is impossible to isolate and independently measure the value of any one idea. Certain authors [Graham–Meredith (1937), Basu–Waymire (2008), Skinner (2008)], therefore, consider that the value at which intangibles are presented in the balance sheet has minor importance. What counts is not the book value of intangible assets according to the balance sheet, but their ability to generate income; consequently, their value is explicited not in the balance sheet but in the income statement. The users of financial statements profit more from the measurement of the income generated by the intangible asset than from any attempt to evaluate an asset which in itself cannot be evaluated in a reliable way. Skinner (2008) considers that it is a fundamentally unsound idea to modify the present accounting model to include intangibles in the balance sheet. It is quite probable anyway that a more detailed disclosure of information on intangible assets would not fulfil its intended function. Skinner also stresses that a substantial part of intellectual capital elements not presented in the balance sheet and partly explaining

the difference between book value and market value are closely related to business operation, and consequently lose their value as soon as the company ceases to operate.

6. Basic principles of accounting

6.1. The theoretical structure of accounting

The presentability of intangible assets in the balance sheet and their accounting valuation is closely connected with the nature of the accounting regulations, the overall aim of financial statements, and the accounting principles derived from it.

Riahi-Belkaoui offers a hierarchical deduction of the theoretical structure of accounting. The starting point is the defined aim of financial statements, which leads to a set of assumptions concerning the economic, political, social and legal environment, and to a number of axioms concerning the specificities of the business entity. The principles of accounting (which the author calls the 'general decision rules') can then be deduced from the objective of financial statements and the assumptions [Riahi-Belkaoui (2004) p. 211] The principles of accounting, in their turn, determine the specific accounting procedures used for the recording and presentation of economic transactions.

The Hungarian Accounting Act suggests that the aim of financial statements is to provide *"reliable information providing an authentic and true overall picture [...] in respect of the income producing capability, the development of the assets, the financial situation and the future plans of such entities"* [introductory recital]. The IFRS identifies a similar aim: *"The objective of financial statements is to provide information about the financial position, financial performance and cash flows of an entity that is useful to a wide range of users in making economic decisions. Financial statements also show the results of the management's stewardship of the resources entrusted to it."* [IAS 1 (9)]. The Norwalk agreement of 2002 may be considered as the beginning of the convergence programme between the IFRS and the US GAAP. In the framework of the agreement, the IASB[11] and the FASB committed themselves in a Memorandum of Understanding to align the two frameworks. In their joint project started in 2004, the IASB and the FASB developed a common accounting

[11]The IASB (International Accounting Standards Board) is the accounting standard-setting body issuing the IFRS regulations.

framework which replaced the former ones.[12] The new framework also considers that the aim of financial statements is to *provide reliable information to the stakeholders*. [Framework QB2] We may therefore conclude that the accounting frameworks in force all agree on the purpose of financial statements. Lakatos (2009) provides an in-depth analysis of the objectives and utility of financial statements.

Both in the Hungarian and the international context, accounting principles serve as a cornerstone and a guideline for the preparation of accounting statements. As no accounting regulation (not even the detailed continental framework) can foresee and prepare for every economic contingency which may arise in the course of the entity's operation, it is necessary to lay down a number of basic principles which can be followed and acted upon to find the right direction in the accounting process. The rationale of the accounting principles is somewhat distorted by the fact that some of them tend to contradict and concur with each other. Lakatos finds that it is possible to switch over from one set of principles to another: "If you take more from one, you will necessarily have less of the other; the person preparing the financial statements has a certain amount of discretion regarding the 'ratio' between the two elements". [Lakatos (2009) p. 103]

Hungarian literature [see e.g.: Róth et al. (2006)] classifies accounting principles into three groups: content-related, formal and ancillary. The international frameworks differentiate between *general features, fundamental qualitative characteristics* and *enhancing qualitative characteristics*. For our present purpose, it shall be expedient to classify accounting principles based on their *content-related* (exhaustiveness, truthfulness, relevance, matching, individual valuability, gross presentation, prepayments and accruals, prevalence of content over form), *formal* (clarity, continuity, consistency) or *restrictive* (prudence, cost vs. benefit) character. The theoretical structure of accounting is summarised in Figure 10.

[12]Based on the common principles, IASB amended its *Framework for the Preparation and Presentation of Financial Statements;* and FASB introduced a *Concepts Statement No. 8 Conceptual Framework for Financial Reporting* replacing the former standards *Concepts Statement No. 1 Objectives of Financial Reporting by Business Enterprises* and *Concepts Statement No. 2 Qualitative Characteristics of Accounting Information*.

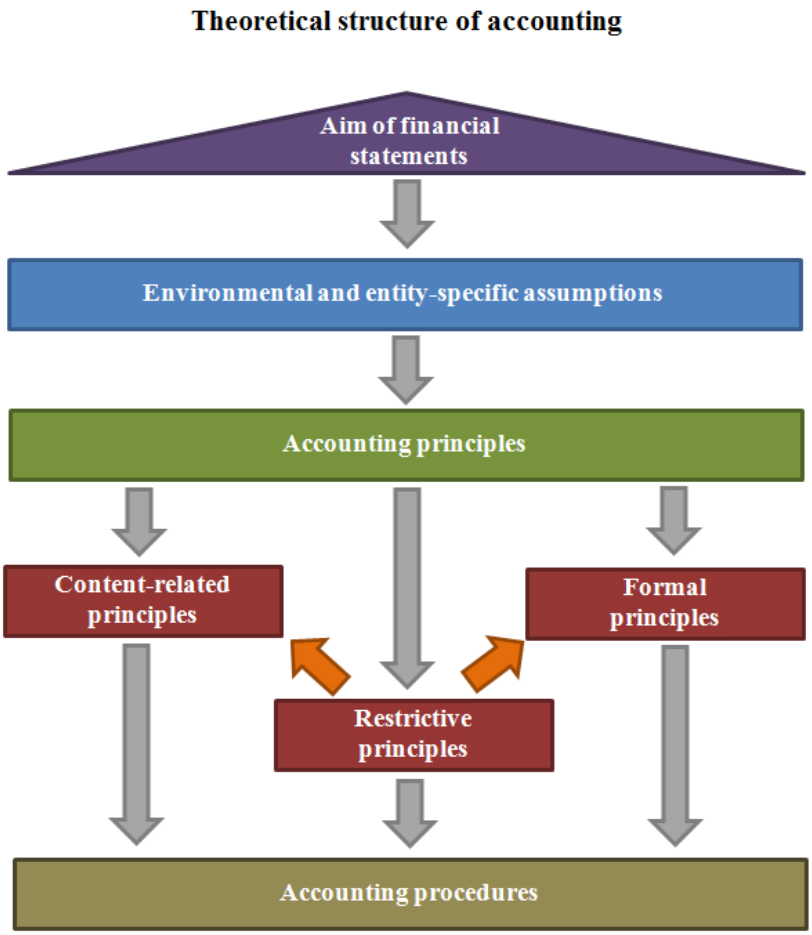


Figure 10. Source: Author's own version based on Riahi-Belkaoui (2004) p. 210

6.2. Use of the basic principles of accounting in the presentation of intangible assets

For the presentation of intangible assets, certain content-related (exhaustiveness, truthfulness, relevance, matching) and restrictive (prudence, cost vs. benefit) principles might be considered as most relevant.

Principles of *exhaustiveness* and *truthfulness* require that the entity should record the impacts of each and every operational transaction in a truthful way. It is very important concerning the financial statement that all *relevant* information, liable to affect the business decisions of the users of the financial statement, should be disclosed. It is not easy to judge whether an information is only relevant if it exceeds a certain financial threshold (like, for instance, in case of the relevance of accounting error margins). It is justified to consider the absolute threshold values in conjunction

with any related circumstances and specificities. A preset threshold might not be a good solution for the additional reason that different groups of business stakeholders would probably consider different thresholds as relevant. [Madarasiné (2009)] Also the IASB holds that it is not possible to determine a single absolute relevance threshold value, applicable in all situations for all companies. Literature, in general, finds that the principles of reliability (truthfulness) and relevance seem to concur. The information content of a financial statement is equally compromised by the lack of inclusion and capitalisation of relevant assets and by the inclusion of uncertain, unreliable assets. *Matching principle* requires that revenues have to be presented in the period when they were realised, and also the expenditure corresponding to the output should be allocated to the same performances. This principle strongly applies to the capitalisation of intangible assets, as the expenditures related to the acquisition or production of intangibles are typically incurred much earlier than the economic benefits they generate. The separation in time of the expenses and the corresponding returns would result in the presentation of an untruthful income. Capitalisation ensures that the amortisation presented is in alignment with the incurrence of future returns, and reflects the resources corresponding to the performance in a proportional way.

The assertion of these content-related principles is further restricted by the principles of prudence and cost/benefit. *Prudence*, highly characteristic of accounting systems, represents one of the main obstacles to the capitalisation of a number of intangible assets with historical costs which are difficult to measure precisely, or corresponding to future returns of which the realisation is doubtful. Also, the principle of prudence is at the root of the necessary impairment and possible occasional appreciation of assets. Principle of *cost/benefit* requires that the usability of any information disclosed in financial statements should be proportional to the costs related to the generation of the given information. Costs of the disclosure of intangibles (e.g. data collection, processing, analysis and revision) can usually be quantified in terms of money and time; in the case of non-traditional information (e.g. quantification of value of intangibles not presented in the balance sheet) this cost may be rather high. Benefits of disclosure (e.g. more efficient management control, a decrease in the capital costs or provision of information for stakeholders) are, however, typically much more difficult to measure and confirm.

7. Conditions of the capitalisation of intangible assets

7.1. Recognisability and presentability

Wealth, in an accounting sense, may be conceived as the totality of phenomena "with characteristics that make it possible to recognise and valuate them, and which, consequently, carry an economical content for the business entity". [Baricz–Róth (2002) p. 7] The primary function of balance sheet is to give an exhaustive presentation of the company's wealth. Baricz (1990), however, points out that the 'total settlement of accounts', i.e. the final closure of the company processes, can only be performed when the company ceases to operate. The division of the entity's operation into business years is somewhat arbitrary, and thus represents an artificial interruption of the business processes. This necessarily generates uncertainty, which affects both the income and the equity capital of the company. Bearing the interests of the market players in mind, the regulatory frameworks have created criteria systems which regulate the recognisability of each asset element, their presentability in the balance sheet and the possibility to assign them a certain value. These are called 'capitalisation criteria', or 'activation criteria' (for assets) and 'passivation criteria' (for equity and liabilities).

Deák (2008) differentiates between recognisability and presentability. Recognition criteria help decide which asset elements can be recognised in the accounting procedure and which remain outside the scope of accounting. Recognition criteria make it possible to "differentiate between assets interpreted (used) at the entity's level and those interpreted (accounted for) at the accounting level". [Deák (2008) p. 497] The establishment of any system of conditions entails the inclusion of certain elements and the exclusion of others. Presentability in financial statements (recognition) complements the criterion system of recognisability. "Concept of presentability makes it possible to include in financial statements certain factors which are excluded from balance sheet according to the strict rules of recognisability." [Deák (2008) p. 498] The different sections of the report (balance sheet, income statement) are typically accompanied by narrative explanatory notes in

order to present an exhaustive overall picture of the entity's wealth (following the cost/benefit principle and remaining within the limits of reasonability).

The way each accounting framework tries to recognise assets is closely related with the specificities of the legal systems and accounting regulations in place. In Anglo-Saxon countries relying heavily on precedence, accounting regulations are based on standards and the professional activity is mainly autoregulative. Regulatory frameworks building on Anglo-Saxon traditions (including the international accounting frameworks) recognise assets in a general way and the boundary between asset elements that can be activated or not is drawn up following the capitalisation criteria. On the other hand, the continental legal system is based on itemised legal provisions; accounting regulations are detailed and prescriptive in their nature; and the professional activity is also partly controlled by the central authority. In the continental frameworks, company wealth is not presented based on a set of top-down parameters, but following a bottom-up approach based on the item by item enumeration of each asset element. [Deák (2008)] There is, however, one common feature of both systems: where the conditions are fulfilled, or where an economic phenomenon corresponds with some predetermined asset element, then its recognition in the balance sheet is obligatory. In some cases, the regulations leave a certain amount of choice concerning the capitalisation, but such instances are rather an exception.

It might be worthwhile to have a deeper look into the issue of capitalisation criteria because one of the key issues related with the recognition of intangible assets is the presentability of intellectual capital elements in the balance sheet. We may say, therefore, that capitalisation is an accounting operation that makes it possible to recognise, describe, assign a value to, and include in the balance sheet, those economical phenomena which fulfil a certain predetermined and defined set of criteria. Having regard to the differences between standard-based and continental frameworks in the field of asset recognition, it seems advisable to present the capitalisation-related issues separately regarding the international standards and the Hungarian regulation.

7.2. Capitalisation criteria in the international frameworks

In the international frameworks (IFRS, US GAAP) the presentation of an economic phenomenon as an intangible asset is a multi-level process within which the phenomenon needs to fulfil a number of predetermined criteria. We may also call this process a *'capitalisation test'*, at the outcome of which we can decide whether the economic phenomenon may be capitalised, i.e. presented in the balance sheet. The first step of the activation test is conceptualisation, the identification of the economic essence of the phenomenon. When classified as an asset, another explicit requirement relates to the recognisability of the phenomenon as an intangible asset. Having met all the conceptual criteria, the last step of the capitalisation test is to check the suitability with the recognition criteria.

Capitalisation test in case of intangible assets I.

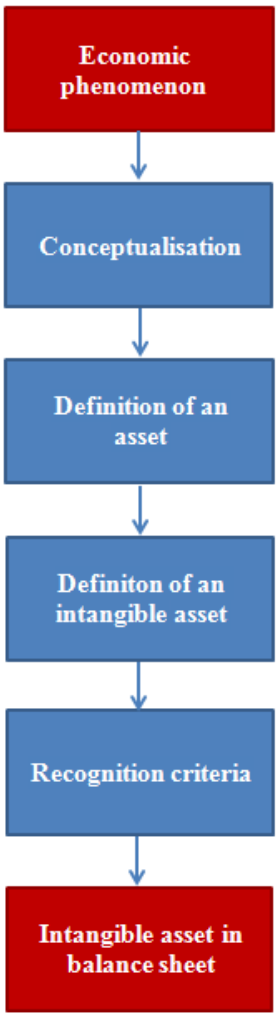


Figure 11. Source: Author's own version

7.2.1. Criteria applicable to the capitalisation of assets

The requirements concerning asset recognition are quite similar in international regulations (IFRS and US GAAP). An economic phenomenon may be recognised as an asset if it is under the entity's *control* as a result of some *past transactions*, and if the entity expects a *future economic benefit* to arise from the possession of the asset.

The criterion of control means that the entity is able to acquire any benefits generated by the asset and to exclude others from doing so. Assets need to get into the possession of the entity as a result of past transactions (acquisition, internal development, government grant etc.); the mere intention to acquire the asset in future is insufficient. The ability to control the asset is best confirmed by any rights which would be enforceable in court (such as, for instance, protection guaranteed by industrial property rights). The qualified workforce included in the human capital is not controlled by the entity, as it is unable to prevent its migration and its subsequent use by other entities. Another example would be customer loyalty or market share, forming part of the customer capital. These intellectual capital elements are under the entity's control only if they are protected by law and enforceable (c.f. confidentiality clauses in employment contracts or a purchased customer database). Part of assets is also owned by the entity, but ownership is not a condition of capitalisation. Ownership of a recognised asset may be only partial, or even nonexistent in terms of explicit legal provisions, like in the case when an entity is able to control know-how through confidentiality. Although Hungarian civil law provides a general protection for know-how as an intellectual property, actually no dedicated, explicit legal protection exists in this respect. Instead of the ownership of the assets, therefore, the examination should focus on the right to control them.

Assets can generate future economic benefit in a direct and an indirect way. First, we consider as assets those elements of wealth which are directly sold or which generate direct revenue in some other way, for instance through lease. Second, resources that play a role in the production/service process through which they contribute to the production of goods or services and thus create the conditions to generate revenue, are also recognised as assets. 'Economic benefit' does not only mean the realisation of revenue but also the decrease of the direct or indirect costs the entity has to incur.

Monetary assets fulfil an economic function in the financial processes, and can thus be used to pay for liabilities or as owners' allowance.

7.2.2. Criteria applicable to the capitalisation of intangible assets

Within assets, intangibles are *identifiable, non monetary* assets *without a physical form*. For the purposes of the international frameworks, identifiability means that the asset may be separated from the entity (can be sold, transferred, licensed, leased, bartered etc.), or arises from some contractual or other legal rights, regardless of the fact whether these rights are transferable or if they can be separated from the entity or from any other rights or liabilities. The criterion of identifiability makes it possible to distinguish identified intangible assets from non-identified intangible resources defined as 'goodwill' by accounting regulations. Goodwill is an additional payment based on the expectation of future benefit originating from a synergy between identifiable assets or from assets which do not meet recognition criteria. The separation of identifiability as a recognition criterion suggests that intangibles are fundamentally different from tangible assets. The requirement of identifiability certainly also applies to tangible assets; yet in their case, no such stress has been laid on this feature [IASB (2007)]. Monetary assets include financial assets and receivables of a determined or determinable amount. When delimiting intangibles from other types of assets – mostly physical ones – we first need to examine whether the tangible or the intangible character is more decisive in the value of asset and in its ability to generate revenue. In most cases, intangible assets also take a physical form (e.g. a software is written out on DVD), but the primary function of the physical data storage facility is to ensure the durability and replicability of the asset and to provide for a more efficient usage of the economic benefit. Some physical and monetary assets may also have certain intangible features (e.g. a beautiful view from a plot is an intangible value), but these only affect the value of the asset in question, and cannot be valuated as independent assets.

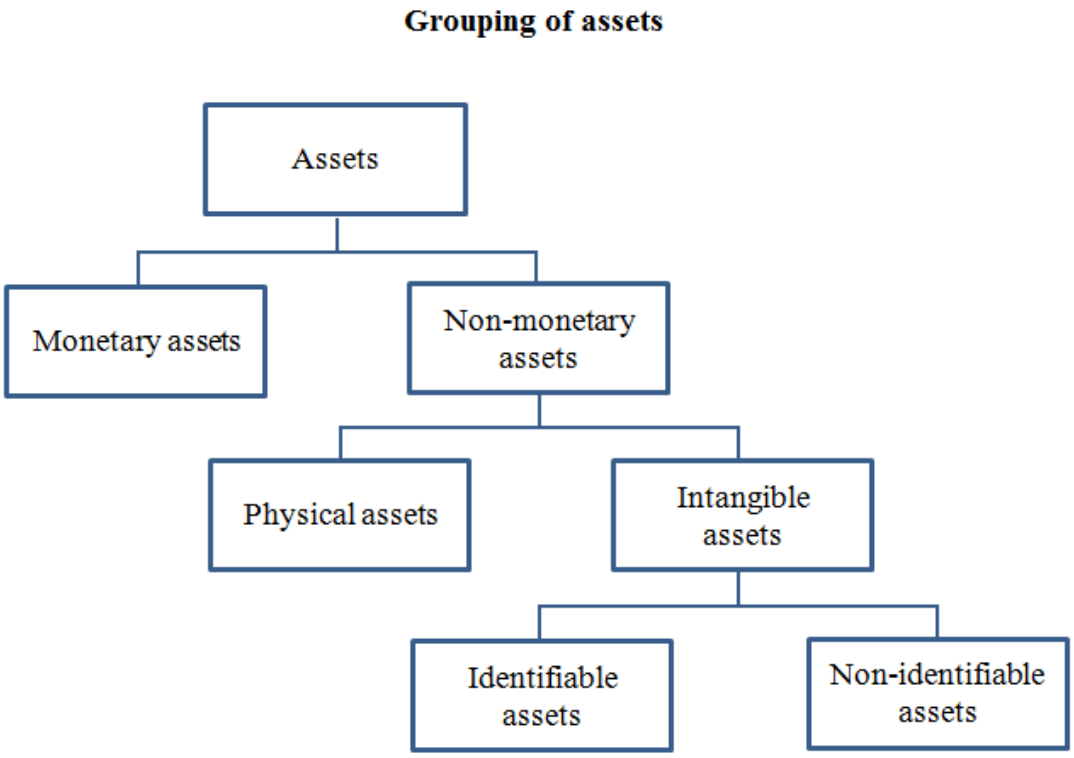


Figure 12. Source: Author's own version

7.2.3. Recognition criteria

To the criteria concerning assets and intangibles, further requirements apply regarding the presentability of the assets in balance sheet. Two fundamental conditions of recognition are that *expected future benefits attributable to the asset should flow to the entity*, and that the *value of the asset can be measured in a reliable way*. As far as the realisation of future economic benefits is concerned, the entity has to make a reasonable and justifiable best estimate based on the consideration of business conditions prevailing throughout the expected useful life of asset. This means that when making decision about capitalisation, the entity has to estimate the realisability of future benefits arising from past expenditure. In this regard, the entity must take into consideration the balance of the objective probabilities of the returns, as well as their position in time and their quantity. [Wyatt (2001)] Probable future benefits do not necessarily represent a positive net return. The condition may also be satisfied if the net return is negative but the gross return is positive. In this case, the necessary correction can be best performed by applying valuation (e.g. impairment) rather than by excluding the possibility of capitalisation. [IASB (2007) p. 27] With

reference to recognition, the concept of probability has to be used in a general sense: probable refers to that which can reasonably be expected or believed on the basis of available evidence or logic but is neither certain nor proved. [SFAS 6 (footnote 18)] This interpretation accords well with the specificities of conditions surrounding the entity, as business environment is also uncertain, and one situation can lead to several outcomes. "Although the use of the concept of asset or liability necessitates a certain amount of estimation, the probability rate does not constitute part of the definition. The probability of future economic benefit and the rate of reliability of the estimation of the corresponding value is a matter of capitalisation and measurement." [Storey–Storey (1998) p. 131] In connection with the reliability of value measurement, the IFRS Conceptual Framework requires that information must be complete, neutral and free from error [paragraph 4.38]. The value can also be identified by estimation, provided it is built on reliable assumptions. In addition to the above, the US GAAP also mentions relevance as a general recognition criterion.

Capitalisation test in case of intangible assets II.

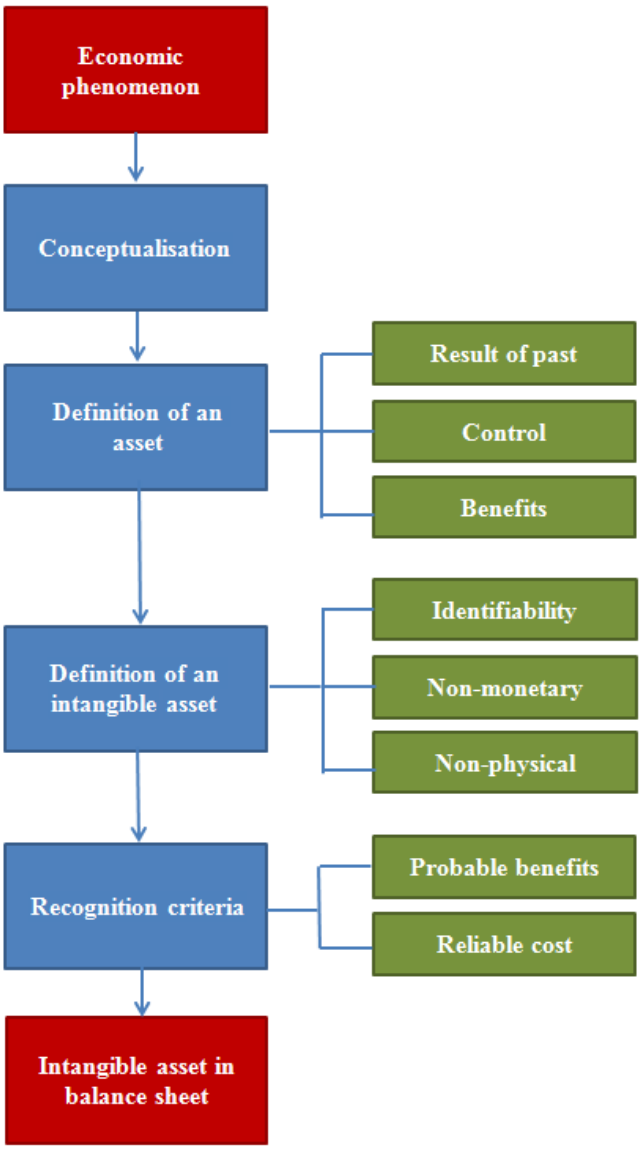


Figure 13. Source: Author's own version

7.3. Capitalisation in the Hungarian framework

The Hungarian Accounting Act does not set out general requirements concerning capitalisation. Instead, it provides an itemised list of all asset elements to be recognised as assets or equity and liabilities. The basic idea behind asset recognition is reflected in the following provision:

Non-current assets and current assets, which are held or used by the entity for its operations (not including leased assets), shall be shown in balance sheet as assets,

regardless of whether the entity gains ownership of such assets upon the satisfaction of certain conditions prescribed by law or stipulated in the contract. Deferred expenses and accrued income shall also be shown as assets. [Article 23(1)]

The Accounting Act then provides a detailed list of the non-current and current assets which, based on their types and characteristics, have to (or, in some cases, may) be recognised. The provision cited above nevertheless contains, although in an implicit way, the content-related requirements which are explicitly set out as capitalisation criteria by the international regulations. The formula "held or used by the entity" refers to the fact that the economic transaction has been accomplished in the past. The asset is held or used by the entity "for its operation", i.e. with the aim to realise economic benefits. The fact that the asset is "held or used by the entity" implies that the entity is able to exercise control over it. The control function is further confirmed by the interpretation according to which the recognition of an asset is not conditional on ownership rights. Despite the differences in the approaches used by the regulations, it is clear that contentwise, the conditions of recognition are established on quite similar lines in the international and Hungarian regulations. The Accounting Act subsequently identifies the asset groups to be classified as non-current assets, and – still in line with IAS 38 regulating intangible assets – it provides for the delineation of intangible assets from tangible and monetary assets. The "non-material" nature is also explicited in the itemised list of intangible assets. Due to its approach, the Hungarian regulation does not provide a direct description of recognition criteria (the probable realisation of future benefits and reliable value measurement); nevertheless, they are actually present, just scattered all over the provisions. This is also suggested by the fact that the use for the activity/operation of the entity is underlined both in the definition of the asset and in the part explaining the identification of non-current assets. The requirement of future benefits (e.g. capitalised value of reorganisation, capitalised value of research and development or goodwill) is present in the case of the quasi totality of intangible asset groups. Concessions, licenses and similar rights can be recognised as intangibles if they are acquired rights, while regulations typically recognise the probability of future benefits connected with purchased assets. The only section without any reference to the condition of future benefits concerns the identification of intellectual products, but the requirement can be implicitly deduced from the fact that these products also

serve the entity's operation. The requirement of reliable valuation is set out in the form of detailed provisions concerning the cost value.

Fulfilment of capitalisation criteria, formulated in a direct or indirect form, at any given time is not necessarily considered as final. It might happen that an asset cannot be capitalised at a certain moment in time, but later, if circumstances change and more precise information or more reliable estimates are available, conditions of capitalisation may be met. If due to the failure at the capitalisation test, certain resources can only be presented as expenditures, this does not signify that those expenditures have not been incurred in the interest of the business activity. It only means that the probability of future benefits, or their relationship with the resources, cannot be demonstrated with due assurance. Regulations usually provide that economic factors which do not meet capitalisation criteria but which are relevant for users of financial statements should be presented in notes.

7.4. Advantages of capitalisation

Several theoretical and empirical studies underline the advantages of capitalisation. Its most frequently cited benefit, in terms of accounting, is that due to the matching principle, it ensures the alignment of costs and revenues in time, and therefore disclosed results reflect the performance of the company more truthfully. Many researchers, however, resent the fact that accounting systems judge and manage tangible and intangible assets in a different way, especially in case of intangibles produced by the entity itself. "This asymmetric treatment of capitalising physical and financial investments while expensing intangibles leads to biased and deficient reporting of firms' performance and value." [Lev (2001) p. 7] In addition to the lifting of the asymmetry, Lev and Zarowin (1999) also consider the assessment of the effectiveness of innovation activity as an advantage. In an empirical research, Lev and Sougiannis (1996) examined the impact of the capitalisation of R&D expenditure, and found that it conveys statistically reliable and economically relevant information to stakeholders. The empirical evidence of Deng and Lev (1998) confirm this in relation to the disclosure of the fair value of R&D activity. [Cited in: Powell 2003)] Matolcsy and Wyatt (2006) reached the same conclusion, and found in their

study that the capitalisation of intangible assets exerts a positive impact on the valuation and estimation of the entity's future performance.

7.5. Restrictions applicable to capitalisation

7.5.1. General restrictions applicable to capitalisation

Research by Skryme (1999) showed that most listed companies do not present intangible assets in their balance sheets. The low capitalisation rate of intangibles (compared to other asset types) has several reasons. The problem often occurs at the level of conceptualisation and *identification*. Identification is typically hindered by the fact that intellectual capital elements are closely and mutually interrelated and form a complex unit. It is also difficult to define – particularly for internally developed intangibles – the point in time when the intangible asset came into existence.

Resources belonging to the category of human capital (and partly to customer capital) typically do not meet capitalisation criteria due to the lack of the right to exercise *control* over economic benefits. Another critical point concerning the capitalisation of intangible assets is the uncertainty of future benefits and the reliability of any relevant information. Upton (2001) identifies these problems with time and the closeness of the relationship, and summarises them under the names of '*time-gap*' and *'correlation-gap*'. In his opinion, one of the factors undermining capitalisation is the fact that costs related to intangibles are incurred much earlier than economic benefits could be reaped *(time-gap)*. Furthermore, correlation between the costs incurred and the value of future benefits is far more difficult (or hardly possible) to prove than in case of tangible assets *(correlation-gap)*. Webster (1999), Wyatt (2001), Austin (2007) and Skinner (2008) underline the uncertainty of investments into intangibles. Uncertainty primarily consists in the incompleteness of available information.

In addition to the difficulty to prove the probability of future benefits, also difficulties related to the criterion of measurability and reliability represent a major

issue. Intangible assets (due to their nature) do not have observable market prices, and therefore we cannot speak of an efficient intangible market. In financial theory, a capital market is efficient, if its prices reflect every relevant information. [Fama (1970)] Existence of an efficient market is the precondition of preventing information asymmetry, the commissioner/agent issue and market failures, and forms the basis of the determination of an equilibrium price. However, intangibles market is not efficient, as it is characterised by a low number of transactions. Part of intellectual capital elements cannot at all be separated from the organisation; in other cases, their value is actually due to their rarity or confidentiality. Even if transactions do occur, they are sporadic, and can hardly represent a basis to determine the prices of other assets; not to mention that prices are usually not made public. This 'non-efficient' market of intellectual capital is unfavourable for the development of exact pricing mechanisms, which increases contractual prices. [Wyatt (2001), Skinner (2008), IAS 38 (78)] The measurement of value can also be a problem in case of internally developed assets. This is partly related to the issue of identifiability. It frequently happens that by the time an internally produced intangible asset becomes identifiable and recognisable, part of the related costs have already been recognised earlier as expenditure, and consequently the cost value determined at the moment of identification is necessarily incomplete. Furthermore, part of intangible assets is generated in the course of continued business operation, and their costs cannot be clearly delimited from the operational costs. This problem is related with the issue of intangibles produced consciously or unconsciously. Wyatt (2001) considers that the main capitalisation issue is that accounting concentrates on intangible assets with 'objectified' features. This is due to the fact that capitalisation is only possible if justifiable costs are incurred as a result of some past transactions, and if future benefits can be objectively estimated.

The low capitalisation rate is partly due to the *different nature of tangible and intangible assets*. Assets acquired through material, physical investment can usually be directly connected with concrete products, services and cash flows. More information tends to be available on time horizon of the investment and the realisation of cash flow, because investments into tangible assets are usually realised when production phase is already within close reach. On the other hand, assets from intangible investments are rather seen as future cash flow options. This means that

investments into intangibles can be perceived as options on future cash flows which are frequently conditional on discretional future investments, and therefore it is difficult to establish a direct correlation with future returns. [Myers (1977), Shin (1999), Wyatt (2001)]

7.5.2. Restrictions applicable to capitalisation as stipulated in regulations

Accounting frameworks usually acknowledge the fulfilment of recognition criteria in case of external acquisition (typically purchase transactions or acquisition as part of a business combination). The predefined restrictions concerning capitalisation mostly apply to R&D activities and self-developed intangible assets.

As regards R&D activities, each framework typically distinguishes between the *phases of research and development*, as well as their respective expenditures. The Hungarian definition differentiates between basic research and applied research, whereas international frameworks usually refer to research activity as such. Research phase typically includes activities aiming to acquire new scientific or technical knowledge and to reveal new relationships, without necessary reference to any subsequent application or use *(basic research)*; or to acquire new knowledge needed for the development of novel products, procedures or services or for the significant further development of existing ones *(applied research)*. *'Experimental development'* as used by the Hungarian framework is the activity whereby the entity uses research results or any such knowledge for economic purposes, in order to create new, modified or improved products, procedures or services. Hungarian legislation on research and development[13] makes it clear that any usual, periodical or routine modifications performed on products, production procedures or services are not covered by the scope of R&D even if they otherwise result in the development of the given product, procedure or process.

Regarding the possibility to capitalise *research costs*, national and international regulations are quite divided. International frameworks follow a conservative approach and consider research costs as expenditure. Within the IFRS, IAS 38

[13]Act CXXXIV of 2004 on Research and Development and Technological Innovation.

considers the entire cost of the research phase as expenditure; what is more, it stipulates that if an entity cannot distinguish the research phase from the development phase, it has to treat the expenditure of the entire process as if it were incurred in the research phase only (and, consequently, to recognise it as expense). The corresponding regulation of the US GAAP (SFAS 2) similarly provides that the costs incurred in relation to the research phase have to be recognised as expenditure. Certain national regulations (e.g. Australia, Russia, Belgium, Spain) allow the conditional capitalisation of research costs, but very few (e.g. Portugal, Luxembourg, Finland) allow the same unconditionally. [Nobes (2001)[14]] The Hungarian regulation follows the conservative, prudent approach and does not allow the capitalisation of costs related to basic and applied research.

Regulations usually set out conditions for the capitalisation of *costs related to development*. IAS 38 stipulates that an intangible asset arising from development shall be recognised if, and only if, the entity can demonstrate all of the following (which conditions constitute specific requirements additional to the general capitalisation criteria):

- technical feasibility;
- intention to complete the intangible asset and use or sell it;
- ability to use or sell the intangible asset;
- generation of future economic benefits;
- the availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset;
- ability to measure reliably the expenditure attributable to the intangible asset during its development [paragraph (57)].

The IASB (2007) considers that the different accounting treatment of the R&D phase does not have a conceptual basis, but should be justified by the fact that development costs are much easier to allocate to identifiable projects or assets than research costs.

[14]The International Forum on Accountancy Development (IFAD) performed a research in 2000 and 2001 to analyse the differences between national accounting regulations and the IFRSs using a questionnaire methodology. In 2001, 62 countries participated in the research, and the national regulations were assessed based on 80 aspects of accounting.

The US GAAP (SFAS 2) requires that not only research but also development costs should be entirely recognised as expenditure. The reasons for it are given as follows:

- uncertainty about the future benefits, high failure rate of projects;
- remote and hardly demonstrable causal relationship between expenditures and benefits (revenues);
- difficulties of measurement of future economic benefits;
- the capitalisation of these costs does not provide any useful extra information regarding the entity's performance [paragraph (39)–(59)].

As a specific exception, SFAS 86 on accounting for the costs of computer software makes it possible, upon certain conditions, to capitalise costs related to software development. Any costs incurred in connection with the technological feasibility of a computer software product (planning, designing, coding, and testing) qualify as R&D costs and should be recognised as expenses when incurred. However, it is possible to capitalise the costs of producing product masters incurred subsequent to establishing technological feasibility but only until the product is available for general release to customers. Ken Wasch, President of Software Publishers Association, wrote to Dennis Beresford, President of the FASB in a letter dated 1996 [cited in: Upton (2001) p. 66]: "Technological feasibility is not reached until very late in the development cycle. Subsequent costs are inherently immaterial so most companies charge all software development costs to research and development expense. [...] Given the difficulties in determining when technological feasibility is established, as noted above, financial reporting and financial statements would be more reliable and consistent if all software development costs were required to be charged to expense." Also Lev and Aboody (1998) underline the flexibility of the standard, pointing out that it might serve to justify either capitalisation or presentation as expenses. National regulations typically allow the capitalisation of development costs upon certain conditions only. If these conditions are fulfilled, capitalisation may be either an option (France, UK) or an obligation (Australia, Canada, New Zealand). [Powell (2003)] The Hungarian framework makes it possible, upon the entity's discretion, to capitalise the costs of development phase as asset. Capitalised development costs as an asset play a dual role. Capitalised value of development begun but not finished until the balance sheet date of the given business year may also include costs related

to products which may be capitalised as inventories, tangible assets or intellectual products only later, when experimental development phase is accomplished. Furthermore, within the capitalised value of development, out of the costs which are usable in the future and are expected to pay off in sales revenue, only the excess of the (expected) market price of the created and capitalisable products can be taken into account. Having regard to the fundamentally risky nature of research and development activity, Hungarian accounting regulation lays stress upon the principle of prudence in relation to its capitalisation, and provides for the retainment of a reserve upon capitalisation.

Regarding any *other internally developed intangible assets* outside the scope of R&D, it is usually difficult to decide about capitalisation because at the time when the costs related to the production are incurred, future benefits tend to be very uncertain. IAS 38 specifically provides that internally generated brands, mastheads, publishing titles, customer lists and items similar in substance shall not be recognised as intangible assets, as they cannot be distinguished from the cost of developing the business as a whole [paragraph (63)]. The US GAAP basically makes it possible to capitalise acquired intangibles only; most of the costs of internally developed assets have to be recognised as expenditure. The reason for this, inherent in the US GAAP, is that an important part of the uncertainty related to future economic benefits is already dissipated in the development phase preceding the acquisition, and consequently the acquisition itself confirms the expectations concerning future benefits; and that the cost of an asset acquired in a market transaction reflects the economic value of the given asset with more probability and reliability. [Jennings–Thompson (1996) p. 492]. National regulations are very varied in this respect. They generally allow the capitalisation of intangible assets other than R&D and goodwill on certain conditions. As capitalisation criteria of internally developed intangible assets, practically all regulations require the substantiation of future economic benefits and reliable value measurement. Identifiability is also a frequent condition, but entities are generally not expected to demonstrate a direct market correlation. [Stolowy–Jeny-Cazava (2001)] The UK GAAP, for instance, provides that an internally developed intangible asset may be capitalised only if it has a readily ascertainable market value. [FRS 10 (14)] The French regulations do not object to the activation of a self-created brand name, but this hardly happens in practice. The

Australian framework holds that internally developed, identifiable intangibles can be capitalised at fair value if general capitalisation criteria are met. [Powell (2003)] The Hungarian regulation does not set up any specific restrictions concerning other internally produced intangible assets.

As far as restrictions are concerned, IAS 38 provides that *start-up costs*, training costs, expenditure on advertising and promotional activities, and *expenditure on relocating or reorganising part or all of an entity* shall obligatorily be recognised as expenses [paragraph (69)]. As opposed to the prudent approach of IFRS, national regulations are usually less restrictive regarding the capitalisation of such cost types. Founding costs can be capitalised in a number of national frameworks (e.g. Germany, Italy, Spain, Russia), but this is much less frequent in case of restructuration costs (e.g. Argentine, Lithuania, Spain). The possibility to capitalise training and advertisement costs as assets is rather rare (e.g.: Argentine). [Nobes (2001)] The Hungarian framework – in line with several other national regulations – allows the capitalisation of costs related to the start-up, transformation and restructuration of the business activity, provided that these costs are expected to pay back in operational revenues after the accomplishment of the foundation/restructuration. Similarly to the capitalisation of development costs, the recognition of founding and restructuring activities as an asset depends on the entity's choice, but a reserve should be set aside if the activation takes place.

7.6. Criticisms concerning capitalisation criteria

Schuetze considers that the *asset definition* formulated in international frameworks is so complex, abstract, wide, inclusive and indefinable that it is entirely unsuitable to resolve any problems. The author calls this definition a 'black box', and particularly deplores the lack of the requirement of *negotiability*, which however cannot be clearly deduced from the conditions of capitalisation. Schildbach thinks that in the capitalisation criteria of the IFRS, there is a huge difference between the set of assets which should be capitalisable according to the general definition of asset and those which can actually be capitalised in balance sheet. The IFRS's asset definition "suggests that financial statements give a comprehensive and future-oriented

overview of the company wealth". [Schildbach (2006) p. 37] This definition is completely dissipated by the specific capitalisation requirements: for instance, internally developed intangible assets can only be recognised as assets in case several additional conditions are met. The author also criticises the fact that the IFRS system fails to provide guidance as to when and with what probability future benefits may be accepted as fulfilling the corresponding basic capitalisation requirement. In Schuetze's opinion, the problem mainly lies in the fact that when discussing an asset and its value, professionals primarily consider the *cost aspect*, instead of focusing on the asset itself or on future benefits it is expected to generate. This also represents a problem for accounting procedures, as "auditing the recoverability or impairment of something that is just a cost, a cost not associated with a real thing, is more than hard". [Schuetze (1993) p. 70] Wyatt (2001) formulates a similar opinion: she considers that as a result of their recognition as expenditures, intangible assets, their changes, and the returns on intangible investments fail to be quantified.

Regarding the conditions of capitalisation as provided for in the frameworks, Wyatt deplores that capitalisation criteria disregard the investment intensity and average innovation level characteristic of the given *technological sector*. Conditions of capitalisation are solely conditional on the expected returns of the individual assets and projects of the entity and on the reliability of the correlation with historical expenditure. Actually, higher innovation intensity is a feature of shorter technology cycles[15]. The materiality of investment effort tends to increase the probability of at least some commercially viable innovations on average across the firms in a technology sector. [Wyatt (2001) p. 105]

Another frequent criticism in academic literature concerns the *different treatment of tangible and intangible assets*. These criticisms hold that intangible assets are not less assets only because they are not tangible. Therefore, their capitalisation should follow the same rules as the capitalisation of any other type of assets. [Hendriksen–van Breda (1992), Lev–Zarowin (1999), Powell (2003)]

[15]By technological cycle, Wyatt means the period of time, expressed in years, necessary for a new idea to achieve the phase of commercial feasibility.

Accounting regulations are also frequently criticised for imposing different rules for the treatment of acquired and *internally generated intangible assets*. Critics declare that the asymmetric treatment of intangibles of different origins reflects the conservative approach of accounting. Juhász (2004a) points out that "if the company does not buy the given asset from a third party but develops it itself, in most cases it is not allowed to recognise the asset in its balance sheet". [Juhász (2004a) p. 66] Although it is not necessarily true that internally developed intangibles are always excluded from the balance sheet, Juhász here highlights the prudent approach taken by accounting. Several authors consider that the recognition of internally produced intangible assets is justified by the requirements of transparency, comparability and harmonisation. Circumstances of the creation of intangible assets should not affect the judgement whether it should be interpreted as an asset or not for the purposes of accounting. [IASB (2007), Petkov (2011)] Schildbach gives a specific example to demonstrate the conceptual contradiction in the IFRS's treatment of internally produced and acquired intangible assets. Whereas in the case of internally developed intangibles, several supplementary criteria in addition to the general conditions of capitalisation need to be fulfilled, the IFRS displays "unlimited generosity" concerning intangible assets acquired in a business combination. [Schildbach (2006) p. 38] IAS 38 actually declares it probable that an intangible asset acquired in a business combination will generate future benefits and presupposes the reliability of the estimation of the asset value (if the asset is separable from the entity or arises from contractual or other legal rights).

Jennings and Thompson (1996) point out that the differentiation between the accounting treatment of acquired and internally produced intangible assets distorts the entities' *comparability* both at national (between companies basing their operation primarily on tangible vs. intangible assets) and international level (with reference to the comparability of the accounting systems). Also Schuetze [1993] underlines the issues related to comparability. He cites the example of the comparison between companies founding their growth on buyouts (capitalising their assets) and on internal development (which present their costs as expenses).

An argument in favour of the presentation of these assets as *expenditure* is that it is frequently impossible to reliably estimate the realisable value of internally developed

intangibles, for two reasons: they don't have an active market, and the generation of the information necessary for this purpose would be too costly and time-consuming based on the cost/benefit principle. On the other hand, *capitalisation* is supported by the argument that one should not exclude the possibility that an entity might be able to generate economic benefit by using an internally developed intangible asset, and that the exclusion of some substantial investments into intangibles from the balance sheet seriously distorts the true and fair view of the entity's financial standing. [Deák (2008)]

7.7. Types of capitalised intangible assets

Accounting regulations provide either a conceptual or an itemised definition of intangible assets. The two approaches do not exclude each other; a regulation may contain a conceptual recognition system and an illustrative list (lists are typically not exhaustive). The conceptual definition may be of an exclusive nature (i.e. intangibles are neither tangible nor monetary assets), tautological, descriptive (i.e. intangibles typically do not have a physical form), or effective (focusing on the actual content elements). In a research, Stolowy and Jeny-Cazava (2001) compared the treatment of intangible assets in the accounting regulations of 21 countries and 2 international organisations. Almost every examined regulation contained an enumeration, and half of them provided a conceptual definition. To make up for the deficiencies of conceptual definitions (i.e. that they are not sufficient to provide guidance concerning the accounting procedures), the regulations set out capitalisation criteria.

IFRS framework uses a conceptual approach in the first place, but IAS 38 does contain an illustrative list of intangible assets. In balance sheet structure followed by IFRS there are no predefined, fixed balance sheet lines; IAS 38 provides that the different types of intangible assets have to be grouped according to their common characteristics and purposes.

Hungarian regulation follows an itemised approach and only underlines the non-material character of intangible assets as a conceptual basis. As opposed to IFRS, Hungarian frameworks defines the categories to be used for intangibles (capitalised

value of formation/reorganization expenses; capitalised value of experimental development; concessions, licenses and similar rights; intellectual products; goodwill; advance payments on intangible assets; and value adjustments of intangible assets). With reference to the Hungarian regulations, the main group of capitalisable intangible assets is *identifiable intangible assets*. This category comprises intellectual products (i.e. "trademarks, patents and similar assets") as well as concessions, licenses and similar rights. Within the above category, further subgroups can be established based on primary content criteria. The subgroups may be assigned both to intellectual products and to concessions, licenses and similar rights. The close relationship and interoperability between intellectual products and concessions, licenses and similar rights is based on the fact that any license to use an intellectual product can be interpreted as belonging to the category of "concessions, licenses and similar rights". The subgroups of intellectual products and concessions, licenses and similar rights are assets of the technology, copyright, contract and marketing types.

In the Hungarian framework, it is expedient to delimit the capitalised value of formation/reorganization expenses and the capitalised value of experimental development recognised by the choice of the entity from traditional identifiable intangible assets. The former are investments which are expected to pay off in the future and the value of which can be measured in a reliable way, yet which typically cannot be taken into account as part of the value of other assets (because in that case the book value of the corresponding asset would be higher than its market value), and which are deeply rooted in the operation of the company (they cannot, or hardly could, be marketed). Their recognition as assets and the reporting of their costs is, however, justified by the matching principle. This group, therefore, is also called *'quasi intangible assets'*.

The third group consists of positive goodwill as non-identifiable intangible asset. Goodwill can only be capitalised as a result of an external transaction (acquisition of the company or its shares); in that case, if all other conditions are met, it appears in the balance sheet as a substantial extra payment additional to the market value, made in the expectation of future benefits. Although it may happen that other assets are purchased at prices higher than their market value because the entity believes that

additional future benefits are expected, this specific transaction is the only one which is recognisable as an asset according to Hungarian law and in the case of which the expenditure may be aligned with the revenues. Goodwill generated during continuous operation cannot be capitalised (similarly to most other regulations), as the resulting extra value is hard to identify and even harder to measure reliably. In fact, this surplus value may be identified as the intellectual capital partly explaining the positive deviation between the entity's book value and market value.

Pursuant to the Hungarian framework, advance payments on intangible assets should be presented in the section of intangible assets. This classification is conceptually unjustified, as the advances represent receivables, and as such qualify as monetary assets, and should therefore be presented in the claims section. The value adjustments of intangible assets constitutes a category falling within the scope of accounting valuation, and may be connected to intellectual products and to concessions, licenses and similar rights. Although adjusted value expresses the additional market value embodied in intellectual products, concessions, licenses and similar rights, this adjustment does not directly modify either the book value of the assets or the magnitude of the ordinary depreciation to be recognised later. Therefore, the advance payments presented within the category of intangible assets and the value adjustments of intangible assets are considered as *methodological intangible assets*.

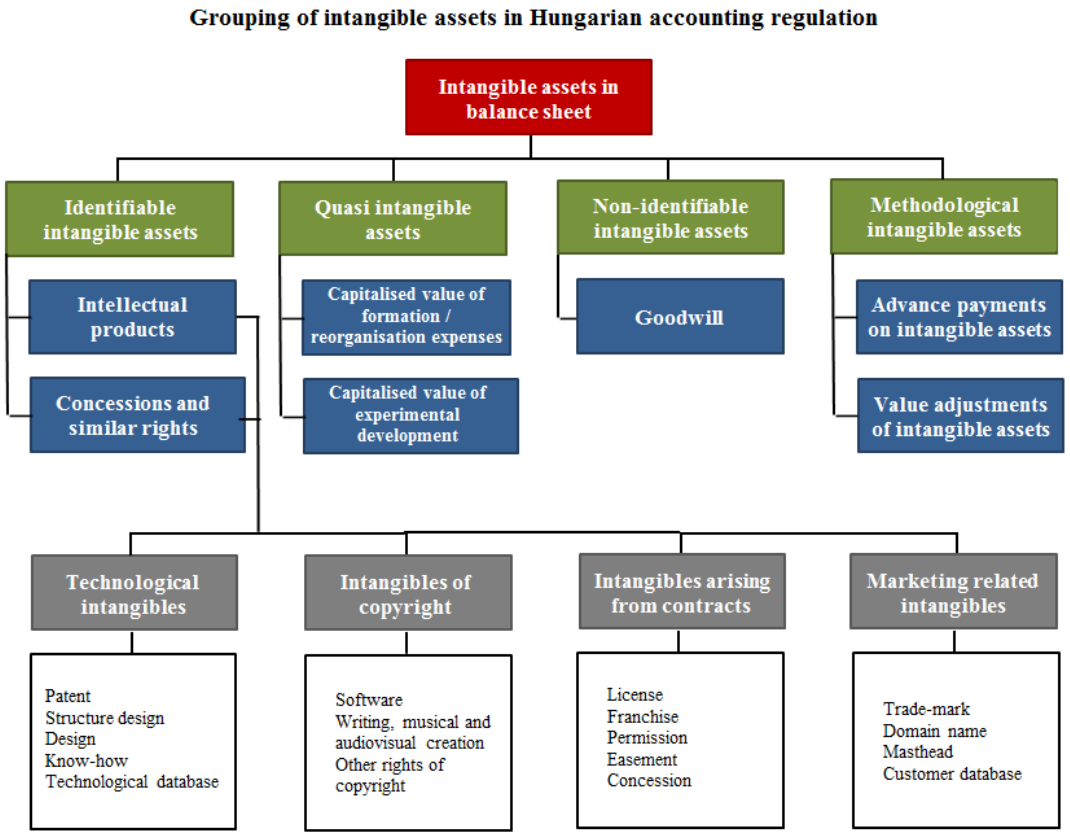


Figure 14. Source: Author's own version

7.8. Willingness to capitalise

Several empirical studies have examined the willingness of entities to capitalise intangible assets, as well as their corresponding practices. [see for example: Skryme (1999), Wyatt (2001), Sutton (2004), Wyatt (2005)] Sutton finds that companies frequently fail to capitalise intangible assets, even where the otherwise conservative accounting rules would allow them to do so. Sutton believes that the reason behind this is that the *investors tend to be prudent* with firms that capitalise their intangibles, as this may represent a way to influence the income. A 2001 empirical research by Wyatt found that companies capitalise a higher rate of *identifiable* intangibles (such as patents or trademarks) than of R&D or goodwill. Wyatt thinks this is partly due to the fact that these assets give a more reliable forecast of future prospects and are closer to the phase of commercial realisation. In a later empirical study conducted in 2005, Wyatt examined what factors influence the entities' choice (in case they are in

a position to decide) concerning the capitalisation of intangible assets. The findings show that the decision is positively affected by the company using technologies with a *high profit potential*. High profit potential incites the company to invest, and the expectation of future economic benefit increases the probability of the fulfilment of the capitalisation criteria system. The presence of *ownership protection factors* (which make it possible for the company to seize the yields of its investments) also exerts a favourable impact on the willingness to capitalise. On the other hand, there is a negative correlation between the capitalisation of intangible assets and the length of the *technology cycle*. The shorter the cycle, the higher the intensity of investments into intangibles and the larger the intangibles stock. As the economic benefits flow in over a shorter period of time and there is a lower risk of the asset becoming obsolete, the management is more disposed to capitalise the intangible assets. The capitalisation rate is also influenced by the *company size* and the corresponding characteristic growth path. In a research performed in 2010, Ferrari and Montanari examined the impact of the introduction of the IFRS on the accounting recognition and reporting of intangible assets. The research concluded that whereas as a result of IAS 38, certain intangible assets were excluded from the balance sheet of SMEs, this decrease was far less significant in case of large companies. This difference may be due to the different growth paths. While SMEs typically grow from within and mainly build on internally developed intangibles (which IAS 38 only allows to be capitalised upon very strict conditions), large companies also rely on external sources for their growth, and intangible assets acquired from external sources are typically capitalisable. *Tax considerations* may also influence the willingness of entities to recognise intangibles. If the accounting framework leaves the decision whether or not to capitalise an asset to the discretion of the company, management may also take into consideration the possibly favourable taxation effects of the immediate and exhaustive recognition of those assets as expenses.

8. Valuation of intangible assets

8.1. Identification, presentation and valuation

It is expedient to set apart two interrelated sets of transactions within accounting processes. One of this transaction system comprises the accounting identification of intangible assets and their presentation in balance sheet, with the capitalisation criteria system at its core. If capitalisation criteria are fulfilled, entity is obliged to, or in some cases may choose to, recognise the given economic phenomenon as an asset. In case of capitalised assets, the phases of identification and presentation are followed by a set of valuation transactions. As a first step, cost value of the asset needs to be determined, which has to be managed differently for acquired and internally developed intangible assets. In the framework of year-end valuation procedure, the entity has to apply an ordinary depreciation (amortisation) in line with its accounting policy, and to take into account the consequences of the comparison with market value. Relationships between processes of accounting identification, presentation and valuation are illustrated in Figure 15.

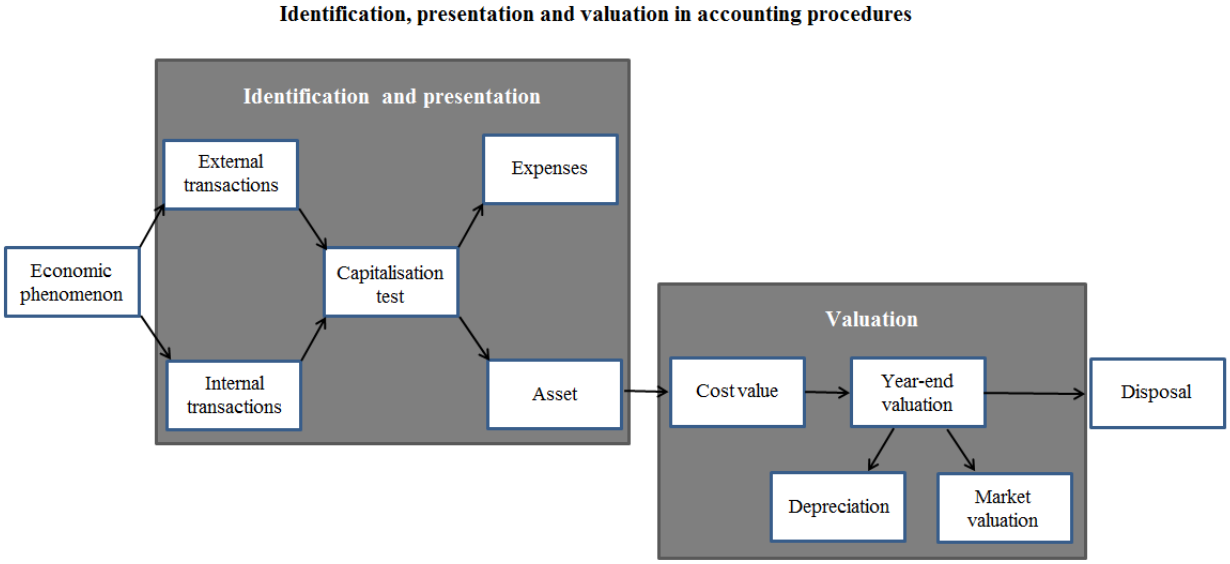


Figure 15. Source: Author's own version

8.2. Valuation principles and procedures

A fundamental issue in accounting valuation is to choose which price to use to determine the value. The self-evident theoretical possibilities would be valuation at the historical (past), current (present) or future price. These *valuation procedures* determine the actual form of the valuation activity. *Historical (acquisition) price* shows how much the given asset element cost upon acquisition, and how much it is worth at actualised historic cost on the balance sheet date. Therefore, if the entity chooses to use historical costs, this results in the determination of the nominal asset value. Valuation at *current (present) price* recognises the asset at its fair value, i.e. determines the amount of money for which the entity would be able to buy or sell the given asset. Based on this, we distinguish between replacement price (if the entity seeks to acquire the given asset) and sales price (if the entity is in the position to sell the asset). Valuation at *future prices* focuses on the future returns related to the given asset and their valuation. [Baricz (1990), Baricz–Róth (2002)] In case of valuation at future cost, price is determined based on the "intended role of the asset in the future operation of the company". [Baricz (1990) p. 49]

To these theoretical prices, entities may assign general *valuation principles*. Valuation principles "express the theoretical interrelations between the applied valuation procedures and the value of the assets, equity and profit, and points out to which of the above listed indicators the balance sheet grants priority". [Baricz (1990) p. 53] *Realisation principle* gives priority to the determination of income, and considers the calculation of the wealth of secondary importance. When realisation principle is used, asset elements are reported at their cost value, and income of the period reflects profit or loss effects effectively realised upon disposal. As opposed to realisation principle, *time value principle* focuses on recognition of assets' fair value, and attributes secondary importance to the determination of income. Accordingly, asset elements are reported on the balance sheet date at current, balance sheet date prices which approximate the real value of the wealth; at the same time, as a result of this procedure, income for the period reflects earnings of a mixed character, some of them realised and some of them not (i.e. fictive). *Principle of use value estimation* measures wealth and income from the aspect of the usability of the assets depending on future conditions. This means that asset valuation mainly builds on fictitious

pricing, and that income will comprise both realised and fictitious effects (the latter arising from revaluation). [Baricz (1990), Baricz–Róth (2002)] These valuation principles and procedures provide a kind of framework for the determination of asset values. Within this framework, however, the entity should decide which option of the available set of values it shall assign to the given asset element. Accounting principle of prudence justifies the use of the lowest possible value when assigning a value to assets. Baricz calls the principle of use of the lowest value 'the principle of reserve appropriation', the use of which should help to "prevent the decrease of the business capital and equity". [Baricz (1990) p. 55]

Balance sheet theories embrace activation/passivation criteria, valuation principles and procedures, and the preparation process of balance sheet. *Static balance sheet theories* give priority to the determination and presentation of the company wealth and, more specifically, the company equity, and treats the calculation of income as a secondary aim only. Main valuation principle observed by static balance sheet theories is the time value principle. As opposed to the above, *dynamic balance sheet theories* primarily focus on the determination of the income and, accordingly, on the realisation principle. *Organic balance sheet theories* break away from the priority-setting approach of the static and dynamic theories, and "give equal weight to the determination of both the real value of the wealth and the real income". [Baricz (1990) p. 79] In valuation theory of organic balance sheet theories, both realisation and time value principle apply on an equal footing. Figure 16 summarises the relationships between the different valuation principles and procedures and balance sheet theories.

Valuation principles, procedures and balance sheet theories

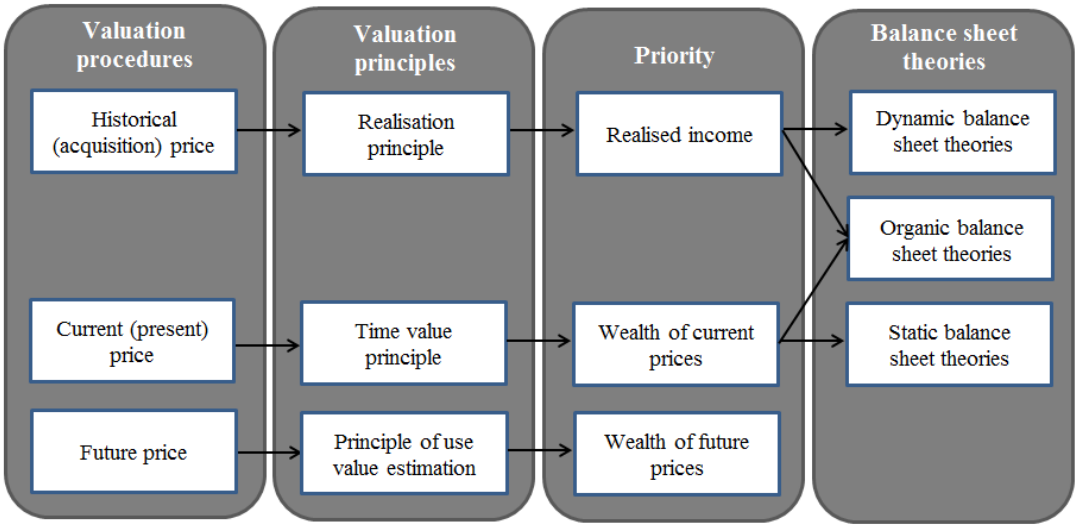


Figure 16. Source: Author's own version based on Baricz (1990)

Examining the basic principles and the individual provisions of the Hungarian Accounting Act, Bosnyák points out: "our current accounting system is built on the further development of the classic dynamic balance sheet theory", building on the fundamental concept of realised value. The dominating aspect in this accounting system is "the determination of the correct amount of income". [Bosnyák (2003) pp. 20-22] Róth et al. (2006) also considers that the realisation principle acts (in a non-explicit way) as a 'latent basic principle' in the Hungarian accounting framework. Without attempting to refute the correctness of the upgraded dynamic balance sheet theory, from another aspect, also the prevalence of the organic balance sheet theories can be demonstrated in the Hungarian accounting regulation. This framework fundamentally grants priority to the presentation of the realised income, but also the time value principle, operating with current prices, is asserted: at the year-end valuation, book (original) cost normally has to be compared with market (current) value. Time value principle is applied in a very specific manner: based on the principle of prudence, any 'bad news' should be recognised against the income, if it reaches a significant threshold, as defined in accounting policy. Any 'good news' arising from a possible appreciation, however, may only be recognised exceptionally (in case of invested assets), and this is only performed for the amount exceeding any earlier impairments and, instead of an income efficient way, by transferring the surplus into the valuation reserve, without affecting the periodical income. It follows

that periodical income comprises both realised and (due to the revaluation) unrealised (fictitious) elements, and part of the spread will be moved under the equity capital. Therefore, we may conclude that in Hungarian accounting regulations, the dominating aspect is that of the *organic balance sheet theories building on the priority of the realisation principle*.

8.3. Valuation of intangible assets upon acquisition

Hereinafter, I will examine the tasks related to valuation primarily in the light of the Hungarian accounting framework, with occasional references to the differences compared to the international frameworks (particularly the IFRS).

8.3.1. Recognition through internal development

If the process of the development of identifiable intangibles (intellectual products) can be inserted within the conceptual framework of 'research and development', then any costs incurred in relation to the production may be collected on balance sheet line of "capitalised value of experimental development". (This recognition is not mandatory, only an option: the company may decide about it in its accounting policy.) At the time of intellectual product capitalisation, the capitalised value of experimental development shall be decreased with the direct prime cost of the intellectual product, which cannot be higher than the market value of the given asset. It follows that if the market value of the intellectual product is lower than its production cost, than the asset may be capitalised at the (estimated) market value. If the creation of intellectual product does not fit into the conceptual framework of research and development, or if the entity does not wish to capitalise research and development costs, the unfinished asset also has to be reported as an intellectual product. Article 25 (7) of the Accounting Act stipulates that any asset element listed therein shall be shown under intellectual products, irrespective of whether they have been used or not. If the asset is internally developed, the value to be used shall be primarily the historical cost value, and exceptionally the market price (cf: intellectual product capitalised as a result of research and development activity). Only directly

incurred costs of which the relationship with the production can be demonstrated may be shown as part of direct prime cost (cost value). International frameworks build on a similar logic with the exception that they set out additional capitalisation criteria concerning internally developed intangible assets. Consequently, cost value may only comprise direct costs which have been incurred after the fulfilment of the recognition criteria; costs shown earlier as expenses may not be capitalised.

8.3.2. Recognition from external sources

Identifiable intangible assets (intellectual products and concessions, licenses and similar rights) usually get into the entity's possession *through a sales transaction*. In this case, cost value of the intangible asset is the purchase price, meaning the aggregate amount of all items individually connected with the asset before the date of first usage. In case of a sales transaction, cost value shall be a historical cost which, essentially, is equal to the current, present price. International frameworks provide for similar principles concerning the valuation procedure applicable in case of individual acquisition. The only difference is that where Hungarian regulation provides that assets should be activated upon their placing into service and first operational use, and costs up to this point in time can be activated, IFRS considers as date of capitalisation the date when the asset is ready for its intended use as expected by the management. It follows, therefore, that according to IFRS, cost value shall not include costs incurred after the asset is ready to use but before it is actually placed into service.

A specific case of external acquisition is the acquisition of intangible assets in the framework of a *business combination*. The concept of business combination was introduced by the IFRS framework to denote combinations of entities or business activities, and is also interpretable in the context of Hungarian regulation. Pursuant to the Accounting Act, when the buyer takes over the assets and liabilities of the acquired company, its business locations and store chain, assets shall be shown at market value, and the assumed liabilities at a value determined by the valuation method set out in the Accounting Act. Difference between the consideration paid and the market value of assets and liabilities established in accordance with the

Accounting Act should be shown as 'goodwill' or 'negative goodwill'. Powell (2003) differentiates between two methods for the accounting treatment of business combinations. *'Acquisition method'* means that identifiable assets should be taken into consideration during the transaction, and the difference between the price paid and the fair value of the identifiable assets shall be the goodwill. (This rationale is followed by the frameworks of Australia, Canada, New Zealand and the USA.) According to the *'uniting of interest method'*, assets that have already been capitalised will remain in the books at their book value, no new assets are identified, and no goodwill is recognised. (This option is offered in France, Germany and Japan.) IAS 38 [paragraph (33)] provides that the cost value of intangible assets is the fair value applicable at the time of acquisition. If fair value cannot be determined reliably, then the intangible asset – as an unidentifiable intellectual capital element – shall be included in goodwill. As opposed to the concept of fair value to be applied for the purpose of general valuation after acquisition, paragraphs (39) to (41) of IAS 38 do not require the existence of an active market in case of a business combination, but make it possible to determine fair value upon acquisition according to certain other methods (e.g. comparable transactions, future net cash flow). IAS 38 claims that asset can be presented regardless of the fact whether that asset had been shown in the books of the acquired company. This makes it possible, among other things, to include ongoing development activities which fulfil general asset criteria and the condition of identifiability. On the other hand, Hungarian Accounting Act does not make provisions for the assets not being assigned a value in the balance sheet of the acquired company. [Bíróné et al. (2008)]

In certain *other, specific cases* of external acquisition, the calculation of the cost value should be aligned with the market content of the economic event. For instance, cost value of assets received to offset outstanding claims shall be the value specified in the relevant agreement, exchange contract or in the proposal on the appropriation of assets. Cost value of assets obtained through exchange is the value stipulated in the exchange contract, or the sales price of the asset provided in exchange. Cost value (purchase value) of intangible assets received without consideration (e.g. from government) shall be the market value as of the time of their entry. [Article 50 (1)-(4)] The Accounting Act makes it possible to use market value also in case of business transformation, except for some specific cases (in respect of acquisitions

and demergers, the acquiring business association and the business association continuing operation in the same company form, respectively, may not revaluate assets). Business association undergoing transformation may show at market value its assets recorded by value in its balance sheet, while those not recorded in the books by value, which conform to the general asset definition, may be entered in balance sheet at market value. [Article 137]

Overall, cost value is primarily determined by the direct costs actually incurred and the purchase price actually paid, which points to the domination of historical price. However, in many cases, determination of market price is performed upon acquisition, which breaks away from the historical cost value and actuates a shift towards the dominance of current market prices. Market price should be taken into account in case of intellectual products capitalised as a result of research and development, assets shown in the books following company buyouts, assets entered without payment of a consideration, and in case the wealth is revaluated upon business transformation.

8.4. Valuation of intangible assets at the end of the year

8.4.1. Treatment of ordinary depreciation

One of the most important consequences of capitalisation is that costs of intangible investments are not charged on one business year only, but – following the matching principle – they are divided, in terms of ordinary depreciation, in years where the inflow of some economic benefits related to the asset is to be expected. Presentability as expenditure is affected by the expected time of use, the determined residual value, and the applied amortisation method. Varsányi (1995) points out that the life span of intangible assets is difficult to estimate, their obsolescence happens rather fast compared to physical assets, and is not steady in its rhythm. These circumstances also affect the planning and treatment of ordinary depreciation.

Both IFRS and US GAAP framework differentiate between intangible assets of a finite and indefinite useful life. IAS 38 provides that an intangible asset shall be

regarded as having an indefinite useful life when, based on an analysis of all of the relevant factors, there is no foreseeable limit to the period over which the asset is expected to generate net cash inflows for the entity. At the same time, indefinite useful life does not mean an infinite period of time. [paragraph (88) and (91)] This rationale is in line with the valuation requirements set out in the Hungarian regulations. The bottomline rule is that the amortisable value of the asset with a finite useful life should be allocated throughout its useful life. The Accounting Act also makes reference to assets with indefinite useful lives when it stipulates that no depreciation shall apply to assets that do not depreciate when used, or due to their unique characteristics and properties, appreciate over the years. [Article 52 (6)] It might be useful to take into consideration the limit set out in IFRS and US GAAP frameworks (useful life of an intangible asset that arises from contractual or other legal rights shall not exceed the period of the contractual or other legal rights) also in the context of Hungarian accounting system. The limit provided by Hungarian law is the length of the protection period of each intangible asset. The reason for this is that after the protection period, intellectual product will be free to use by anybody, which makes economic profitability of the intangible asset rather doubtful. The law usually provides for limited protection periods, and the entity is free to decide within those limits for what period it wishes to grant protection to its creation. Also licence agreements concerning the use of intellectual products may set out time limits. International frameworks stipulate that if the contractual or other legal rights can be renewed, the useful life of the intangible asset shall include the entire renewal period, provided that the renewal can be performed without significant cost to the entity. (In the opposite case, the costs of renewal would represent the cost of the acquisition of a new intangible asset.) This approach is also acceptable according to the Hungarian accounting system. The length of the finite and indefinite protection periods according to Hungarian law are presented in Figure 17.

Limited and unlimited protection periods in Hungarian industrial and copyright law

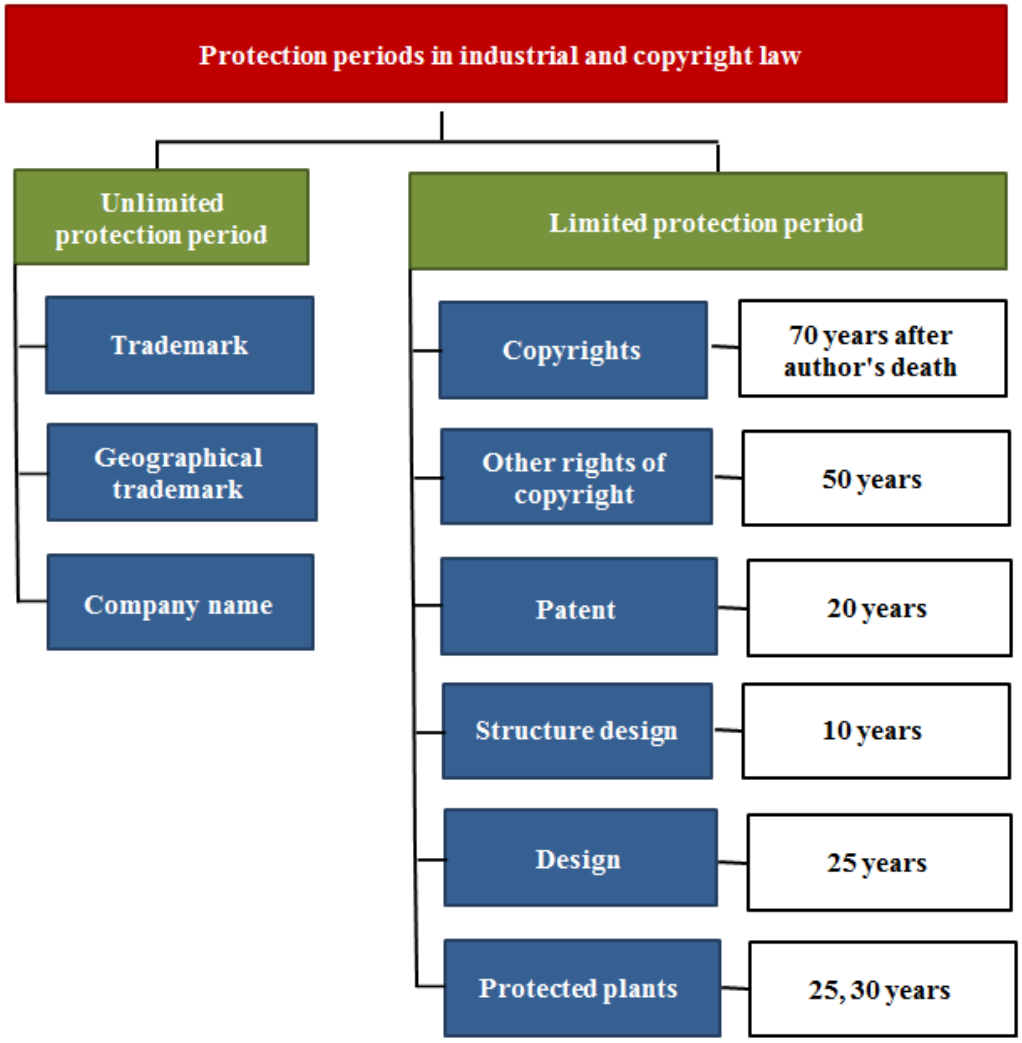


Figure 17. Source: Author's own version

The above-mentioned research conducted in 2007 by Ernst & Young, examining 709 acquisitions all over the world, also covered the useful lives as determined by the companies. The study found that companies disclose very little information concerning the useful life of intangible assets. The disclosures showed that intangible assets connected with the customer base (such as customer databases, customer contracts) were typically assigned a finite useful life (up to 30 years, 10 years on average); the useful life of brand names and trademarks ranged from minimal lengths to indefinite; and other intangible assets of a technological or contractual character had finite useful lives (up to 51 years). [for details, see: Ernst & Young (2009)]

8.4.2. Treatment of impairment losses

In addition to the presentation of ordinary depreciation, accounting should also ensure the follow-up of the usability and the market value of intangible assets. Following the continental tradition described in the chapter on capitalisation, the Accounting Act gives an itemised list of the cases where impairment is practicable, i.e. those circumstances which make it necessary to correct the book value in a negative direction. There are three categories of treatment of impairment losses. In terms of valuation, the determination of market value has priority in cases where book value has to be compared with market value known at the balance sheet preparation date. If the difference is deemed substantial according to the accounting policy, an impairment loss should be applied. The new version of the Accounting Act in force since 2013 provides guidance to the interpretation of the permanence of the difference between book value and market value. It stipulates that the difference between book value and market value is permanent if based on past facts or future expectations, it has existed or is expected to exist for at least a year. The difference shall also be deemed to be permanent, regardless of the period of its existence, if it can be considered as final based on information available as of the valuation date. [Article 243] Another typical case of application of impairment loss is when market circumstances (research and development activity), contractual conditions (licence agreements) or the entity's expectations (capitalised value of formation/reorganization expenses, goodwill) are affected by a substantial change that does not justify the book value. By the very nature of intangible assets, some other cases indicated in the Accounting Act such as deterioration, destruction or defect, typically do not apply. Regardless of the causes, impairment shall be applied to the debit of the income to an extent that the intangible asset should be shown in the balance sheet at the known market value prevailing at the balance sheet preparation date.

In accordance with their regulatory rationale, international frameworks (IAS 36, SFAS 144) do not provide a list of possible cases of impairment, but build their conception on the *recoverable amount*. IAS 36 considers the *'value in use'* and the *'fair value less costs to sell'* for the calculation of the recoverable amount, and uses the higher of these two to compare with the book value. The value in use is the

discounted value of the estimated future cash flows the entity expects to derive from the asset during its useful life. [IAS 36 (30)] The fair value less costs to sell is usually difficult to determine in the lack of an active market; the entity should use a best estimate based on the best information available.[16] [IAS 36 (25)-(27)] Whereas the Accounting Act provides that year-end valuation shall be performed on every balance sheet date, IAS 36 stipulates that this is only necessary if there are signs of impairment[17]. Another difference is that the Accounting Act bases its valuation on the market value known at the date of the preparation of the balance sheet, while IAS 36 calculates the recoverable amount as of the balance sheet date. Furthermore, as opposed to the Accounting Act, IAS 36 does not impose a criterion of permanence. [Balázs et al. (2006)]

8.4.3. Treatment of value adjustment

In year-end valuation, a relationship of an opposite direction may also appear in the correlation between book value and market value, i.e. market value may exceed the book value. The Accounting Act stipulates that where the reasons for the impairment of intangible assets on the basis of market value no longer exist or have been changed, the recognized impairment loss shall be eliminated and the intangible assets in question shall be adjusted back to their market value (not to exceed their net value determined in consideration of the ordinary depreciation). [Article 53 (3)] Appreciation exceeding the above is allowed by the Accounting Act for a restricted scope of factors (intellectual products and concessions, licenses and similar rights) in a discretionary manner. In this case the difference between the net value and the market value may be shown as value adjustments for assets and as valuation reserve in the same amount. [Article 57 (3)] In the Hungarian framework, therefore, value

[16]SFAS 144 follows a logic similar to IAS 36. Impairment write-down should be applied if the book value is higher than the recoverable amount (the amount of the non discounted cash flow deriving from the use of the asset) and the fair value. The book value should be discounted to the level of the fair value which, in absence of market prices, can sometimes only be determined using an estimate (e.g. by the calculation of the net present value). [SFAS 144 (7), (22)-(23)]

[17]Exception: the impairment test should be performed every year for intangible assets with an indefinite useful life and for intangibles not yet available for use [IAS 36 (10)]

adjustment is applied in an income neutral way, and does not change the book value of the asset[18].

In the IFRS framework, the treatment of the increasing market value depends on the chosen valuation model. If a cost value model is applied, both impairment loss and its reversal are substantiated in the profit and loss account. An appreciation exceeding the net amount is possible if the revaluation model is applied (where the difference will be shown under the revaluation reserve within the equity). The use of the revaluation model for intangible assets is restricted because IAS 38 requires an active market for the application of this model which, as also IAS 38 acknowledges, rarely exists for intangible assets. If this condition is met, the basis for the depreciation of the revaluated asset shall subsequently be the revaluated value, which directly affects the income. In addition to IFRS, also Australia and the UK allow for the appreciation of assets. Whereas IFRS requires the existence of an active market, the UK GAAP refers to an easily determinable market price, and Australia does not apply any restrictions. [Powell (2003)]

Current (daily) price valuation acquires a particular importance in the context of the year-end valuation both in the Hungarian and international frameworks. Hungarian accounting valuation requirements provide for an annual comparison of book value and market value, and require a mandatory impairment in case of a negative relationship, and a partly mandatory (for the amount of any impairment loss applied earlier) and partly discretionary (for the amount of the value adjustment) appreciation in case of a positive correlation. Figure 18 gives an overview of the accounting procedures related to the changes in the value of intangible assets.

[18]This only concerns the valuation of intangible assets, excluding any issues related to fair valuation.

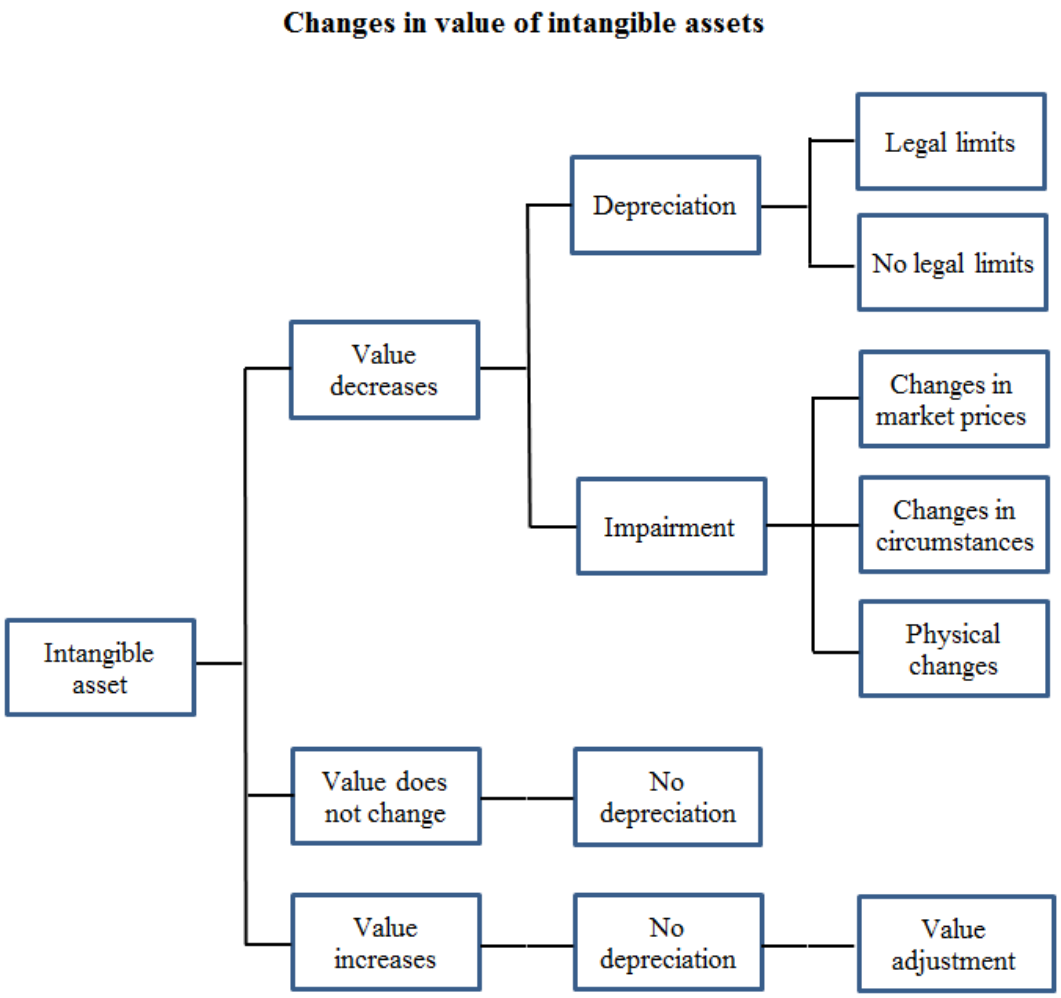


Figure 18. Source: Author's own version

An important conclusion concerning valuation is that although Hungarian regulations provide that market value shall be subject to valuation processes (either specifically, upon entry, or generally, with reference to the year-end valuation), the Accounting Act fails to provide guidance concerning both the concept of market value and the possible methods to determine the market value, but refers these issues to the scope of the accounting policy developed by the entity. The rationale behind this is quite the opposite of the one usually followed by continental law, typically laying down detailed rules; here, there is no explicit indication concerning the determination of the market value, which is entirely left to the entity's discretion. On the other hand, international standards built on the frameworks provide much more detailed guidance for the calculation of the market (fair) value.

9. Quantification of the value of intangible assets

9.1. Necessity of the valuation of intangible assets

Several academic overviews and empirical studies have explored the reasons why it is indeed necessary to measure intellectual capital. [see e.g.: Edvinsson–Malone (1997), Roos et al. (1997), Sveiby (1997), Marr–Gray–Neely (2003), Andriessen, (2004), Mádi (2004) Káldos (2006a)] Various circumstances may make it necessary to measure the value of the individual intellectual capital elements.

1. Identification, measurement and development of intellectual capital contributes to the *formulation of a business strategy*.

2. Measurement of intellectual capital supports the *assessment of strategy implementation*.

3. Estimation of the companies' intellectual capital value is helpful in the *decision-making concerning buyouts and transformations*.

4. Measurement of intellectual capital contributes to the *development of internal management systems*. Several authors (e.g. Roos, Sveiby, Edvinsson) have pointed out that most companies do not manage intangible capital appropriately, or fail to consider that its management requires a different methodology from the one applied in the management of traditional assets. Roos et al. translate the relationship between the measurement and the management of intellectual capital by the formula "You can't manage what you can't measure." [Roos et al. (1997) p. 7]

5. Calculation and disclosure of the value of intellectual capital also supports communication with *external stakeholders,* by providing them with more accurate information concerning the fair value and future performance of the company. [Roos et al. (1997), Sveiby (1997), Edvinsson–Malone (1997)] According to Edvinsson and Malone (1997), further advantages would be the

decrease of the information asymmetry, the improvement of the company's goodwill, and the positive effect of these on the share prices. Academic publications are divided in respect of the effect of disclosure of market information concerning the value of intellectual capital on capital attraction. Brooking (1996) and Lev (2001) consider that the incorrect valuation of companies results in a higher risk profile, which ultimately increases capital costs. At the same time, Skinner (2008) doubts that this should play a role in the undervaluation of companies.

6. Measurement of the individual intellectual capital elements may also provide a basis for *compensation or remuneration*.

7. Measurement of intellectual capital plays a role in the *pricing of various transactions*. These may include the licensing or sales of intangible assets, financing[19], or the quantification of damages sustained through the infringement of property rights related to intangible assets.

8. Measurement of intellectual capital elements is also necessary for purposes of *regulatory compliance*. As regards taxation, this applies for the use of transfer prices, and in respect of accounting, for all the above mentioned cases where the Accounting Act provides for a comparison with or the calculation of the market value (in certain cases of acquisition, at the year-end valuation or at the revaluation performed upon transformation).

9.2. Measurement models

9.2.1. Classification of measurement models

Academic authors and practicians have developed numerous measurement models. Pike and Roos (2004) identify 12 methods, Andriessen (2004) proposes 30 models, and Sveiby (2001) draws up 42 methods. Based on the typology established by Luthy

[19] Káldos (2006a) highlights that with reference to the lack of suitable expertise and the high risk, financial institutions usually do not accept intangible assets as collateral.

and Williams [cited in: Pike–Roos (2004) p. 246], these measurement models may be classified into four groups:

1. *Market Capitalization Methods (MCM)*, which determine the value of intellectual capital as the difference between market value and book value;
2. *Return on Assets methods (ROA)*, which build on the industry ROA to calculate the return owed to intellectual capital in a given company, and use it to deduce the value of the intellectual capital;
3. *Scorecard Methods (SC)*, which determine the components of intellectual capital and assign quantifiable indicators to them. This approach is typically used in intellectual capital statements;
4. *Direct Intellectual Capital methods (DIC)*, which identify and valuate the intellectual capital elements directly.

9.2.2. Applied measurement models

From an accounting aspect, the most important procedures are the DIC (Direct Intellectual Capital) models, for as a result of the application of the principle of individual valuation, market price is determined based on the valuation of individually capitalised intangibles. Several academic authors have summarised the quantitative methods to be used for the valuation of intangible assets. [see e.g.: Mádi (2004), Káldos (2006a), Brand Finance (2009), Czoboly (2009)] The major quantitative measurement models are valuation models based on cost, market, income and option.

Cost based approaches determine asset value based on the capital used for its production or acquisition. Its two basic types, also frequently used in practice, are the historical cost method and the replacement cost method. The historical cost method builds on the accounting cost value, i.e. on the items directly connected with the production or acquisition. The replacement cost method determines the reproduction value in consideration of the current market conditions and prices.

Market based methods build on the assumption that the given asset does have a market, that is, assets with comparable features have been sold in the past, or licence agreements have been concluded for their use. It is also assumed that there is a sufficient number of market transactions to measure the price reliably, and this price would more or less accurately reflect the asset value.

It is a characteristic feature of intangible assets that the inflow of benefits due to their possession and use is substantially higher that the capital needed for the development or acquisition of the intangible asset. Based on this assumption, *earnings based* valuation methods calculate the value of the intellectual creation from the discounted value of the expected future benefits less expenses. Perhaps the most widely used procedure, also recommended by the international regulations, is the discounted cash flow (DCF) method, which calculates the net present value of the future cash flows resulting from the use of the asset, using an appropriate discount rate. The calculation of the present value should be aligned with the useful life and/or protection period of the asset. "The role of the discount rate is to reflect the uncertainty of the cash flow in the final value of the intellectual asset (risk correction), and to make it possible to calculate the currently applicable value, i.e. the present value of the expected future cash flow (time correction)." [Káldos (2006a) p. 12] Another frequently used procedure is the royalty rate method, determining the price of the asset based on the capitalised value of the licence fees to be received during its useful life or protection period.

Option based valuation methods build on the basic assumption that asset value may change over time, which depends on several circumstances difficult to predict or forecast. The sequence of future decisions, for instance, is like a multivariate equation which also affects the asset value. Option based models assess the future choices in the light of known probabilities.

9.3. Valuation of intangible assets in practice

Roos and Roos considers that it is increasingly important for all companies – irrespective of their industry, size, location or ownership structure – to take a systemic approach to the recognition and valuation of intellectual capital. [Roos–Roos (1997) p. 415] At the same time, the valuation of intangible assets is often a complex process full of uncertainty. Osman underlines that the real value and fair price of intangible assets cannot be approximated using the calculation methods applied (and actually well applicable) for the great majority of goods. [Osman (1991) p. 19] The reason for this lies in the very nature of intangible assets: their uniqueness necessarily entails the lack of an effective market and comparable market prices. For this reason, several valuation methods are partly subjective, and as such not always recognised by market players. [Foster et al. (2003), Basu–Waymire (2008)] Juhász considers that pecuniary measurement constitutes the main barrier to accounting valuation: "Although outside the company (economy), money is not the only (nor even the primary) means to measure value, accounting is only capable of recognising resources and benefits which can be measured in monetary terms." [Juhász (2004a) p. 71]

A research conducted by Howrey Simon Arnold & White among investors found that most investors consider intellectual capital as an important factor in the assessment of companies for investment purposes. Nevertheless, although the respondent investors stressed the prominent role of intellectual capital strategy, only a third of them claimed to always or usually assess the intellectual capital of the entity when making investment decisions. [for details, see: Howrey (2002)]

The above mentioned research conducted in 2007 by Ernst & Young (2009) confirmed that companies typically do not disclose information they deem to be sensitive, such as the methodology of asset valuation, which is therefore rarely made public. Where published, the methods used were quite similar in most cases:

- an earnings based method *(the relief from royalty method[20])* was used for brand names,
- similarly, an earnings based method *(the multi-period excess earnings method[21])* was usually used for customer-related intangibles,
- use of other methods (market based, DCF or cost based methods) was scarce.

9.4. Conclusions concerning the valuation of intangible assets

Academic publications warn that the choice of the appropriate valuation procedure should also depend on the maturity and life cycle of the technology, the intangible asset and the product using it. At the phase-in stage, in absence of a suitable business plan and precise market forecasts, cost based methods tend to prevail. In the initial growth phase, when there is a multitude of discretional bifurcations, option based methods are recommended. Earnings based methods are expedient at later stages of growth, when the possible uses of the intangible asset are more clearly delimited thanks to the fully developed business plan. In this phase of the life cycle, value of intangible asset tends to undergo a substantial increase. In the period of maturity, plenty of market information is available on the similar and comparable assets; value of intangible asset is relatively stable; therefore, the market based methods prevail. [Khoury et al. (2001), Mádi (2004)] Figure 19 presents the relationships between the asset life cycle and the applicable valuation procedures.

[20]This method determines the value of the intangible asset by calculating the present value of the royalty that should be paid if the use of the asset was subject to the payment of a royalty fee.

[21] The method calculates cash flows derived from the intangible asset and then deducts the 'fee of use' of the supporting assets that contributed to the generation of the cash flows.

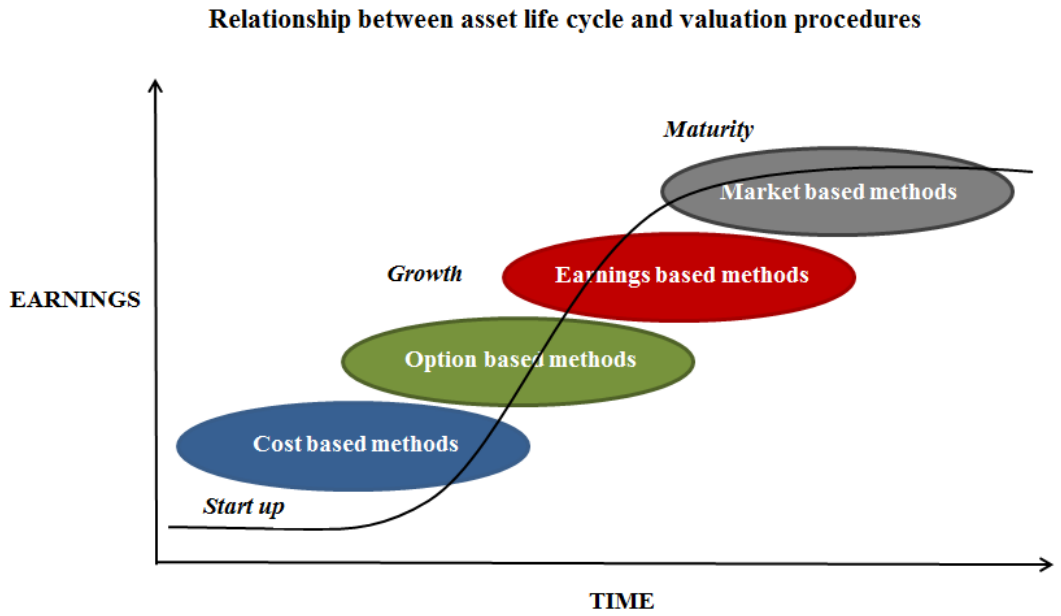


Figure 19. Source: Author's own version based on Khoury et al. (2001)

Academic literature is united on the point that it is expedient to use several different methods for the valuation of intangible assets to grasp every component that may affect monetary value. If several methods are used simultaneously, their joint result needs to be weighted. Calculation of the weights to be used should be based on the life cycle of the asset and should give priority to the value backed up by the most reliable and authentic information. [Khoury et al. (2001), Káldos (2006a), Olsen–Halliwell (2007)]

Sometimes valuated intangible asset has an identifiable and *operational market*; if this is the case, it is easy to procure information concerning the value of other similar assets. An example would be the market of accounting software. These types of software tend to have similar structures and respond to roughly the same requirements; therefore, their value depends on how fully they are able to satisfy those requirements. The modular prices of the software market are readily available, and so the market based methods can be used with a high degree of reliability. Mádi (2004), however, points out that market price based valuation is a multiphase process. *Earnings based calculations* can only be reasonably reliable if a number of conditions are met. These procedures should be handled with circumspection in the case of novel intangibles not yet tested in practice. The situation is somewhat similar with products with a new patent or trademark in the stage preceding market phase-in.

In absence of business and market experience, the valuator may only rely on the business plan and on optimistic forecasts founded on estimates and mathematic probabilities. However, as the economic significance of intangible assets consists for a large part in the fact that they generate an extra benefit which highly exceeds the resources dedicated to their production, this approach cannot be simply discarded in every case. In case of a proven intangible asset which has demonstrated its abilities in the economy for several years, earnings based methods can be used. Here, past experience needs to be corrected for future-related factors; this procedure has to be based on and draw its credibility from proven historical data. The DCF method might be a reliable choice; or the royalty rate method may also be used if the revenue is generated through the licensing of the given intangible asset. *Option based methods* and *qualitative valuation models* are less recommended for the valuation of intangible assets, or could play a supplementary role. In their cases, the reliability of the obtained value may be biased by the use of mathematic probabilities and subjective elements, respectively.

Káldos highlights with great insight that the valuation of intangible assets cannot be performed with a scientific exactitude: "the value of intellectual assets cannot be measured, just estimated with an approximative calculation". [Káldos (2006a) p. 7] Ample literature has been published on the valuation procedures applicable for intellectual capital in general and intangible assets in particular. To be able to use the various methods with assurance, it is not enough to know them, but sufficient practice is needed to produce a reliable value. Accounting professionals preparing financial statements, and even auditors cannot be expected to be able to reliably estimate the market value of intangibles, so hard to assess due to their uniqueness, at the year-end accounting valuation. As in case of real estate, an expert with special knowledge and experience may be used; but such expertise is quite rare, and consequently rather expensive. Certain hybrid procedures combine advantageous features of the above described quantitative and qualitative valuation methods, but they are hardly available for the average business entity or private individual. It follows that in line with the cost/benefit principle, market value of intangible assets recognised and capitalised in books usually fails to be determined.

10. Disclosure concerning intangible assets

10.1. General information about disclosure

As a result of the increasing rate of intangibles in relation to physical assets, there is an ever greater pressure on companies to show how their intangible assets contribute to the performance of their organisation. [Marr–Gray–Neely (2003)] As Boross and Gyökér put it: "the present-day form of accounting is a product of the industrial era". [Boross–Gyökér (1999) p. 15] The accounting system of the industrial age was suited to valuate the entity's assets and operation, as it was built on the assumption that business depends on financial capital, and the key to its success is monetary return. If, however, we accept that most of the assets are intangible, and as such, are absent from the balance sheet, it appears that financial statements do not provide a perfectly transparent and reliable view. Some authors are of the opinion that the only solution to this would be the generation of objective information concerning intangibles. They consider that where knowledge companies are concerned, financial indicators fail to reflect company's real value and performance, and urge the introduction of indicators which are able to fulfil this function. These indicators would be capable of signalling any changes in intangible assets before they become visible in financial figures. Investors probably appreciate the usefulness of such non-monetary indicators in case of companies building on intangible assets, of which traditional financial statements tend to undervalue the assets. [Sveiby (1989), Sutton (2004), Shepherd et al. (2010)] Eccles (1991) also considers that since the 1990s, financial indicators no longer play an exclusive role in the measurement of performance; on the other hand, qualitative indicators have been gaining in importance. Research by Lev (2004) found that entities should be more consistent in collecting information about their intangible assets and investments and the economic benefits arising from them, and should disclose part of this information to the market players.

Several authors worldwide [Lev (2001), Eccles et al. (2001), Beattie–Pratt (2002)] think that the elaboration of an intellectual capital statement might be a key pricing, reporting and management tool in the hands of the company management. The participants at a workshop organised by SEC (U.S. Securities and Exchange

Commission)[22] [cited in: Edvinsson (1997) p. 367] hope to find the solution in the compilation of an *intellectual capital statement*, a supplement of financial statements that provides information on future development and innovation activity of the firm. This information would not distort but support and complement financial figures. At the same time, other authors consider it improbable that all intellectual capital elements could be reported in financial statements in the near future, as accounting associations, financial analysts and researchers have not yet reached a consensus on the indicators of intellectual capital, and no general accounting principles have been adopted. [Marr–Gray–Neely (2003) p. 449]

With reference to the intellectual capital statement, it is expedient to differentiate between analyses prepared for internal usage and for external users. *Statements for internal purposes* aim to provide information for the management in such quality and quantity as to be able to effectively support operative decision-making, contribute to operability, and reconcile short-term results with long-term sustainability. *Statements for external purposes* may be mandatory, aimed at ensuring compliance with the regulations, or voluntary, aiming to provide additional information to stakeholders and to support well-founded decision-making. [Shepherd et al. (2010) p. 3]

Concerns regarding extended disclosure mainly relate to the fact that in a highly competitive environment, not only investors but also competitors would obtain additional information. On the other hand, the investors may be misled by the entity's estimates and speculations concerning the future. (That is why it is advisable to disclose facts and historical data only.) The question is how a balance could be stricken "between the investors' insatiable hunger for information and the risk of helping competitors". [Lev (2004) p. 46] A relevant research by Lev, Guo and Zhou (2004) examined the voluntary communication of 49 biotechnological firms before listing at the stock market concerning intangible assets and novel products. Most of the analysed companies published wide-ranging information about novel products, the results of clinical studies, and future development trends, despite the fact that the biotechnological market is subject to fierce competition. Research by Lev, Guo and Zhou suggests that the disclosure of quality information (particularly related to

[22]SEC workshop: The Reporting on Intangible Assets, Washington, 11-12 April 1996.

intangible assets) for market players ensures decreased share price volatility and a smaller difference between purchase offers. Andrikopoulos (2010) points out that extensive disclosure may be hampered by the fact that based on cost/benefit principle, it is rarely in the interest of the entities to invest in a complex reporting system, as it provides no direct financial benefit to them, and as several intellectual capital elements (such as human capital) are not negotiable and consequently have no liquidation value.

10.2. Statutory disclosure

Any supplementary information related to intangible assets in the balance sheet and the presentation of the major intangible investments not capitalised, is typically placed in the *notes* attached to the companies' financial statements. The notes not only complement the figures included in the balance sheet and the income statement but also provide additional information concerning the entity's operation. [Tóthné (2010)] Regulations usually set out certain disclosure obligations concerning intangible assets, but they only indicate *minimum* requirements: companies need to share more than the statutorily required minimum amount of information with market players, if this is required to present a true and fair view. Regulations set out the greatest number of disclosure requirements concerning the changes in the value of intangible assets: they generally require the detailed description of any increase or decrease in gross value, as well as of the annual and accumulated depreciation, impairment and value adjustment. Applied amortisation methods and (in case of a market valuation) valuation procedures used are usually also to be indicated. In the notes, information should be disclosed concerning the R&D costs incurred and reported as expenses in the given year. Furthermore, IFRS recommends that the entity may want to enumerate any significant intangible assets in its possession which have not been recognised as assets. According to the Accounting Act, the business report to be mandatorily prepared by entities submitting financial statements should include the presentation of R&D activity, as far as necessary to allow a fair

insight into the company's position. Table 1 summarises the key disclosure requirements regarding intangible assets[23].

[23]In line with the Hungarian regulations, certain information may be omitted from the simplified financial statements.

Statutory disclosures in regulations

	Hungarian Accounting Act	IFRS	US GAAP
Valuation	*for each balance sheet line:*	*for each class of intangible assets, distinguishing between internally generated intangible assets and other intangible assets*	*for groups:*
	opening balance, increase, decrease, closing balance of gross value	intangibles of finite and infinite useful life, determination of infinite useful life	book value, gross value, accumulated depreciation, significant residual value
	opening balance, increase, decrease, closing balance of accumulated depreciation	useful life or amortisation rate	average amortisation period
	amount of annual depreciation	applied amortisation methods	estimated amortisation cost for the next 5 years
	applied amortisation methods	gross value and accumulated amortisation (aggregated with accumulated impairment losses) at the beginning and end of the period	description of impairment, supporting documentation, method of fair value procedure, amount of impairment loss
	amount of impairment losses and reversal of impairment losses	line item(s) of income statement in which any amortisation is included	line item(s) of income statement in which any amortisation is included
	reasons for significant impairment and reversal of impairment	changes in book value (increases, decreases)	book value, amortisation and impairment losses of capitalised softwares
	opening balance, increase, decrease, closing balance of value adjustment	depreciation, book value and remaining amortisation period of significant intangible assets	
	valuation procedures based on market prices	description of any fully amortised intangible asset that is still in use (not mandatory)	
		special disclosure for revalued intangible assets (date of revaluation, book value, book value based on cost model, change in revaluation reserve, methods)	
R&D	R&D costs incurred in financial year	aggregate amount of research and development expenditure recognised as an expense	aggregate amount of research and development expenditure recognised as an expense
			purchased R&D and its amortisation
Assets not capitalised		brief description of significant intangible assets controlled by the entity but not recognised as assets (not mandatory)	
Other		intangible assets acquired by way of a government grant	
		existence and book value of intangible assets whose title is restricted and book value of intangible assets pledged as security for liabilities	
		amount of contractual commitments for the acquisition of intangible assets	

Table 1. Source: Author's own version

Several empirical researches have been conducted regarding the disclosure of intangible assets. Arthur Andersen performed an international research in 1998 on the disclosure of information related to intellectual capital. In 1998, most respondents agreed that the measurement of intellectual capital contributes to the increase of the company's efficiency, and thought that the importance of the intellectual capital statement is liable to increase in the future. Many respondents, however, expected that the intellectual capital statement will not be part of the financial statements in the near future; they considered that such disclosure is only conceivable on a voluntary basis. [Bontis (2001)]

KPMG Hungary analysed the IFRS-based annual reports of 19 entities with shares listed on the Budapest Stock Exchange. The study aimed at an overall assessment of the quality of IFRS-based financial statements. The study concluded that the quality and exhaustiveness of disclosures on intangible assets were adequate, although some entities failed to delimit internally developed and other intangible assets, and intangibles with finite or indefinite useful lives. [Boros–Rakó (2010)]

In another research, Kang and Gray (2011) analysed the intangibles-related disclosures of the financial statements of the 200 largest companies of the developing markets. The principal research methodology applied was content analysis, i.e. the analysis of the narrative sections of the financial statements. The research found that many companies included information concerning intangible assets in the narrative sections of their annual reports, which enhanced effective communication with the market. These large companies operating on the developing markets were committed to the disclosure of information concerning their intangible assets. Most companies typically included more quantitative than qualitative information in the narrative analysis. The authors concluded that the number, nature and extent of the disclosures concerning intangible assets depends on the accounting regulations applied[24] and on the industry, but is independent of the company size and of the company being listed on the stock exchange. This latter finding seems to contradict certain earlier studies which showed that the level of disclosure is in positive correlation with the company size, i.e. due to the superiority of their resources, larger companies tend to disclose

[24]The research found that companies using the IFRS and US GAAP disclosed substantially less information than companies using national frameworks.

more information. [see for instance a research by Holland–Foo (2003), cited in: Kang–Gray (2011)] Actually, no real contradiction exists between the two researches. Kang and Gray focused their research on the 200 largest companies on the developing markets, therefore no significant variations in size could be possible.

10.3. Voluntary disclosure

10.3.1. Intellectual capital statement for internal stakeholders

Karl-Erik Sveiby, prominent figure of the Swedish intellectual capital movement, developed a model called *Intangible Asset Monitor* for the measurement of intellectual capital. He analysed the issue of intangibles in three dimensions: external structure, internal structure and competence. Within each of these three dimensions, indicators relating to four focuses (growth, innovation, efficiency, stability) may be determined, which allow to follow up and analyse the change and evolution of intangible assets.

Model of Intangible Assets Monitor

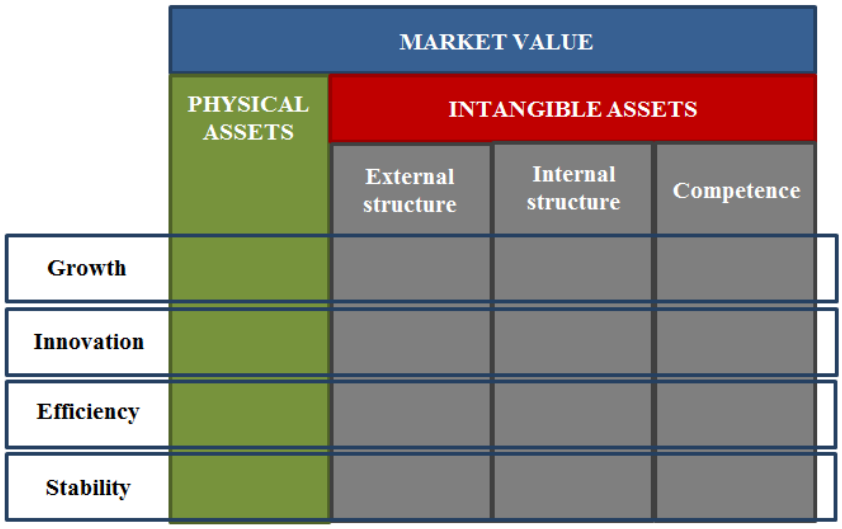


Figure 20. Source: [Sveiby (1996)]

Skandia Navigator is a management tool to valuate intellectual capital. The strategic objectives of each field (renewal and development focus, customer focus, process focus, financial focus) should be broken down to a level where numeric indicators functioning as critical factors of strategy implementation are obtained. It is recommended to indicate 3 or 4 indicators for each focus, which will then serve as planning and benchmark points. [Edvinsson (1997)]

Model of Skandia Navigator

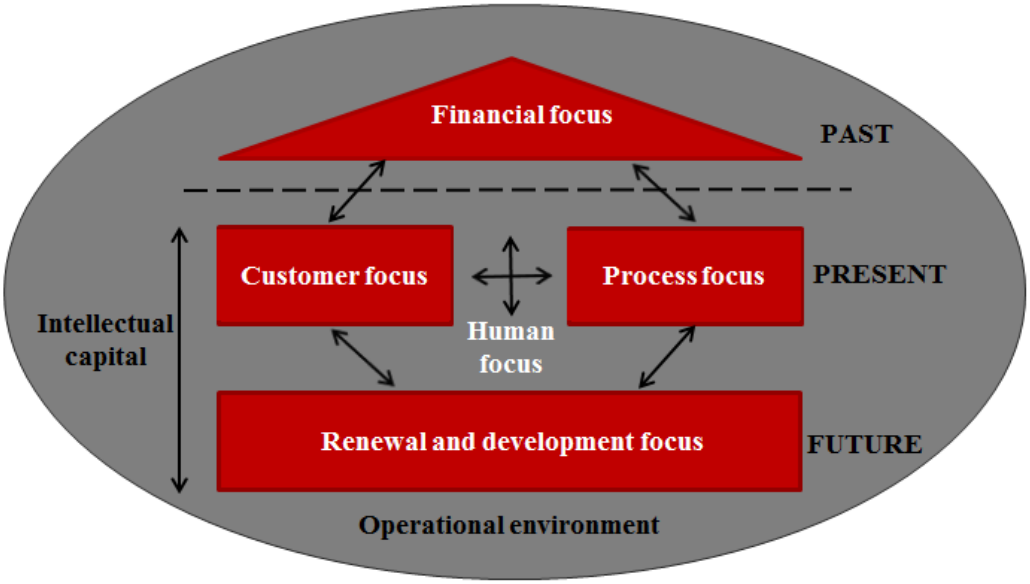


Figure 21. Source: Edvinsson (1997) p. 371

In its concept, Skandia Navigator is not unlike Kaplan-Norton's *Balanced Scorecard* model [Kaplan-Norton (1992)]. Balanced Scorecard is a management tool primarily serving internal purposes, although Norton lately proposed to also use the model as an external communication tool. The model examining business operation in four dimensions (financial, customer, internal business processes, learning and growth) is mainly used for strategy development and performance measurement. Indicators characteristic of the company's operation make it possible to measure business operation and performance.

Roos et al. (1997) criticise several models (e.g. Skandia Navigator) on the grounds that no priorities are set among the indicators relating to intellectual capital, which prevents the management from optimising their decisions. Furthermore, these models

fail to explore the relationship between intangibles and other physical and financial assets of the company, and are fundamentally stock-oriented instead of flow-oriented. The *Intellectual Capital index (IC Index)* developed by these authors aims to disclose companies' hidden values to the market to enable it to prepare a more reliable valuation of the company's fair value. IC Index congregates all indicators characterising intellectual capital, weighted according to their hierarchy, into a single index. The authors also suggest that variations in this index also reflect changes in the company's market value.

10.3.2. Intellectual capital statement for external stakeholders

Baruch Lev developed a scorecard type model *(Value Chain Scoreboard)* – analysing the use of the company's intellectual capital – for the information of investors and external decision makers. The value chain model consists of three phases: *discovery and learning*, *implementation* and *commercialisation*, which may be further broken down to additional subcategories. There is a total of 9 subcategories, to which various indicators may be assigned. These indicators must meet certain quality criteria: they have to be quantifiable, standardisable and their contribution to the company value should be empirically demonstrable [Lev (2001), Holmen (2005)] Kang and Gray (2011) tested the implementation of Lev's value chain model in published annual reports. The research found that the greatest amount of information is disclosed in relation to the discovery and learning phase, followed by the commercialisation phase; financial statements contain the least information about the implementation phase.

Scandinavian countries have a long-standing tradition of research into and disclosure of information concerning intellectual capital. In Denmark, many companies prepare intellectual capital statements both for internal purposes and for external users. In Denmark, the *intellectual capital statement* is an organic part of business knowledge management, supporting strategy development and breakdown into objectives, actions and indicators. The Danish intellectual capital statement serves as a management tool and as a communication tool towards external stakeholders. The Danish accounting act provides for the disclosure of additional information

concerning intellectual creations where they exert a significant effect on the income. One way to present this information is the intellectual capital statement, which may take the form of a document complementing financial statements. The main requirement concerning this statement is that it should contain relevant and reliable information reported in accordance with the fundamental accounting principles. The intellectual capital statement summarises how the products and services produced or provided by the company create value for customers, and the types of knowledge resources they necessitate. The statement shows what kinds of new knowledge resources need to be created for successful operation, as well as the translation of this information into specific action plans and indicators allowing to measure and follow up their implementation. [for details, see: Danish Ministry of Science (2003)]

An intellectual capital statement model comparable to the Danish one is the European model created in the framework of the *MERITUM project*. The logic and structure of the MERITUM model are very similar to those of the Danish intellectual capital statement: in a first step, the strategic objectives of the company need to be defined, then the intangible asset elements of the organisation should be identified in this context, together with the action plan aimed at their development. Again, the system is based on the use of reliable, relevant and comparable indicators. [for details, see: Meritum (2001)]

11. Considerations concerning intangible assets

Based on the work of a number of authors dissatisfied with the presentation and recognition of intangible assets, several ideas have been put forward concerning the improvement and completion of the current accounting system.

Lev and Zarowin (1999) point out that the uncertainty of the business success decreases and the reliability of financial data increases in parallel with the progress of development (from idea to testing and product development). Therefore, the authors recommend that intangible assets having passed certain *determined technologic feasibility tests* could be capitalised. As opposed to the present view taken by accounting regulations, they consider that asset by asset recognition justifies the capitalisation of the entire historical project costs. The *fair value approach* proposed by Powell (2003) suggests that the entity could capitalise any identifiable intangible asset, regardless of the circumstances of its creation, if it is reliably measurable and if probable future economic benefits are expected. In this case, the capitalisation of the assets should be performed at fair value.

Lev and Zarowin (1999) furthermore consider it necessary to *re-prepare and disclose financial statements* where the capitalisation of earlier intangible expenses occurs. This is because, although financial statements reflect the effects of past events, they largely depend on the estimates concerning future events. As future events become more certain, the level of uncertainty decreases. The authors think that the re-preparation of the financial statements of closed years, when future events have become past, would reflect past performance more truthfully. On the other hand, the opponents of this idea claim that revised historical information is no longer relevant for decision-makers, and could even confuse stakeholders. Lev and Zarowin refute this by citing the example of GDP data disclosure which is also revised and amended continuously and even ulteriorly. Skinner (2008) considers that this approach would entail a continual revision of all information and figures disclosed earlier, which would undermine the confidence of stakeholders in the reliability of those data. While Lev and Zarowin recommend the repeated preparation of earlier financial statements, Hoegh-Krohn and Knivsfla (2000) consider that the capitalisation of the

entire cost might be possible by the recognition of revenues in the period where the recapitalisation is proposed. To avoid the manipulation of profit, the authors think that the capitalisation of past costs should only be permitted if the entity discloses preliminary information in financial statements of the year where the costs are accounted for as expenses, with reference to the possibility of later capitalisation.

The use of the *notes* as a medium for the publication of information concerning intangible assets seems to be a solution in line with the current reporting system. "The form and content of the notes are not standardised; it is left to the compiler's judgement and discretion to decide what and to what extent they think of sufficient relevance to be disclosed." [Tóthné (2010)] In the context of the Hungarian accounting system, also a *supplement to the business report* to be prepared by entities publishing an annual report could be used for this purpose. The Accounting Act provides that the business report shall contain an exhaustive analysis of the company's performance and any improvement in business trends, consistent with the company's size and structure. This analysis shall contain financial and non-financial performance indicators relevant in terms of the company's business operations. In this context, the disclosure related to intangible assets may play a more important role. The option of disclosure in the notes is supported by its wider scope, for – as opposed to the business report – it is published not only by entities preparing an annual report but also by those who compile simplified annual reports. Whatever the statement including additional information concerning intangible assets may be, its compiler should make sure that this information builds on past facts and at the same time is relevant for the future. [DiPiazz et al. (2006)] Despite the ever greater demand for public accounting information, steps are continually taken to alleviate administrative burdens, which tend to result in the restriction of the scope of business information to be disclosed. In the Hungarian accounting practice, this trend is reflected in the introduction of the specific simplified annual report and the micro-entity report.

The *intellectual capital statements* presented above (Danish intellectual capital statement and MERITUM model) prove that several professionals hope to find the solution to the theoretical problems related to intangibles in the preparation of an independent intellectual capital statement. An intellectual capital statement is

actually the detailed elaboration of the 'learning and growth' dimension of the Kaplan-Norton Balanced Scorecard model, i.e. the structured alignment and presentation of information relating to intellectual capital elements. Companies which have published an intellectual capital statement "often want to show that they are innovative and flexible, and that knowledge and human resources are important assets". [Danish Ministry of Science (2003) p. 8] Intellectual capital statements typically break down corporate strategies into action plans and assign financial and non-financial indicators to them. Bőgel (1998) underlines that actually, company management usually does not know what intellectual capital is invested in the firm, which makes it rather difficult to measure its pay-off. It is undoubtedly an achievement if the company is able to assign indicators to intellectual capital elements. However, some factors may limit the reliability and usability of the indicators used in the intellectual capital statement. Due to industry and company specific elements, indicators are hard to standardise. The identification and the definition of possible intellectual capital elements is in itself quite complicated, and the corresponding indicators may be very varied and numerous. Indicators may only be standardised at a very general level, which however will result in a generalised disclosure, which provides no added value. Because of the diversity and multiplicity of indicators, comparative analyses between companies are also hard to effectuate. The choice of indicators, in itself, has a certain element of subjectivity, not to mention the case where the management intentionally omits certain indicators reflecting unfavourable positions. A great number of indicators would be difficult or costly to demonstrate in an objective manner, and companies typically do not have enough professional experience and practice in the collection of intellectual capital related information. In the light of the cost/benefit principle, the above considerations may raise doubts as to the justifiedness of the compilation of an intellectual capital statement. What is more, the contribution of non-financial indicators to the company's performance is hard to quantify. Nevertheless, the Scandinavian models prove that the preparation of intellectual capital statements may actually become an operational practice. "An external intellectual capital statement only has effect where the target group wants to read it, where the group understands its content and believes its messages. To ensure this, an intellectual capital statement should include relevant information and comments, reflect reality for the company, present correct numerical data, and reveal the methods used". [Danish Ministry of Science (2003)

p. 48] As standardisation is impossible, it is hard to impose an obligation to present intellectual capital statements with a determined structure. It might be more expedient for the regulation to set out mandatory instructions concerning the information content, but to leave the form of presentation to the entity's discretion.

12. Research hypotheses

The assumptions formulated in the research hypotheses follow on the statements made in the theoretical section. In relation to the accounting recognition of intangible assets, the greatest number of issues and problems relate to the capitalisability of intangibles. **Hypotheses 1 and 2** (both comprising two subhypotheses) intend to explore the possibility to recognise them as assets in Hungary. In addition to the issue of capitalisation, also the issue of the quantification of the market value of intangible assets needs to be examined, as it is a general accounting task in every company reporting intangible assets in its books. **Hypothesis H3** tests the obstacles to their reliable market valuation. An economic phenomenon or asset element may represent important information concerning the company even if it does not meet the capitalisation criteria. Deák (2008) uses the term "presentability" for this phenomenon. Companies may, and it is indeed their responsibility to, disclose in the notes or in some other document the effects on the business of any economic phenomena not recognised in the balance sheet. In Hungarian practice, independent intellectual capital statements are typically not or rarely prepared; therefore I will analyse the disclosure of information concerning intangible assets as it appears in the notes. **Hypothesis H4** (comprising two subhypotheses) summarises the assumptions regarding disclosure.

H1: Entities operating in the Hungarian accounting regulatory framework

a) do not recognise a significant portion of the intangible assets supporting the company's operations in the financial statements;

b) capitalise a larger portion of acquired than internally generated intangible assets.

The first hypothesis centres on the basic problem widely explored in professional literature that the prerequisites of capitalising intangible expenses (investments) are difficult to fulfil. The economic value of intangible assets is mostly attributable to novelty and individuality, which do not always reliably ensure future economic benefits. A certain part of a company's intangible assets is not consciously produced. Therefore, it may be hard to identify the date from which systematic knowledge is

available as an asset. Thus, reliably measuring the costs of internally generated intangible assets causes difficulties in many cases. Other intangible assets represented by knowledge and practice form such an integral part of a company's operations that their values cannot be determined separately and establishing the related economic benefits also requires significant efforts. All these lead to the conclusion that the majority of companies are not able or willing to recognise their intangible expenses as assets because it is too complicated (if not impossible) to verify that the conditions of capitalisation are met. This is the assumption that Subhypothesis H1/a aims to prove. Subhypothesis H1/b follows from the differentiated accounting treatment of internally produced and acquired assets. The fulfilment of the conditions of capitalisation can be more probably and objectively proved in the case of acquired (typically purchased) than internally generated intangible assets.

H2: The recognition of intangible assets in the balance sheet and the amount of research and development expenses depend on

a) the entity's size;

b) the economic sector and the nature of the business activity.

The first subhypothesis of the second hypothesis is based on international research concluding that the willingness to capitalise assets depends on the entity's size. [see e.g.: Ferrari–Montanari (2010)] The basic assumption is that small and medium-sized enterprises typically have internal sources of growth, base their activities primarily on internally generated intangible assets (that are often not consciously produced and not identified) and purchase, for lack of sufficient funds, only intangible assets that are indispensable to their operations (e.g. licences, software required for operation). However, large corporations are more likely to pursue conscious research and development activities with measurable and capitalisable expenses and to have the capital that allows them to purchase intangible assets that provide competitive advantages.

Academic literature amply analyses and demonstrates the key role of intellectual capital in business life and in the operation and competitiveness of companies. However, intangible assets can contribute to business value creation in various ways and to different extents. Whether intangible assets play a vital or secondary role in a company's operations depends to a large extent on the direct economic environment (sector) in which a company is engaged. The second subhypothesis is based on the fact that companies invest higher amounts in intangible assets and thus capitalise more assets in markets in which constant renewal and individuality are prerequisites for attaining a competitive advantage. Statutory disclosure and reporting obligations made it possible to examine research and development expenses separately.

H3: The majority of companies do not quantify the market value of intangible assets at the year-end valuation.

As outlined in the theoretical section, the Hungarian accounting regulation stipulates that the market value of assets shall be determined specially upon their entry, and regularly at each year-end valuation. As intangible assets are unique, there are no effective intangible markets or comparable market prices. The evaluation method backed by theory and practice is extremely complex, its application requires extensive experience. For lack of suitable experience, it is very expensive to get access to databases or to consult an expert. Due to the above difficulties I presumed that the book value of intangible assets is rarely checked against their market value in customary Hungarian practices.

H4: Disclosures in the financial statements on intangible assets

a) are typically confined to the minimum statutorily required information;

b) depend on the entity's size.

The Accounting Act stipulates minimum disclosure requirements for the notes to financial statements, thus also for intangible assets. However, companies need to share more than the statutorily required minimum amount of information with market players if this is required to present a true and fair view. Yet, companies do not like sharing information apart from the obligatory – and easily accountable – minimum disclosure requirements. The intention to provide more credible and accurate information to stakeholders tends to be outweighed by concerns regarding the publication of sensitive company information. Furthermore, information on intangible assets that could be valuable to market players is not even available in most cases because of the disproportion between their costs and benefits. This is the assumption that Subhypothesis H4/a aims to prove.

International research shows that larger corporations disclose more information of a higher quality owing to their abundance of resources. [see e.g. Holland-Foo's research (2003), cited by Kang-Gray (2011)] Also, larger corporations depend to a greater extent on sources of investment and market perception. Therefore, the quantity and quality of disclosed information plays a more important role for them. I expect that Subhypothesis H4/b will confirm this in the context of the Hungarian practice.

13. Verification of the hypotheses

13.1. Scope of the research, data sources

The *population* used for the verification of the hypotheses comprises business entities covered by the Hungarian Accounting Act and preparing financial statements supported by double-entry bookkeeping. Only entities pursuing a business activity were included in the observation; non-profit enterprises were excluded from the population examined. The sampling units are business entities with a continuous operation, thus excluding companies in specific situations (i.e. under final settlement, liquidation, bankruptcy proceedings, forced deletion etc.).

Three data sources were used as a *sampling frame*:

- the corporate tax return database of the National Tax and Customs Administration;
- individual corporate financial statements available through the Company Information Database of Wolters Kluwer Kft. and the Service of Company Information and Electronic Company Registration of the Ministry of Public Administration and Justice; and
- a questionnaire survey among certified accountants with a regular training obligation.

In-depth interviews conducted with auditors and accounting professionals contributed to the empirical research as complementary data sources.

The *observation units* of the empirical research are the financial statements of business entities. The data in the available corporate tax returns relate to the business year 2011; for the sake of consistency, I used the individual corporate financial statements for the same year. For the empirical research, I also used data from a questionnaire which I prepared. One of the main criteria for the selection of the target group was that a substantial number of accounting professionals work for more than one company, so they provided insight into the accounting practices of a wider scope of businesses. Therefore, instead of focusing on a specific business year or economic operator, the questionnaire aimed to find out about the experience and practices of

the accountants preparing the financial statements. This also applies to the in-depth interviews.

The data of the corporate tax returns – following data filtering – were entirely included in the research. For individual financial statements, I used the method of simple random sampling (without replacement), that is, the objects had the same probability of being chosen. After the data filtering, the population units were assigned ordinal numbers of which the units to be included in the sample were selected using a random number generator. The sample size for individual financial statements was 300 (number of units). For the verification of the hypotheses, I also included the financial statements of the 53 joint stock companies listed on the Budapest Stock Exchange in 2011 in my research. The answers to the questionnaire have been entirely processed.

In an empirical research, representativeness is an essential issue. Representativeness means that "the sample ensures a typical representation of the population with reference to a certain variable" [Sajtos–Mitev (2007) p. 36] Representativeness, however, can never be guaranteed with complete assurance. Rudas (1998) [cited in: Sajtos–Mitev (2007) p. 36] points out that to be able to deliver a judgement on representativeness, "the values obtained from the sample should be compared with the values characteristic of the population. These latter values, however, are not known. Indeed, if they were known, there would be no need to conduct the research." From the samples available for the verification of the hypotheses, the data from corporate tax returns approximate the demonstration of representativeness the most closely, as the database contains the data of all companies using double-entry bookkeeping and having submitted a corporate tax return for the year 2011. The other data sources may not be considered as representative.

The statistical processing of the data sets was carried out using the IBM SPSS Statistics 20 software package provided by Corvinus University of Budapest. Therefore, the statistical output tables shown in the dissertation display results obtained from the SPSS software.

During the *statistical analysis* of the hypotheses, I calculated additional variables from the numerical data (for example, the ratio of intangible assets to the balance sheet total). I examined the size differentiation of Hungarian companies by balance sheet total and net turnover. During the review of corporate income tax returns and the separate financial statements, I analysed distributions and ratios, and performed correlation analysis and cluster analysis. In the survey responses, I measured percentage distribution, and carried out the Friedman test and the Wilcoxon signed-rank test (where applicable).

13.2. Characteristics of the various databases

13.2.1. Data from corporate income tax returns (AB1 database)

I have collected some of the empirical data from 2011 corporate income tax returns (form 1129) made available under a cooperation agreement between the National Tax and Customs Administration and Corvinus University of Budapest. The database contains the data of economic entities required to submit Hungarian corporate income tax returns, without any identifiable information. I selected this well-populated database as an empirical resource because Hungarian corporate income tax returns include data relevant to my research. *Annex 1* indicates which sections of the tax returns were used in the research.

The database contains 319 criteria of the tax returns of 409,007 organisations, including information on many aspects of business activity and several data from the financial statements. The database does not contain entities either using a form of taxation other than corporate tax (such as simplified corporate tax, small taxpayers' itemised lump sum tax [KATA] or small business tax [KIVA]) or not having submitted a corporate tax return in 2011 due to the discontinuation of their operation or by omission, even if they would normally fall under the scope of corporate tax and would be obliged to submit such returns.

Before performing the statistical analyses, I *cleared* the database from evidently erroneous observations. An observation was evidently erroneous if the total of the

assets was not equal to the total of the equity and liabilities. The database did not comprise such cases.

In the next step, I performed the *filtering of the database*. The filtering had a double objective: to exclude certain types of tax subjects and any variables irrelevant for the research. The primary population to be examined by the research was the population of profit-oriented Hungarian business entities. Not only business entities but also some other organisations are liable to submit tax returns[25]; therefore I had to exclude any taxpayers that did not meet this criterion. The filtering was performed using some specific lines in the corporate income tax return. Taxpayers using single-entry bookkeeping have to fill in certain specific lines, but the database did not contain the respective values. Table 2 shows which specific data in the corporate tax returns were used for the purpose of filtering.

[25] The following resident persons shall be deemed resident taxpayers and subject to corporate tax: business associations; cooperative societies; public companies trusts, other state-controlled economic organizations, special purpose entities, and subsidiaries; law offices, court bailiffs' offices, patent agencies, notary's offices, and forest management associations; Employee Stock Ownership Plans; water management associations, foundations, public foundations, associations, public bodies, ecclesiastical legal entities, housing cooperatives, and voluntary mutual insurance funds; institutions of higher learning, student hostels; European groupings of territorial cooperation. sole proprietorships. the European Research Infrastructure Consortium (ERIC). Foreign nationals shall be deemed taxpayers, as well as nonresident entities whose head office is located abroad if they carry out business operations at their branches in Hungary, provided that they are not considered resident taxpayers due to the location of their head office; if they obtain any income through the transfer or withdrawal of participating interest in a company with real estate holdings. [Act LXXXI of 1996 on Corporate Tax and Dividend Tax Section 2]

Specific data in corporate tax returns used for the purpose of filtering

Type of organisation	Line of corporate tax returns
Non-profit enterprises	1129-04-02 21
	1129-04-02 22
	1129-04-02 23
Other public benefit organisations (foundation, public foundation, association, public body, institution of higher education), national partner organisations, ecclesiastical legal entities	1129-01-01 09
	1129-03-02 31
	1129-03-02 32
	1129-03-02 33
	1129-04-02 19
Corporate societies, scholar societies	1129-01-01 02
	1129-04-02 20
	1129-05-01 09
Domestic premises of foreign enterprises	1129-03-02 34
	1129-04-02 24
	1129-04-02 25

Table 2

A total of 4,522 taxpayers have been excluded through the filtering process, leaving 404,485 taxpayers in the database. Subsequently, I excluded taxpayers with tax returns in which the values for intangible assets and the balance sheet total were missing, as these data were indispensable for the research. Another 4,082 taxpayers were excluded in this step, leaving another 400,403 sampling units in the database. The rate of data excluded by the filtering exercise was 2.1%, leaving a sufficient number of observation units to be able to draw conclusions from.

For the sake of easy manageability, I restricted the database to the variables which were relevant to the research. I translated these variables into calculated variables. (I will describe the variables defined for the purposes of the research in the sections on the verification of the hypotheses.) Table 3 summarises the variables of the corporate tax return database which were included in the analysis.

Variables of corporate tax returns included in the analysis

Group	Variable	Line of corporate tax returns
Data about enterprises	main economic activity	TEAOR code
	average statistical staff headcount	1129-A-02-02 14 a)
Balance sheet data	balance sheet total	1129-A-01 39
	intangible assets in balance sheet	1129-A-01 01
	net value of intangible assets on balance sheet date	1129-A-02-01 01 b)
	impairment losses of intangible assets	1129-A-02-01 07 b)
Income statement data	net turnover	1129-07-01 01
R&D data	direct internal research and development costs incurred in the business year reported as expenses, less any grants received	1129-03-02 21

Table 3

13.2.2. Data from separate financial statements (AB2 database)

The data table obtained from the AB1 database did not contain all of the data required for testing the hypotheses. I therefore supplemented the analysis of the AB1 database with the analysis of separate corporate financial statements.

The Company Information Database of Wolters Kluwer Kft. contains the key public data of the companies in the Registry. The list of companies obtained from the database included 541,446 registered organisations which I filtered to obtain the list of operational companies. This resulted in a list of 535,163 units. I performed another filtering to exclude non-business entities: cooperatives (4,169), forestry and public utility companies (1,444), commercial representations (1,206), branch sites (625), individual enterprises (602), associations, joint ventures, bailiffs' and notaries' offices (236), and non-profit business entities (3,175). This yielded a list of 523,706 units containing operational business entities. I assigned ordinal numbers to the sampling units and chose 300 elements at random, using a random number function.

The analysis covered the 2011 corporate financial statements of the entities in the sample, of which I examined the quantitative (balance sheet and profit and loss account) and narrative (notes) sections. Where the Company Information Database did not contain the financial statement of the selected company, I checked its availability through the website of the Service of Company Information and Electronic Company Registration of the Ministry of Public Administration and Justice (e-beszamolo.kim.gov.hu). 95 of the 300 sampling units (32%) could not be included in the analysis because either they were founded later than 2012 and therefore did not have a 2011 annual report (31), or they failed to submit a financial statement for reason of forced deletion from the Registry or initiation of an enforcement procedure, or by simple omission (64). Consequently, the *financial statements of 205 entities* were covered by the analysis.

Necessarily, the low number of sampling units (0.06% of the sampling frame) may not be considered as representative; nor was it suitable for the mapping out of trends dependent on company sizes, due to the specificities of the Hungarian micro-entity structure. For this reason, I supplemented the sample with the examination of the 2011 annual reports of 57 share issuers listed on the Budapest Stock Exchange in 2011. This sample had to be cleared from companies that had not prepared financial statements in accordance with the Hungarian Accounting Act. 4 companies with foreign head offices did not disclose a financial statement drawn up in line with the Hungarian regulations; therefore, the sampling frame contained *53 financial statements of listed companies*. The list of listed companies examined is included in Annex 2.

13.2.3. Data from the certified accountants' survey (AB3 database)

The survey was conducted among certified public accountants who took part in mandatory professional development courses, between February and September 2013. The questionnaires were either distributed online or filled in on paper by those attending the courses. The 600 accountants who took part in the courses submitted 116 completed questionnaires, which amounts to a response rate of 19%.[26] From the completed questionnaires, 114 could be evaluated. The questionnaire filled in by the certified accountants is included in *Annex 3*.

The survey questions were aimed at gathering the data necessary for the verification of the hypotheses. The first three questions concern the presentation of intangible assets in financial statements [Subhypothesis H1/a]. The fourth question relates to the differentiation between internally generated and acquired assets [Subhypothesis H1/b]. Two questions (no. 5 to 8) examine the differences in the accounting practices of companies according to their size and activity, aiming to verify Subhypotheses H2/a and H2/b. Another three questions concerning the quantification of the market value of intangible assets (no. 9 to 11) served to verify Hypothesis H3. Questions 12 to 16 analysed disclosures related to intangible assets [Subhypotheses H4/a and H4/b].

I only included closed-ended questions in the questionnaires, and answers had to be provided on a scale of 1 to 6 (where 1 meant, for example, "It did not occur in any financial statements," and 6 meant "It occurred in every financial statement"). For some questions, I added an additional category to the 1-to-6 scale: "N," which stands for lack of occurrence (e.g. "I have no such clients"). For the questions, a scale of 1 to 6 or 1 to 7 was thus available. The main reason for choosing a scale-based selection was to ensure that the largest possible sample can be collected, as this method allows for easy completion and encourages responses. The primary objective of the survey was to gain insight into accounting practices related to intangible assets, and not the collection of exact data. Therefore, the advantages of a larger

[26] Bosnyák [(2003) p. 99] reports a 25% and Ducsai [(2011) p. 141] a 27% response rate; the rate was as low as 1.52% for Lakatos [(2009) p. 132] and 3.3% for Mohl [(2013) p. 106].

sample outweighed the disadvantages of data loss resulting from the scaled responses.

Before presenting the findings of the questionnaire research, I insist on emphasising that they are *not statistically representative*. However, *no further data sources were available* for the verification of some of the hypotheses (partly due to the scarcity of resources). Consequently, I had to use the evaluation of the questionnaire responses as the primary tool for the confirmation or rejection of the (sub)hypotheses.

13.2.4. Other data sources

I supplemented the statistical results of the numerical data obtained from the different databases and the survey with in-depth interviews. The personal discussions with auditors and accounting professionals were focused on the certified accountants' survey questions. My objective was to interpret and evaluate together the key topics of this dissertation (capitalisation, valuation, and disclosure) and the responses. The in-depth interviews with professionals supported the numeric statistical results of the other data sources as well as their interpretation, and served as contrastive opinions regarding the acceptance or rejection of the individual hypotheses.

13.3. Verification of Hypothesis H1

H1: Entities operating in the Hungarian accounting regulatory framework

a) **do not recognise a significant portion of the intangible assets supporting the company's operations in the financial statements;**
b) **capitalise a larger portion of acquired than internally generated intangible assets.**

13.3.1. Verification of Subhypothesis H1/a

Verification based on the data of Database AB1

In order to verify Subhypothesis H1/a, I first examined the frequency of intangible assets in financial statements and their proportion compared to the balance sheet total.

Following the data filtering, database AB1 consisted of 400,403 sampling units. The financial statements of 53,709 entities in the database (i.e. 13.41%) included intangible assets. For the purpose of further analysis, I excluded intangibles of a value under HUF 10,000, as I considered such asset values as negligible. The financial statements of 48,654 entities included intangible assets of a value exceeding HUF 10,000. This means that **only 12.2% of the financial statements analysed presented intangible assets of a value exceeding HUF 10,000**.

According to the descriptive statistics (cf.: *Annex 4*), an intangible asset value of HUF 12,000 occurred most frequently in the 48,654 financial statements. The median was HUF 272,000, i.e. half of the examined financial statements showed intangible assets of a lower value and half of them a higher value than this amount. The average value of the intangibles was HUF 63.212 million, with an extreme maximum of HUF 446,402 million, which highlighted the necessity to filter for outliers. Extreme values may originate from erroneous data provision, but even if they are real, they can significantly distort the statistics.

The boxplot generated by the SPSS software provides a graphic illustration of the analyses of outlier values. The figure attached in *Annex 4* clearly indicated the incidence of outlier values in the database. Outliers may be identified and excluded using the method of definition of standardised values. The theory of standard normal distribution holds that in samples of more than 80 units, values higher than 3 should be considered as outliers. [Sajtos–Mitev (2007) p. 122] After the creation of standardised variables, 48 units took on a value over 3. Consequently, the minimal threshold (HUF 10,000) was complemented by a maximum threshold aimed at excluding extreme values (HUF 8,969 million). Following the exclusion of intangible assets with very high and low values, I obtained a database of 48,606 units, on which I performed the subsequent statistical operations.

After the filtering, no or hardly any change occurred in the value of the mode (HUF 12,000) and the median (HUF 271,000) of the value of the intangibles as indicated in the financial statements. Due to the exclusion of extremely high values, the average asset value decreased to HUF 17.727 million. The descriptive statistics pointed out that **in 80% of the financial statements including intangible assets, the value of the reported intangibles did not exceed HUF 3 million**.

For the verification of Subhypothesis H1/a, I examined the ratio of the reported value of intangibles and the entire asset value (balance sheet total) for the entire database. From the total asset value of HUF 157,523 billion presented in the database, intangible assets accounted for HUF 3,076 billion, or 1.95%. I also examined the ratio of intangible assets and balance sheet totals in the 48,606 individual financial statements including intangibles and filtered for outliers (and defined a new variable for this purpose in the database). The value of intangible assets was equal to 7.3% of the balance sheet total on average. At the same time, in 70% of the individual financial statements, the value of intangibles was less than 3% of the asset total. **The analyses therefore show that the value of intangible assets presented in the financial statements is very low compared to the total asset value.**

Verification based on the data of Database AB3

For the verification of Subhypothesis H1/a, I examined the answers given to the relevant questions of the certified accountant questionnaire.

> *Question 1: How frequently were intangible assets included in the balance sheets of the financial statements drawn up by you in accordance with the Accounting Act?*
>
> *Question 2: Assign a score to the assertion below. Costs related to intangible assets are typically reported as expenses, to the debit of the income, and are not capitalised.*
>
> *Question 3: What was the reason for the eventual failure to capitalise intangible costs and assets?*

I analysed the distribution of the occurrence of scores 1 to 6 for each answer. To increase the statistical explanatory power of the findings, I also checked the answers using the Friedman test. (For the detailed statistics, see *Annex 4*.)

Question 1 of the questionnaire concerns the frequency of intangible assets in the financial statements. The 114 questionnaires yielded more than 100 useable answers for each type of intangibles. Table 4 summarises the distribution of the scores.

Frequency of intangible assets in the financial statements[27]

Score	Capitalised value of formation / reorganization expenses	Capitalised value of experimental development	Intellectual products	Concessions, licenses and similar rights	Goodwill
1	69,3	74,3	9,1	10,2	58,4
2	15,8	18,8	10,9	18,5	20,8
3	8,9	4,0	16,4	24,1	8,9
4	2,0		21,8	11,1	5,9
5			15,5	16,7	2,0
6	4,0	3,0	26,4	19,4	4,0

Table 4

[27] 1: They did not occur in any financial statements … 6: They occurred in every financial statement

The answers show that within intangible assets, the capitalised value of formation/reorganization expenses and the capitalised value of experimental development were actually absent from the decisive majority of the financial statements. The occurrence of goodwill was somewhat higher, but also quite low. As the table shows, the intangible categories of intellectual products and concessions, licenses and similar rights were rather represented than not in about half of the financial statements. This was also confirmed by the Friedman test *(Annex 4)*, which found that intellectual products and concessions, licenses and similar rights were ranked first. The answers suggest that a high proportion of financial statements included intangible assets (typically intellectual products and concessions, licenses and similar rights). This seems to contradict the ratio of 13.41% obtained on the basis of the data of the AB1 database. It is possible that the financial statements prepared by the respondent accountants indeed included a higher amount of intangibles. However, we have to bear in mind that this comparison relates the findings based on the AB1 database consisting of 400,403 units to those of a questionnaire survey with an average of 100 answers. *Without questioning the truthfulness of the answers to the questionnaire, I consider that from a statistical aspect, based on the sample size, the findings of the AB1 database are more reliable.*

Question 2 of the questionnaire aimed to assess whether costs related to intangible assets are primarily capitalised or reported as expenses. Only 20.3% of the answers (see *Annex 4*) claimed that costs related to intangibles were typically recognised in the income of the given year instead of being capitalised. Nevertheless, the answers received in relation to Subhypothesis H1/b (see Section 13.3.2 below) suggest that in most cases, the reported intangible assets were not developed internally, and with acquired intangibles, the issue of capitalisability would not be expected to arise. It might seem to be a weakness now that the questionnaire did not precise what it meant by ‘intangible costs’, and it is possible that most respondents did not think of including the tacit intangibles supporting operation (human resources, customer relations, business know-how etc.) the capitalisation of which has probably never been considered. As a result of the above, *I was unable to evaluate the answers to Question 2 in a reliable way*.

Question 3 of the questionnaire concerns the obstacles to the capitalisation of intangible assets in the accounting professionals' practice. The Friedman test performed for the variables brought a surprising result. The answer with the highest score was the one claiming that *the role of intangible assets in the entity's operation was negligible, therefore the issue of capitalisation was considered irrelevant*. This means that most professionals who filled in the questionnaire think that intangible assets are unimportant for the operation of the companies. From the answers to Questions 2 and 3, we may conclude that **the entities examined through the questionnaire are unaware of both the real concept of intellectual capital and its strategic and operational role in the company, which probably implies the absolute lack of any conscious intellectual capital management effort.**

As specific obstacles to capitalisation, the uncertainty of the future economic benefits to be generated by the intangible asset was mentioned in the first place, followed by the difficulty to measure the cost value reliably (see the Friedman test for these variables in *Annex 4*). The answers concur with the reasons most widely cited in academic literature.

Based on the statistical results of database AB1, more reliable in terms of representativeness, we find that **the financial statements of most companies do not include intangible assets, or if they do, these assets have relatively low values and a very low ratio compared to the total asset value**.

Based on the above, I accept Subhypothesis H/1a.

13.3.2. Verification of Subhypothesis H1/b

For the verification of Subhypothesis H1/b, I could only retrieve relevant data from the questionnaire survey (Database AB3).

> *Question 4: What was the ratio of internally developed intangible assets within all capitalised intangible assets?*

I first excluded the obviously erroneous answers, for instance cases where the answer to Question 1 stated that a type of intangible assets did not occur in any financial statements, but the answer to Question 4 for the same asset type was not N (meaning that the concerned asset type did not occur in the financial statements) but gave a score of 1 to 6; or the opposite case where according to the answer to Question 1, a certain asset type was present in the financial statements, but the answer to Question 4 was N.

Frequency of internally developed intangible assets[28]

Score	Capitalised value of formation / reorganization expenses	Capitalised value of experimental development	Intellectual products	Concessions, licenses and similar rights
1	61,9	22,7	60,8	74,6
2	19,0	36,4	10,8	7,0
3	9,5	9,1	8,1	9,9
4		4,5	6,8	5,6
5		9,1	6,8	1,4
6	9,5	18,2	6,8	1,4

Table 5

A particularly salient point about the answers is that when asked to describe *concessions, licenses and similar rights*, a quarter of the respondents checked the box *'a certain amount of internally generated assets'*. However, the Accounting Act in

[28] 1: Practically no internally developed intangibles … 6: Exclusively internally developed intangibles

force clearly qualifies all concessions, licenses and similar rights as acquired rights[29]. **This suggests that certain accounting professionals do not fully understand the accounting concept of intangible assets.**

Both overall and with reference to the individual asset types, the results of the questionnaire show that intangible assets usually do not come into the entities' possession as a result of internal development activity. Concerning the distribution, the occurrence of internal generation was more frequent in the case of research and development, but the number of meaningful answers was relatively low for this asset group (22 answers were both consistent with Question 1 and made reference to the occurrence of research and development). All filtering conditions considered, I obtained a sample with such a low number of units that it was insufficient for the Friedman test; therefore, I examined in pairs whether there was a significant difference between the individual asset groups (*Annex 4*). I only observed a statistically significant difference for the categories of 'capitalised value of formation/reorganization expenses' and 'capitalised value of internal experimental development', with the latter being the higher. (The difference between the capitalised value of formation/reorganization expenses and the value of internally generated intellectual products hardly exceeded the significance threshold.)

Based on the available sample, therefore, we may conclude that the intangible assets included in the financial statements are typically not internally produced.

Based on the above, I accept Subhypothesis H1/b.

[29]Article 25 (6) Under intangible assets, concessions and similar rights shall denote those **acquired rights** which are not related to real property. This includes, in particular, lease rights, rights of use, trusteeship, rights of utilisation of intellectual products, brand names, licenses; as well as concessions, gaming rights, and other rights which are not related to immovables.

13.4. Verification of Hypothesis H2

H2: The recognition of intangible assets in the balance sheet and the amount of research and development expenses depend on

a) the entity's size;

b) the economic sector and the nature of the business activity.

13.4.1. Verification of Subhypothesis H2/a

Verification based on the data of Database AB1

The first step towards the verification of Subhypothesis H2/a is the *definition of the company size and its criteria*. The criteria used in EU law (Commission Recommendation 2003/361/EC concerning the definition of micro, small and medium-sized enterprises; also followed by the Hungarian regulation[30]) for the classification of companies according to size are the net turnover, the balance sheet total, and the average statistical staff headcount.

The average statistical headcount is a highly distortive factor in the differentiation of companies according to size. Lakatos (2009) and Kovács (2013) have shown that more than 90% of Hungarian companies have an average statistical headcount smaller than 10. This is also confirmed by a 2013 study by the European Commission[31], which found that 94.7% of Hungarian enterprises qualify as micro-entities with less than 10 employees.

The data of Database AB1 corroborate the findings of these earlier studies. 47,340 taxpayers failed to indicate the average statistical headcount in their corporate tax returns. 90% of the remaining 353,063 taxpayers have an average statistical headcount of less than 8 (cf.: *Annex 5*). This underpins the conclusions of the above mentioned studies, i.e. that the differentiation of companies based on the average statistical headcount does not yield reliable statistical results.

[30]Act XXXIV of 2004 on Small and Medium-sized Enterprises and the Support of their Development.
[31] http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/performance review/index_en.htm#h2-2 Downloaded on: 6 September 2013.

In a research, Kovács (2013, p. 142) examines the figures related to the classification of companies according to headcount categories from 2007 to 2010. Complementing the findings of this research with data from 2011, no significant difference exists in the headcount structure of Hungarian entities (cf.: *Table 6*). Comparing the headcount distribution of 2011 with data from 2007 and 2010, it appears that the decisive majority (more than 90%) of companies has an average statistical headcount of less than 10. Also the comparison with earlier research findings corroborates that it is justified to **ignore the factor of headcount for the purpose of the analysis**.

Development of headcount categories 2007-2011

Average headcount (employees)	Distribution of entities (%)			Distribution of headcount (%)		
	2007	2010	2011	2007	2010	2011
No employee	28,9	30,8	32,1	-	-	
1-2	41,1	41,7	41,8	8,1	9,3	9,9
3-10	21,6	20,2	19,3	16	17	17,4
11-50	6,7	5,9	5,5	21	20,7	20,7
51-250	1,4	1,1	1,1	20,9	19,6	19,9
250-	0,3	0,2	0,2	34	33,4	32,3

Table 6. Source: based on Kovács (2013, p. 142)

I proceeded in the size-based classification by considering the balance sheet total and the net turnover. For the fine-tuning of my analysis, I created layers in both these dimensions. For this exercise, I used the same band thresholds as the 2008 research of the Financial Accounting Department of Corvinus University of Budapest and Kovács (2013), because this made it possible to compare the results with those of the earlier researches, and to extend the analysis to the wealth and turnover structure and their changes.

Development of total assets categories 2007-2011

	Balance sheet total (mHUF)	Distribution of entities (%)			Distribution of assets (%)		
		2007	2010	2011	2007	2010	2011
1	0 – 10	57,1	59,4	60,9	0,5	0,4	0,4
2	10 – 50	24,5	23,1	22,3	1,6	1,4	1,3
3	50 – 100	6,7	6,4	6,1	1,3	1,2	1,1
4	100 – 250	5,5	5,3	5,1	2,4	2,1	2,0
5	250 – 500	2,5	2,4	2,3	2,5	2,2	2,1
6	500 – 2 500	2,7	2,5	2,5	7,7	6,8	6,6
7	2 500 – 12 500	0,7	0,7	0,6	10,3	9,1	8,5
8	12 500 –	0,2	0,2	0,2	73,8	76,8	78,0

Table 7. Source: based on Kovács (2013, p. 141)

Development of turnover categories 2007-2010

	Turnover total (mHUF)	Distribution of entities (%)			Distribution of turnover (%)		
		2007	2010	2011	2007	2010	2011
0	No turnover reported	17,6	17,6	10,2	-	-	-
1	0 – 10	37,9	40,8	49,7	0,7	0,7	0,7
2	10 – 50	24,2	23,4	22,6	2,9	3,0	2,9
3	50 – 100	7,1	6,7	6,3	2,6	2,6	2,5
4	100 – 250	6,5	5,8	5,5	5,3	5,0	4,7
5	250 – 500	2,9	2,6	2,5	5,2	5,0	4,8
6	500 – 2 500	2,8	2,4	2,4	15,0	13,5	13,6
7	2 500 – 12 500	0,6	0,6	0,6	16,8	15,6	15,8
8	12 500 –	0,2	0,1	0,1	51,5	54,7	55,1

Table 8. Source: based on Kovács (2013, p. 141)

Table 7 and 8 show that there is no significant difference between the data rows; the share of the higher bands increased a little, but this does not cause a significant difference or a structural change; therefore **I accepted layering according to band thresholds as a preliminary hypothesis**.

Subsequently, I examined the variables of Database AB1 related to intangible assets from the aspect of balance sheet total and turnover *(Table 9 and 10)*.

Intangible assets in dimension of balance sheet total

	Balance sheet total (mHUF)	Distribution of intangible asset's value* (%)	Intangible assets / Total assets per threshold (%)	Intangible assets / Balance sheet total on average
1	0 – 10	3,62	0,9	0,8
2	10 – 50	2,02	0,9	0,9
3	50 – 100	1,41	1,2	1,2
4	100 – 250	2,41	1,3	1,3
5	250 – 500	1,71	1,7	1,7
6	500 – 2 500	6,14	1,9	1,8
7	2 500 – 12 500	8,99	2,1	1,9
8	12 500 –	73,69	2,0	2,8

** based on corrected balance sheet total thresholds decreased by the value of the intangibles*

Table 9

Intangible assets in dimension of turnover total

	Turnover total (mHUF)	Distribution of intangible asset's value (%)	Intangible assets / Total assets per threshold (%)	Intangible assets / Balance sheet total on average
0	No turnover reported	2,3		
1	0 – 10	4,2	0,6	0,9
2	10 – 50	2,5	0,8	0,9
3	50 – 100	1,1	1,3	1,0
4	100 – 250	2,1	1,2	1,0
5	250 – 500	1,5	0,7	1,1
6	500 – 2 500	6,2	1,1	1,2
7	2 500 – 12 500	9,8	2,6	1,5
8	12 500 –	70,2	3,4	2,5

Table 10

The tables show that **the variables related to intangible assets take higher values in case of companies with higher balance sheet totals and turnover**. (The values of the balance sheet total and of the intangible assets are interrelated, as the balance sheet total is increased by the value of the eventual intangible assets – therefore for the first variable of Table 9, I used a corrected balance sheet total decreased by the value of the intangibles.) The increase according to layer bands is not steady for the distribution of intangible values, but the higher values are clearly observable in the three higher layer bands. The second variable I examined was the proportion of the value of all intangible assets and of the total asset value in the given layer. In the balance sheet total dimension, the increase in the ratio is comparatively steady; it is

somewhat more undulating in the turnover dimension; but as before, a higher rate of intangible assets is again characteristic of the two highest bands. The third variable examined was the average value of the 'intangible asset value / balance sheet total' ratio typical of the entities in each band. I found that both in the balance sheet total and the turnover dimension, the rate of intangibles within the company wealth tends to be higher for larger companies.

I used *correlation analysis* to test the strength of the relationship between the intangible assets and the balance sheet total or turnover. As correlation analysis is very sensitive to outliers, I generated standard values to exclude extremely high values for all of the three variables. The initial data list contained 53,709 financial statements with intangible assets. After the filtering for outliers, I obtained a set of 45,806 units. When performing correlation analysis, allowance needs to be made for the fact that the balance sheet total is not independent from the intangible asset value: the balance sheet total of financial statements including intangibles is accordingly higher. In order to exclude the set-subset effect, I used a corrected balance sheet total for the correlation analysis: I generated a new variable for the amount of the balance sheet total less intangible assets.

The absolute value of the linear correlation (Pearson) coefficient shows the strength of the relationship between the two variables, whereas the positive or negative sign of the coefficient indicates the direction of the relationship. The correlation took similar values for the corrected balance sheet total and the turnover dimensions: the correlation with the corrected balance sheet total was 0.189, and 0.199 for the net turnover (*Annex 5*). This means that **the linear relationship between intangible assets and the corrected balance sheet total and turnover is rather weak, and its direction is positive**.

I used *partial correlation analysis* to examine to what extent the strength of the relationship between two selected variables is affected by the third variable, in order to detect any eventual pseudo-correlations. If the partial correlation coefficient is zero, this means that the relationship between the first two variables is ostensible. If no difference is observed between the two correlations, then the controlled variable is without effect. [Sajtos–Mitev (2007) p. 212] In the two examined cases, Pearson's r

was higher than the partial correlation coefficient: 0.189 > 0.110, and 0.199 > 0.127. The value of the partial correlation coefficients did not reach zero, only moved upwards (*Annex 5*). This means that the *controlled variables partially explain the relationship between the variables*. This was also confirmed by the analysis of the correlation between the corrected balance sheet total and the turnover: a medium strong positive correlation exists between the two variables (Pearson's r = 0.471) (Annex 5).

In the corporate tax return, any direct *internal research and development* costs incurred in the business year reported as expenses[32], less any grants received, constitute a legal basis for the reduction of the tax base. Database AB1, therefore, makes it possible to analyse research expenses, bearing in mind that the decrease of the tax base and consequently the corresponding data provision only concern internal research activities and as such exclude the research expenses related to third party entities.

Within the data included in Database AB1, I examined the distribution of research expenses in the balance sheet total and turnover dimensions, according to the layer bands described above.

Research expenses in dimension of balance sheet and turnover total

		Balance sheet total (mHUF)	Turnover total (mHUF)
0	No turnover reported		0
1	0 – 10	0	0
2	10 – 50	0,2	0,2
3	50 – 100	0,2	0,4
4	100 – 250	0,9	1,0
5	250 – 500	1,1	1,2
6	500 – 2 500	6,1	4,4
7	2 500 – 12 500	15,4	5,4
8	12 500 –	76,1	87,4

Table 11

[32]Or, at the entity's discretion, the amount of depreciation reported for the business year in case it recognises the cost as the capitalised value of research and development or as an intellectual product.

It appears from the data in Table 11 that **companies with higher balance sheet totals and turnovers typically have higher expenses related to internal research and development**.

I used *correlation analysis* to test the strength of the relationship between the research expenses and the balance sheet total or turnover. I generated standard values to exclude extremely high values for all of the three variables, which left a sample of 676 units[33]. The correlation took similar values for the balance sheet total and the turnover dimensions: the correlation was 0.254 with the corrected balance sheet total, and 0.273 with the net turnover *(Annex 5)*. The results of the correlation analysis show that internal research expenses have a medium strong linear relationship of a positive direction with the balance sheet total and the turnover.

Similarly to the previous exercise, I used partial correlation analysis to detect ostensible relationships. In the two examined cases, Pearson's r was higher than the partial correlation coefficient: 0.254 > 0.075 and 0.273 > 0.128. The partial correlation coefficient between the research expenses and the balance sheet total approximated zero. This suggests that the correlation between the two variables is probably ostensible. In the combination of research expenses and turnover, a relationship exists between the variables, but the controlled balance sheet total variable partially explains their correlation (Annex 5).

Based on the available sample, I therefore draw the overall conclusion that a correlation exists between internal research expenses and the company size, primarily in the dimension of turnover based size differentiation.

[33]Only 740 of the 400,403 samples contained internal research expense.

Verification based on the data of Database AB2

The analysis of the individual financial statements partially allowed the verification of Subhypothesis H2/a. 20 (9.8%) of the 205 assessable financial statements selected at random from the Companies Registry included intangible assets. Out of the 53 financial statements of listed joint stock companies, 44 (83%) contained intangible assets. The ratio of the intangible asset value and the balance sheet total was 4.3% for the random sample and 5.3% for listed companies. The scarcity of available resources necessarily resulted in a limited sample taken from the Companies Registry. In line with Hungarian corporate structure, this sample mainly contained small entities, and there was no point in trying to differentiate between them according to their size. However, for the purpose of size-based differentiation, I decided to include the listed joint stock companies in the research. The findings **confirm** (even if only with a complementary effect) **the consequences of the analysis of Database AB1 drawn in the section on the verification of Subhypothesis H2/a concerning intangible assets**.

The Accounting Act stipulates that the entity should describe the costs of research and experimental development of the subject year in the notes to the financial statement[34]. However, a very great number of notes (random sample: 60%, listed companies: 40%) did not contain any reference at all to research expenses; and even where the Accounting Act was complied with, the occurrence of research expenses was rather low (this scenario was most typical of listed companies). Accordingly, **I was unable to verify in substance the relationship between research expenses and the company size based on the data of Database AB2**.

[34]Article 93 (4).

Verification based on the data of Database AB3

I also tested the correlation between intangible assets and the company size using the findings of the questionnaire survey.

> *Question 5: How frequently were intangible assets included in the financial statements of entities belonging to the following categories based on their turnover?*
>
> *Question 6: How frequently were intangible assets included in the financial statements of entities belonging to the following categories based on their balance sheet total?*

I used less layers in the turnover and balance sheet total dimensions than I did for the analysis of Database AB1. To simplify the respondents' task, I used four layer bands in each dimension. I was of the opinion that this layering would probably be suitable for the identification of size-based correlations.

The answers to the questionnaire are summarised in Table 12 and 13.

Intangible assets in dimension of balance sheet total[35]

Score	under mHUF 100	mHUF 100-500	mHUF 500-1000	above mHUF 1000
1	13,8	6,2	12,5	15,9
2	23,0	27,7	8,3	2,3
3	17,2	16,9	10,4	15,9
4	17,2	10,8	14,6	6,8
5	11,5	7,7	6,3	11,4
6	17,2	30,8	47,9	47,7

Table 12

[35] 1: They did not occur in any financial statements … 6: They occurred in every financial statement

Intangible assets in dimension of turnover [36]

Score	under mHUF 200	mHUF 200-500	mHUF 500-1000	above mHUF 1000
1	13,6	13,1	15,9	15,4
2	27,3	18,0	13,6	3,8
3	13,6	19,7	11,4	5,8
4	18,2	11,5	15,9	11,5
5	11,4	4,9	2,3	11,5
6	15,9	32,8	40,9	51,9

Table 13

The data in the tables show that the financial statements of companies with higher balance sheet totals and/or turnovers typically achieved higher scores, i.e. included more intangible assets. This is also corroborated by the results of the Friedman test performed for the variables: in both cases, the two upper layers received the highest rank numbers (their median was 4, compared to the medians of 3 and 2, respectively, of the two bottom layers) *(Annex 5)*. **The findings based on Database AB3 confirm the assumption of Subhypothesis H2/a concerning intangible assets.**

I therefore conclude that the inclusion of intangible assets in the balance sheet is related to the entity's size: larger companies tend to present a higher rate of intangibles with a higher overall value in their financial statements. The available samples did not make it possible to perform an exhaustive analysis of the possible correlation between research expenses and company size. I can only conclude based on the samples that a correlation exists between internal research expenses and the company size, primarily in the dimension of turnover based size differentiation.

According to the above, I accept Subhypothesis H2/a, with a limited effect with regard to research expenses.

[36] 1: They did not occur in any financial statements … 6: They occurred in every financial statement

13.4.2. Verification of Subhypothesis H2/b

Verification based on the data of Database AB1

The data retrieved form the corporate tax returns made it possible to test the correlation examined by Subhypothesis H2/b. I examined whether any correlation could be observed between the occurrence of intangible assets and research expenses and the type of business activity (industry) of the company. Database AB1 included the taxpayers' TEÁOR (activity – cf. NACE) codes, which permitted differentiation according to business sectors. I also had access to the value of the intangible assets presented in the financial statement, and to the value of internal research expenses. I included three variables in the analysis: the TEÁOR code, the ratio of the intangible asset value and the balance sheet total, and the magnitude of internal research expenses. (The breakdown of industries according to TEÁOR codes is presented in *Annex 5*.)

I used standard variables to exclude outlier values both for research expenses and for intangible assets. I also excluded financial statements without a TEÁOR code. After the data filtering, I obtained a sample of 400,226 units.

For the verification of Subhypothesis H2/b, I used the method of cluster analysis. First, I performed a hierarchical cluster analysis (Ward's method) to identify outliers and to determine the optimal number and centres of the clusters. Subsequently I used non-hierarchical cluster analysis based on the cluster centres obtained with the hierarchical method. I did so because the non-hierarchical cluster analysis performs a kind of fine-tuning after the hierarchical analysis, and makes it possible to change cluster memberships. [Sajtos–Mitev 298. o.]

I detected cases with extreme positions in terms of the clustering using a point cloud diagram and a simple chain method *(Annex 5)*. Extreme positions were held by the TEÁOR variables of research and development, coal mining, and mining of metal ores; I therefore excluded these three industries from the scope of my research. Metric scales of different levels – the amount of sectoral research expenses and the average rate of intangible assets – were available for the cluster analysis. If metric

scales of different levels are used, the contraction may distort the results. Therefore I used standardisation to transform the two variables to the same level: the standard scale has a mean of 0 and a deviation of 1. [Sajtos–Mitev (2007) p. 288] Subsequently, I used the standardised versions of the two variables.

I performed a hierarchical cluster analysis using *Ward's method*, which suggested that it might be expedient to form *three clusters* (for detailed results, see: *Annex 5*). The findings of the three-cluster analysis are shown in Table 14.

Three-cluster analysis based on Ward's method

Ward Method		Zscore (research)	Zscore (ratio of intang.)
1	Mean	-,2283621	-,4682295
	N	62	62
	Std. Deviation	,49542148	,37249441
2	Mean	-,4070081	1,4503480
	N	16	16
	Std. Deviation	,15346127	,90605854
3	Mean	2,9529397	,8320943
	N	7	7
	Std. Deviation	,54037705	1,36176167
Total	Mean	0E-7	0E-7
	N	85	85
	Std. Deviation	1,00000000	1,00000000

Table 14

The results show that relatively homogeneous groups were created as a result of the cluster analysis. The major characteristics of the three clusters are summarised in Table 15.

Interpretation of clusters

	Ratio of intangible asset	Internal research expenses	No. of cases
Cluster 1	**under** the average	**under** the average	62
Cluster 2	**above** the average	**under** the average	16
Cluster 3	**above** the average	**above** the average	7

Table 15

The smallest group is **Cluster 3** (7 industrial sectors), with companies performing internal research activities above the average (the corresponding research expenses are rather high), and with financial statements with a higher value of capitalised intangible assets than usual. The 16 industries in **Cluster 2** are not characterised by a high level of internal research activity, but their operation relies on a higher rate of intangible assets than the average. The companies in **Cluster 1**, regrouping the majority (62) of industrial sectors, do not engage in internal research activities and do not tend to present intangible assets in their financial statements.

To test the reliability and stability of the clusters, I used a *non-hierarchical k-means cluster analysis* with 3 clusters. The cluster centres generated by the method are shown in Table 16. We may observe that there is no great disparity compared to the cluster centres generated by the hierarchical cluster analysis. The interpretation of the clusters is identical with that described in the section on hierarchical cluster analysis. As far as the number of units is concerned, two clusters present some difference in a positive/negative dimension.

Final cluster centers

	Cluster		
	1	2	3
Zscore(ratio of intang)	,69250	1,55222	-,46489
Zscore(research)	2,80350	-,34036	-,27940

Table 16

Number of cases in the 3 clusters

Cluster	1	8,000
	2	15,000
	3	62,000
Valid		85,000
Missing		,000

Table 17

I examined whether the business sectors remained in the same clusters after the non-hierarchical cluster analysis. A change was observed in 6 cases (7%). With reference to the magnitudes and the fine-tuning role of non-hierarchical cluster analysis, I considered the three clusters to be sufficiently stable. The cluster characterised by higher than average internal research activity and intangible assets included, among others, pharmaceutical industry and IT services. The telecommunications, chemicals manufacturing and editing industries typically do not engage in much research activity, but they present a higher than average rate of intangible assets. The majority of sectors, however (such as building, real estate mediation or warehouse and transport activities) are not characterised by either internal research activity or a high rate of intangible assets presented in financial statements. The table detailing each business sector in the three clusters is attached in Annex 5.

Based on the above, we may conclude that the individual business sectors may be differentiated according to the order of magnitude of intangible assets included in the balance sheet and the level of internal research activity.

Verification based on the data of Database AB3

The questionnaire survey permitted a *complementary verification* of Subhypothesis H2/b. The diversity of business activities and the low number of questionnaires answered in a meaningful way did not make it possible to conduct a reliable statistical analysis, but the findings of the questionnaire survey were useful for the confirmation or refusal of the results drawn from Database AB1. Questions 7 and 8 of the questionnaire concerned the typical features of the various business sectors:

> *Question 7: How frequently were intangible assets included in the financial statements of entities belonging to the following categories based on the industry they operate in?*
>
> *Question 8: How frequently were research and development costs incurred during the operation of entities belonging to the following categories based on the industry they operate in?*

Before the evaluation of the responses, I excluded any inconsistent answers, i.e. those where the respondent checked contradictory options[37]. Table 18 summarises those answers which could be evaluated, and which were given by a respondent who had at least one client in the given industry and answered the questions concerning the occurrence of intangible assets and research activity.

Answers concerned business sector questions

Industrial sectors	No. of consistent answers (1-6)
Mining and quarrying; Manufacturing	8
Energy	8
Construction	28
Agriculture, hunting and forestry; Fishing	11
Wholesale and retail trade	52
Transport, storage	20
Hotels and restaurants	18
Communication	10
Real estate	15
Insurance; Financial intermediation	22
IT services	31
Manufacture of electrical equipment and computers	15
Pharmaceutical industry	6
Health and social work; Education	24
Consultation services	32

Table 18

[37]For instance, where the respondent checked option N for the energy industry for Question 7, meaning that he did not have any clients in that sector, but gave a score of 3 to the magnitude of research expenditures at Question 8.

The distribution of responses according to industrial sectors is presented by the tables in Annex 5. For a simplified graphic presentation of the results, I picked out the scores of 1 *(They did not occur in any financial statements)*, 3 *(They occurred in several financial statements but were not typical on the whole)* and 6 *(They occurred in every financial statement)* for every sector.

Figure 22

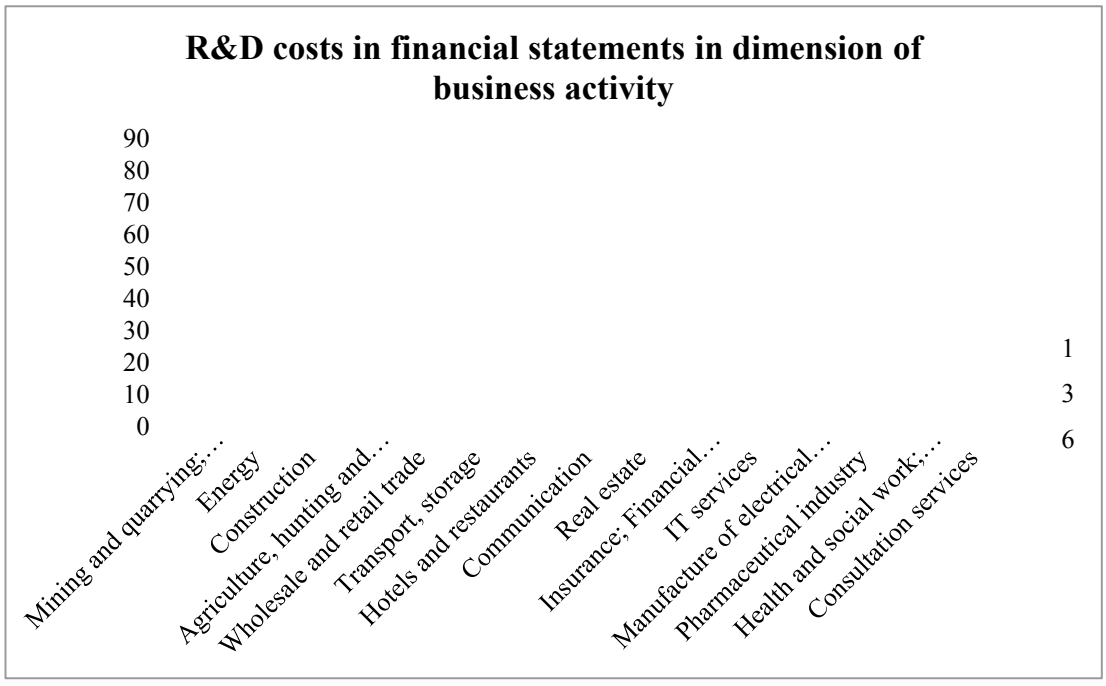


Figure 23

The findings from the non-representative sample show that the individual business activities are not homogeneous in terms of the role of intangible assets and the magnitude of research expenses. **The results of the questionnaire survey, therefore, confirm the conclusions drawn from the analysis of sample AB1.**

According to the above, I accept Subhypothesis H2/b, restricting the scope of research expenses to internal research activity.

13.5. Verification of Hypothesis H3

H3: The majority of companies do not quantify the market value of intangible assets at the year-end valuation.

Verification based on the data of Database AB1

Line 01 of sheet 1129-A-01 of the corporate tax return contains the value of the intangible assets in the balance sheet. As additional information, further information on intangible assets (such as the gross and net value of intangible assets without value adjustment on the balance sheet date) should be provided on sheet 1129-A-02-01. Part B of sheet 1129-A-02-01 must contain the amount of depreciation presented as a cost related to intangible assets as well as the amount of impairment losses reported as other expenses.

When verifying the balance sheet total, I found that the asset value was identical with the value of the equity and liabilities for every taxpayer. I subsequently considered the balance sheet value of intangibles entered in line 01 of sheet 1129-A-01 to be correct.

I compared the amount in line 01 of sheet 1129-A-01 with the net value as of the balance sheet date in line 1b of sheet 1129-A-02-01. As in the latter instance, the value of the intangible assets should be reported without using value adjustment, a difference between these two values does not necessarily represent a mistake. According to the instructions to return 1129[38], sheet 1129-A-02-01 does not include the amount of advance payments for investments. Although there is no specific provision concerning intangible assets, advance payments for intangibles should probably not be included in this sheet either. The explanation for the deviation between the balance sheet value (line 01 of sheet 1129-A-01) and the net value as of the balance sheet date (line 01b of sheet 1129-A-02-01) of intangible assets is presented in Table 19.

[38]http://nav.gov.hu/data/cms213511/1129.pdf. Downloaded on: 7 September 2013.

Explanation for the deviation between the balance sheet value and the net value as of the balance sheet date of intangible assets in corporate tax return

Variable 1	relation	Variable 2	Explanation for deviation
balance sheet value of intangible assets (1129-A-01 01)	=	net value as of the balance sheet date of intangible assets (1129-A-02-01 01b)	no advance payments for intangibles in financial statement
			no value adjustment of intangibles in financial statement
balance sheet value of intangible assets (1129-A-01 01)	>	net value as of the balance sheet date of intangible assets (1129-A-02-01 01b)	financial statement may include advance payments for intangibles
			financial statement may include value adjustment of intangibles
			calculation error in tax return
balance sheet value of intangible assets (1129-A-01 01)	<	net value as of the balance sheet date of intangible assets (1129-A-02-01 01b)	calculation error in tax return

Table 19

I performed the analysis on the database of 48,606 units cleared of outlier values for the purposes of the verification of Subhypothesis H1/a. I created a new variable (ImmatNETTO) for the difference between the balance sheet value and net value as of the balance sheet date of the intangible assets.

Deviation between the balance sheet value and the net value as of the balance sheet date of intangible assets in corporate tax return

ImmatNETTO	Frequency	Percent	Valid percent
positive	1 480	3,04	3,17
zero*	44 707	91,98	95,66
negativ	549	1,13	1,17
VALID TOTAL	*46 736*	*96,15*	*100*
missing	1 870	3,85	
TOTAL	48 606	100	

**I accepted the deviation as 'zero' in the range of HUF -1000 and +1000 as rounding difference*

Table 20

In 95.66% of valid observation units (46,736 of 44,707), the balance sheet value of the intangible assets was equal to the net value of the intangible assets without value adjustment. It may be concluded that **in 95.66% (the vast majority) of the financial statements including an intangible asset, no value adjustment[39] was performed in relation to the intangibles.**

Subsequently I examined the 1,480 cases with a positive difference, i.e. those financial statements where the possibility of a value adjustment was present, although not exclusively (considering the possibility of advance payments for intangibles and of calculation errors). The evaluation of the results presented in *Annex 6* shows that the value of the positive difference is not substantial (median: HUF 218,000, less than HUF 4 million in 80% of the financial statements).

For the purpose of testing this hypothesis, and in addition to the analysis of appreciations for value adjustment, I also examined the frequency of reported impairment losses. In accordance with Chapter 8.4.2, impairment is normally possible in the following three cases:

- as a result of changes in the market prices;
- as a result of changes in the conditionalities;
- as a result of physical changes.

In Database AB1, impairment was only applied in 0.83% of the financial statements (404 cases). Impairment applied for reasons of market valuation constitutes a subset of this 0.83%; therefore **we may conclude that impairment applied with reference to market valuation was represented in the sample to a negligible extent only[40]**.

[39]Or advance payments for intangible assets.

[40] When evaluating statistic results it has to be mentioned that specific simplified annual report eligible for financial year 2011 did not included any value adjusments of intangible assets or impairment losses based on market valuation. As this type of financial statement was not prevalent, I regarded its statistical effect as insignificant.

Verification based on the data of Database AB2

I compared the findings based on Database AB1 with the findings concerning the individual financial statements. Intangible assets were only present in 20 (9.8%) of the 205 assessable financial statements selected at random from the company registry. *None* of these 20 financial statements contained value adjustment, and none of the notes referred to the application of impairment. Surprisingly, *neither did the financial statements of much larger companies* (selected on purpose as of public interest) include any cases of value adjustment for intangible assets. The assets analyses of the notes show that impairment was applied in 5 cases (9.4%) only. The method of market valuation was mentioned in two cases (the DCF method; and 10% as a result of changes in the market conditions).

The low frequency in Database AB1 and AB2 of value adjustment and impairment applied for reasons of market valuation does not necessarily mean that only these few businesses performed a market valuation of intangible assets. We also have to take account of those entities who quantify the market value of intangible assets at the year-end valuation, but the valuation *does not yield a permanent and substantial difference* between the book value and the market value, and this is why no value adjustment or impairment is applied. We should also bear in mind that the application of a value adjustment is *only an option* provided by the Accounting Act. Therefore, the verification of the hypothesis needs to be complemented with the results of Database AB3.

Verification based on the data of Database AB3

The following questions in the questionnaire aimed at the verification of Hypothesis H3:

> *Question 9: How frequently did the financial statements drawn up by you in accordance with the Accounting Act contain value adjustment?*
>
> *Question 10: When preparing the financial statements, how often was the market value of intangible assets quantified at the year-end valuation?*

Question 11: Which method was used for the quantification of the market value of intangible assets at the year-end valuation (if performed)?

When evaluating answers to Question 9 and 10, I excluded any answers inconsistent with Question 1, as described in the section on the verification of Subhypothesis H1/b. I examined the distribution of the scores and the rank numbers resulting from the Friedman test on this sample. Table 21 summarises the distribution of scores given for the occurrence of value adjustment. The table shows that **no value adjustment related to intangible assets was presented in the vast majority of the examined financial statements**. The Friedman test performed on the two variables did not suggest a significant difference *(Annex 6)*.

Value adjustment of intangible assets in financial statements[41]

Score	Intellectual products	Concessions, licenses and similar rights
1	75,0	78,1
2	7,4	12,5
3	11,8	4,7
4	1,5	
5	2,9	1,6
6	1,5	3,1

Table 21

I mentioned earlier that the lack of reporting value adjustment or impairment losses does not necessarily mean that the entity fails to quantify the market value. (Other reasons might be the lack of a permanent and substantial difference, or the refusal to use the option to apply value adjustment.) Question 10 of the questionnaire asked for general information concerning the quantification of the market value of intangible assets at the year-end valuation. The data of Table 22 prove, and confirm earlier results supporting the assumption, that **the market value of intangible assets was usually not quantified at the year-end valuation.** Like in the case of Subhypothesis H1/b, all filtering conditions considered, I obtained a sample with such a low number of units that it was insufficient for the Friedman test; therefore, I examined in pairs whether there was a significant difference between the market valuation of the

[41] 1: They did not occur in any financial statements … 6: They occurred in every financial statement

individual asset groups *(Annex 6)*. Statistically, a significant difference was observed between the market valuation of the capitalised value of experimental development and of intellectual products, and between the market valuation of the capitalised value of experimental development and of concessions, licenses and similar rights.

Market value of intangible assets quantified [42]

Score	Capitalised value of formation / reorganization expenses	Capitalised value of experimental development	Intellectual products	Concessions, licenses and similar rights
1	61,9	63,2	69,7	73,6
2	14,3	26,3	14,5	11,1
3	4,8	10,5	7,9	5,6
4			2,6	5,6
5	4,8		2,6	2,8
6	14,3		2,6	1,4

Table 22

Question 11 concerned the sources and methodologies used for market valuation. Table 23 summarises the distribution of scores given for the resources used for market valuation.

Resources used for market valuation [43]

Score	Valuation professional (company)	Internal valuation methodology	Data from database	Available market information	Professional support from an auditor
1	75,9	72,5	76,4	64,8	53,7
2	3,7	5,9	3,6	7,4	7,4
3	3,7	9,8	9,1	7,4	11,1
4	9,3	3,9		7,4	9,3
5	5,6	5,9	7,3	1,9	9,3
6	1,9	2,0	3,6	11,1	9,3

Table 23

[42] 1: Never … 6: Always
[43] 1: Never … 6: Always

The data in the table as well as the results of the Friedman test *(Annex 6)* show that **the primary source of market valuation is the auditor's professional support** (median: 2.25) and **simple calculation based on readily available market information** (median: 2). This is explained by the fact that the application of value adjustment by all means necessitates the contribution of an auditor, which is then considered as a sufficient source for valuation; and also in other cases, the simplest and most cost-effective solutions are preferred. The least common methods are evaluations by commissioned valuators (a rather costly and time-consuming process), and the analysis of databases. The Wilcoxon signed-rank test *(Annex 6)* detected a significant difference between the auditor's professional support and the use of data from databases.

Table 24 summarises the distribution of scores given for the methodology used for market valuation.

Methodology used for market valuation [44]

Score	Asset replacement value	Market price of a similar asset	Revenue generated by asset	Combination of the three methods
1	74,5	61,1	82,7	82,7
2	5,9	7,4	5,8	1,9
3	5,9	3,7		3,8
4		7,4	1,9	
5	7,8	13,0	3,8	3,8
6	5,9	7,4	5,8	7,7

Table 24

The data in the table as well as the results of the Friedman test *(Annex 6)* show that **the primary method used for market valuation is the analysis of the market values of similar assets** (median: 2.08) and **calculation based on the asset replacement value** (median: 1.78). I assume that the reason for choosing these methods are their simplicity and the need to contain analysis costs. This result was confirmed by the Wilcoxon signed-rank test *(Annex 6)*, which showed that a significant difference exists between the examination of the market value of similar assets, and the yield-based calculations and combined methods.

[44] 1: Never … 6: Always

In conclusion, it appears based on the available sample that in most cases, the market value of intangible assets is not quantified at the year-end valuation, and if it is, the primary considerations in the choice of the sources and methods are simplicity and cost-effectiveness.

Based on the above, I accept Hypothesis H3.

13.6. Verification of Hypothesis H4

H4: Disclosures in the financial statements on intangible assets

a) are typically confined to the minimum statutorily required information;

b) depend on the entity's size.

13.6.1. Verification of Subhypothesis H4/a

Verification based on the data of Database AB2

I was able to verify he characteristics of disclosure concerning intangible assets through the itemised examination of individual financial statements and the evaluation of the answers to the questionnaire survey. The Accounting Act stipulates that the notes to the financial statement should contain disclosures related to intangible assets on asset movements, depreciation, impairment losses, any value adjustments (including the principles and methods of market valuation), and the costs incurred in the given year in connection with research and development. The notes to the simplified annual report contain a smaller amount of mandatory disclosures: for intangibles, only the presentation of value adjustment and research and development costs. The earlier regulation concerning the specific simplified annual report did not contain provisions about the mandatory disclosure of intangible-related information.

The random sample composed of individual financial statements typically contained simplified reports of small entities. The notes to 12 of the 20 financial statements which included intangible assets featured details concerning intangibles (although this was not compulsory for simplified annual reports), but they mostly consisted in the word-by-word citation of the provisions of the Accounting Act on valuation. Some two thirds of the notes did not include any reference to research expenses, although that is also obligatory for simplified annual reports.

Out of the 53 financial statements of listed joint stock companies, 44 contained intangible assets; only the notes to two of these failed to disclose information on

intangible assets (this was actually a mandatory requirement for annual reports). Contentwise, the disclosures typically included the reasons for any increases or decreases in the intangible assets, and described the depreciation process. As none of the financial statements included value adjustment, the corresponding disclosure was not applicable. Furthermore, the notes of the listed companies usually went into more detail concerning the types of intangible assets presented in the financial statement, described the general rules pertaining to depreciation (including write-off rates), and where applicable, the brief description of the research activity. The notes to one of the financial statements (Egis Gyógyszergyár Nyrt.) were particularly detailed and disclosed an exceptional quantity and quality of intangible-related information. 40% of the notes (similarly to the random sample) did not provide any description of the research expenses; in the remaining cases, either the exact amount of the research expenses was indicated, or a clear statement as to the fact that the company did not engage in research activities.

Concerning the analysis of the notes in the sample, it may be stated that **companies fulfil the bulk of the statutory disclosure requirements as per the Accounting Act, but tend to limit themselves to the disclosure of mandatory information and do not provide in-depth information about intangible assets**. **The available samples show that no information is disclosed about intellectual capital elements which are not included in the financial statement.**

Verification based on the data of Database AB3

The following questions of the certified accountants' questionnaire concerned Subhypothesis H4/b:

Question 12: Assignment of assertions concerning disclosure

Question 13: Why did the notes only disclose information and data concerning intangible assets to the extent of the statutory minimum (if applicable)?

Question 16: Assignment of assertions concerning additional information about intangible assets exceeding the statutory minimum

In Question 12, respondents first had to assess whether the notes only disclose any information and data concerning intangible assets as stipulated by the legislation. Out of the 107 answers received, 75 (70%) considered that this assertion applies to every client. 14 (13%) gave a score of 4 or 5, meaning that this assertion was, if not exclusively, but typically true of their clients (Annex 7). The answers to the questionnaire show that **more than 80% of companies only disclose information on intangible assets as required by legislation**.

The results of the questionnaire reveal that 75% of companies certainly and another 17% probably do not use any method whatever to manage and measure intellectual capital. The answers to the additional questions show that entities typically do not prepare any statement or analysis about the corporate intellectual capital either for internal or for external use. **This points to the conclusion that Hungarian companies typically do not consciously manage, analyse or report intellectual capital.**

The answer to Question 13 aimed to reveal the reasons for this very limited disclosure.

Reasons for limited disclosure of intangible assets [45]

Score	Risky	Not important	Cost / benefit principle	No additional information available	No (known) reason
1	65,8	27,7	62,3	30,1	70,1
2	5,1	2,4	5,2	2,4	4,5
3	6,3	7,2	5,2	8,4	3,0
4	1,3	6,0	2,6	3,6	
5	8,9	9,6	5,2	14,5	6,0
6	12,7	47,0	19,5	41,0	16,4

Table 25

The answers (Table 25) and the results of the Friedman test clearly show that companies only disclose statutorily required information on intangible assets because **the company management does not consider it important to disclose information exceeding the statutory minimum, and no analysis and assessment**

[45] 1: This was not the reason in any of the cases … 6: This was the reason in all cases

(additional to the mandatory accounting procedures) is performed concerning intangible assets, resulting in a lack of additional information. (These two answers had the highest rank numbers; the median was 4 in both cases; see *Annex 7*).

I was curious to know what opinion the respondent accounting professionals had formed about the provision of additional information concerning intangible assets exceeding the statutory minimum. The answers are summarised in Table 26.

Evaluation of additional information concerning intangible assets [46]

Score	Disclosure is useful	Disclosure is risky	Its generation is difficult and costly	Its generation is not important	Disclosure is not important
1	18,8	32,5	15,2	26,8	20,5
2	12,9	10,8	6,3	7,3	8,4
3	20,0	26,5	25,3	24,4	20,5
4	23,5	13,3	15,2	13,4	14,5
5	9,4	7,2	10,1	8,5	10,8
6	15,3	9,6	27,8	19,5	25,3

Table 26

The Friedman test shows that the highest rank number was assigned to the answer stating that **the generation of additional information concerning intangible assets is difficult and costly**; this means that this was the point on which the greatest number of professionals agreed. Similarly, opinions were homogeneous concerning the fact that **it is not important to disclose additional information** on intangibles. At the same time, most respondents considered that **the disclosure of additional information concerning intangible assets is not risky** for the company.

Based on the results of the analysed samples, I conclude that Hungarian companies do not disclose information exceeding the statutory minimum, and do not even consider this as a weakness.

Based on the above, I accept Subhypothesis H4/a.

[46] 1: I don't agree at all … 6: I entirely agree

13.6.2. Verification of Subhypothesis H4/b

Verification based on the data of Database AB2

The analysis of Subhypothesis H4/a found that smaller companies typically preparing simplified annual reports tend to be reserved about intangible assets, only inserting the sections of the relevant legislation on valuation. The examination of the notes to listed companies' financial statements showed that these are much more exhaustive both in terms of the information disclosed (which represents an additional obligation for the annual report) and the quality of the data and narrative analyses. The notes to listed companies' financial statements were more specific and more rich in effective information; they did not simply copy and paste passages from the legislation, but revealed the actual accounting practice. Even if these disclosures were also limited to the description of intangible assets included in the financial statement, these **larger entities (bearing a higher public interest) published more detailed information concerning their intangible assets**.

Verification based on the data of Database AB3

Questions 14 and 15 of the questionnaire examined the relationships between mandatory and voluntary disclosures based on company size:

Question 14: How frequently was mandatory and voluntary information concerning intangible assets disclosed in the notes to the financial statements of entities belonging to the following categories based on their turnover?

Question 15: How frequently was mandatory and voluntary information concerning intangible assets disclosed in the notes to the financial statements of entities belonging to the following categories based on their balance sheet total?

I analysed the occurrence of compulsory and voluntary disclosures concerning intangibles in parallel, and by doing so I first excluded any inconsistent answers. The meaningful answers to the questionnaire concerning **mandatory disclosure** are summarised in Table 27 and 28.

Mandatory disclosure concerning intangible assets in dimension of balance sheet total [47]

Score	under mHUF 100	mHUF 100-500	mHUF 500-1000	above mHUF 1000
1	16,9	17,3	18,9	17,1
2	14,1	11,5	8,1	
3	7,0	5,8		5,7
4	8,5	5,8	8,1	5,7
5	7,0	11,5	10,8	14,3
6	46,5	48,1	54,1	57,1

Table 27

Mandatory disclosure concerning intangible assets in dimension of turnover [48]

Score	under mHUF 200	mHUF 200-500	mHUF 500-1000	above mHUF 1000
1	17,1	16,7	15,6	17,5
2	12,9	8,3	6,3	2,5
3	8,6	8,3	3,1	5,0
4	10,0	4,2	12,5	5,0
5	5,7	10,4	6,3	12,5
6	45,7	52,1	56,3	57,5

Table 28

The data in the tables show that the financial statements of companies with higher balance sheet totals and/or turnovers typically achieved higher scores, i.e. **larger companies typically comply better with the mandatory statutory disclosure requirements concerning intangible assets**. This is also corroborated by the results of the Friedman test performed for the variables: in both cases, the two upper layers received the highest rank numbers (their median took values between 4 and 5) (Annex 7).

The meaningful answers to the questionnaire concerning **voluntary disclosure** are summarised in Table 29 and 30.

[47] 1: They did not occur in any financial statements … 6: They occurred in every financial statement
[48] 1: They did not occur in any financial statements … 6: They occurred in every financial statement

Voluntary disclosure concerning intangible assets in dimension of balance sheet total [49]

Score	under mHUF 100	mHUF 100-500	mHUF 500-1000	above mHUF 1000
1	71,9	70,2	69,4	71,9
2	15,8	6,4	2,8	3,1
3	1,8	6,4	5,6	3,1
4	3,5	8,5	13,9	9,4
5	1,8	2,1	2,8	9,4
6	5,3	6,4	5,6	3,1

Table 29

Voluntary disclosure concerning intangible assets in dimension of turnover [50]

Score	under mHUF 200	mHUF 200-500	mHUF 500-1000	above mHUF 1000
1	75,4	75,0	66,7	71,4
2	12,3	4,5	6,7	5,7
3	1,8	4,5		2,9
4	1,8	6,8	16,7	11,4
5	3,5	4,5	3,3	5,7
6	5,3	4,5	6,7	2,9

Table 30

The data in the tables show that **regardless of their size, companies typically do not disclose additional information concerning intangible assets**. The Friedman test performed on the balance sheet total found that the two higher layers received higher rank numbers, but the median of all four layers was 1. The layers according to turnover also had a median of 1, but there the Friedman test did not reveal a significant difference *(Annex 7)*. **As voluntary disclosure concerning intangible assets is quite rare, no statistically significant difference may be established according to the company size.**

[49] 1: They did not occur in any financial statements … 6: They occurred in every financial statement
[50] 1: They did not occur in any financial statements … 6: They occurred in every financial statement

Overall, we may therefore conclude that a correlation exists between the mandatory disclosure concerning intangible assets and the company size. As voluntary disclosure of information concerning intangible assets is not typical, any differentiation based on size is not applicable.

Based on the above, I confirm Subhypothesis 4/b for mandatory disclosure and reject it for voluntary disclosure.

14. Conclusions

14.1. Conclusions of the research

The research findings taught me an important lesson from the professional point of view. I wonder whether accounting professionals are conscious of the findings presented in this dissertation? If they are, why have no in-depth researches been conducted in this field? And most of all: why have there been no initiatives to resolve the contradictions between theory and practice?

Nobody would likely dispute that the key driver of technological advancement in the 20th century was an overpowering need to innovate and obtain new knowledge and information. Although we are still in the early 2010s, it is safe to say that the same will be true, even more so, in the 21st century. Power and wealth are no longer connected only to the ownership of physical assets. This is as true for businesses as for state authority, foreign policy or the private realm. The factor by which performance is measured, both at a macroeconomic level and in business operation, is *growth*. Certain companies even aim at growth at times of recession when, given certain circumstances, standing firm is a great success. But growth - winning over new clients and customers - comes at a price. In this ongoing struggle, sometimes with ourselves, the ability for renewal is crucial. Renewal is possible through creating new, revolutionary technologies, or through pursuing a successful campaign to convince customers that the new product will improve their lives. Whatever the outcome, both solutions are of *economic value*. What is the secret behind Prezi's success? Why do millions of people feel more "valuable" if they own an iPhone? And what's in it for Prezi.com or Apple?

The innovations that advance the world can be called the results of pure genius, ingenuity or blind luck, but one thing is common to all: they are based on human creativity and knowledge - in short, intellectual capital. In the economy, the diversity of intellectual capital manifests itself in the same way at a multinational enterprise as in a small, local accountancy office. (What would the owner of the accountancy office answer if asked whether the consumer base built up throughout the years

represents a value for him?) Therefore, businesses rely on intellectual capital in their operation, and corporate strategy. This reliance is not exclusive, but it undoubtedly plays a role.

The economic footprints of business operation are manifold: in the market, these footprints are most evident in the products and services created, in accounting, in the financial statements. Much research has been done and many papers have been written on the purpose, role, and usefulness of financial statements. Two issues seem to be especially relevant here. On the one hand, *financial statements reflect the past*, i.e. they present completed events, figures, and data in a systematic way. On the other, their stated aim is to give a *true and fair view* of a company's operation. This means that accounting regulations make a distinction between the investors' and the owners' perspective, and side with the latter. The dominant emphasis on the principle of prudence ensures the reliability of the data shown in the financial statements. However, it may not be the case under all circumstances that the picture presented is also true. In my view, the principle of truth is violated the most conspicuously in the case of intangible assets, as truth is sacrificed at the altar of reliability. If one accepts the notion that the operation of businesses in the 21st century relies to a large extent on intellectual capital, the following question may justifiably arise: *to what extent can financial statements serve as a basis for important business decisions, and how trustworthy are they if they only show a fraction of this intellectual capital?*

The hypotheses outlined in the theoretical section are mostly supported by the empirical findings. The research was not only based on the available financial data, but also on the experience and opinions of professionals. The conclusions to the dissertation are summarised below. (The conclusions are based on the available information and, therefore, do not provide a comprehensive rendering of the facts.) It is a fact that the vast majority of domestic financial statements do not account for the intellectual capital elements that form the basis of business operations. Most of the intangible assets recorded are purchased IT-related assets (e.g. software) of lesser value, which are essential to the operation of modern businesses. It may be concluded that *intellectual capital elements are not only rare in Hungarian accounting records, but are also rather homogeneous in terms of their composition.*

It can be observed that *the majority of Hungarian companies does not even consider it important to do something with their intellectual capital.* If, however, they were suddenly deprived of all the company knowledge and experience, the confidential relationship with the customers and the well-known brand, accumulated through the years – that would surely be painful. They would surely feel that all those things were actually valuable. However, long-term strategies can only be based on known data that can be measured in certain dimensions (not necessarily by numbers). The findings of the research show that the majority of Hungarian economic entities not only do not deal with identifying the key elements of their intellectual capital, which may create a competitive advantage in the future, but also *do not regularly review the value of the intangible assets identified and stated in their financial statements.*

It necessarily follows from the above that *the notes to domestic financial statements, at best, contain only disclosures that are required by law.* However, the primary function of the notes to the financial statements is to present all numerical data and narrative explanations that are necessary for giving "a true and fair view of the company's net assets and financial position and results of operations for the owners, investors, and creditors"[51]. The empirical research revealed that business leaders do not consider it important to disclose information beyond the statutory minimum, and even the accounting professionals who responded to the questionnaire think that it is not worth disclosing additional information about intangible assets. It also became clear that, *apart from the accounting procedures required by law, no additional analysis and valuation is made regarding the intangible assets, therefore no additional information is available.*

The above considerations are closely linked to the current trend of *depreciation of the role of financial statements*. It partly follows from the Hungarian company structure that the management (who are often also the owners) perceive bookkeeping and preparing the financial statement as an administrative burden. Tax considerations are a dominant factor in the operation of companies, i.e. the goal is to pay the least taxes, while minimizing the probability of adverse consequences. Compared to this, what difference does it make, if the company's financial statements do not give a true

[51] Article 88 (1) of the Accounting Act.

and fair view? This trend is reinforced by top-down control, when policy packages are aimed at reducing operational burden on companies, thereby *referring to the obligation to prepare financial statements and the audit obligation as administrative burdens.* The accounting standards are also moving towards simplification, but the regulators should keep in mind that *simpler standards do not necessarily mean lower standards.* For example, since Notes are not a required part of the special financial statement for micro-enterprises that is available from this year, this implicitly suggests that disclosing anything but raw numbers would be irrelevant in the case of small firms. At the same time, market players are looking for additional financial and market information and, before major business transactions (such as acquisitions), appoint professionals for the revaluation of the company or business line concerned, although the financial statements, which provide a true and fair view of the business unit, are publicly available. (Or do they?)

In an economic environment in which the practical value of the financial statements is called into question, the disclosure of intangible assets in the financial statements (or in any other form) might seem irrelevant. However, the two are closely related. *Is it not possible that the financial statements cannot satisfy the true and fair view requirement, among other factors because they do not include a number of resources that are essential for business operation and provide real economic value to the economic entity?* This is obviously because these intellectual capital elements are often "invisible"[52], and difficult to describe or define. Even if the economic entities manage to do this, they will have difficulty establishing the value of intangible assets that are created organically by the business. Also, in the case of technical, organisational and market innovations, the certainty of future returns is another issue. This is because the purpose of innovation is to create a new combination, and something that has not been tested in the past is necessarily uncertain. These questions are truly difficult and pose a professional challenge. But then, why do we accept that these assets are completely ignored in market communication? It is necessary to find solutions that would ensure that the financial statements show

[52]Although this concept is widely used in academic publications, I do not agree with it: I consider that a conscious company should take care to make these resources visible, and their eventual failure to do so is rather deplorable.

relevant and useful business information reflecting the actual market situation of the company.

14.2. Further suggestions and proposals for the improvement of the Hungarian regulations

Based on the above, I believe it is essential to rethink the role of financial statements. This has already happened in Hungarian academic research[53], but less so on the level of accounting regulations and the accounting profession. As further research, it would be useful to *map out the solutions that allow the financial statements to provide a view that is indeed true and fair. This revised structure could probably also include the so-far-overlooked intellectual capital elements in some form, since they are integral to the concept of a true and fair view.*

It would be useful to explore the reasons *why the majority of Hungarian companies do not really understand the notion of intellectual capital or its strategic and operative role within the company*, which necessarily implies the lack of conscious intellectual capital management. The identification of causes and, as a result, making domestic companies more aware in this field could contribute to sustainable corporate governance and enhancing competitiveness both in domestic and international markets.

I consider it necessary to *eliminate the accounting framework's shortcomings regarding the presentation and measurement of intangible assets.* It is possible that, under the revised structure of financial statements, the balance sheet will still not include intangible assets, because they are considered too uncertain and too risky and therefore do not meet the requirement of reliability. However, this does not of mean that we should give up on the presentation of these assets altogether. We need to find the right place and form that could accommodate these assets that fail to meet the strict balance sheet requirements, but are essential for business operation. I believe that only such a complex accounting framework could ensure a really true and fair view.

[53]See: Lakatos (2009).

Recognising intangible assets could be developed in three possible forms.

First, we need to *make a list of intellectual capital elements that meet the balance sheet requirements* in effect (and their recognition as assets is otherwise mandatory), but because of other considerations – typically to lower the tax expense of the business – are recognised as expenses for the current year. This requires awareness from the accounting and auditing professionals.

The other proposal concerns the improvement of the current accounting system. According to the accounting regulations in effect, contingent liabilities, commitments and receivables originating from contracts that are outstanding at the balance sheet date and whose inclusion in the balance sheet depends on a subsequent event or the fulfilment of the contract must be stated as off-balance sheet items[54]. Since these items do not meet all the balance sheet requirements, they are not included in the balance sheet, but are maintained in separate accounting records. Also, the publicly available notes to the financial statement should include the nature and financial implications of the off-balance sheet items with significant risks or benefits that must be presented to give a true and fair view of the company's financial position[55]. So, currently, off-balance sheet items cannot be recognised in the balance sheet, but, since the accounting regulator finds them relevant from the perspective of the company's market perception, they believe that it is necessary to maintain separate accounting records and narrative explanations of these items in the notes to the financial statements. The question arises as to why the accounting regulations do not take into account intangible assets that similarly do not fully meet the balance sheet requirements in effect, but whose role in a company's operations is just as important as the role of the above claims and liabilities (if not more important). Therefore, I believe it would be a good solution, if intangible assets that were identified (as part of the companies' intellectual capital management efforts), *but, at present, cannot be recognised in the balance sheet, would be recognised as off-balance-sheet items in separate accounting records.* As a result, the company's intellectual capital elements could be monitored, their development and use could become more conscious, and it could be reviewed from year to year, which off-balance-sheet items have in the

[54]Article 3 (8) 16) of the Accounting Act.
[55]Article 90 (3) c) of the Accounting Act.

meantime been recognised in the balance sheets (e.g. due to more certain future returns).

To make the information shown by the complete financial statements more relevant, *the narrative data complementing the numerical data should include a description of the company's intellectual capital*. The regulations currently in force only prescribe the numerical valuation of intangible assets in the balance sheet. This could be complemented with the presentation of intangible assets recognised as off-balance-sheet items and the description of intellectual capital elements that are not measured in monetary terms. These are the relevant information that determine the company's value and market position, but fall outside the current accounting framework. This additional disclosure could ensure that the parts of the financial statements provide a complex and truthful view of the company's value and operations.

However, the implementation of these three proposals requires the fulfilment of several conditions. First of all, Hungarian business leaders must realise that, in the markets already under pressure from the current economic recession, and in the fierce competition for customers, the capacity for self-renewal and the related conscious organisational development are becoming increasingly important. In the current economic framework, knowledge and intellectual capital may have a critical impact on a company's success and competitive edge. If business leaders realise this, there will be a need for simple-to-use and accessible models that allow the identification and management of intellectual capital elements. These models only provide a framework that must be filled in by the companies during their operations. A model that would allow the effective management of intellectual capital elements could be developed at the formal regulatory level or by certain professional forums. A practical model that helps the identification and (financial or non-financial) valuation of intellectual capital elements could also serve as the basis for the accounting-based valuation of these assets. In this way, the intellectual capital management model would be linked to the financial reporting system for intangible assets. The development and use of such a model is not a fictional example – it has a long tradition e.g. in Scandinavian countries.

These issues pose a great challenge for CEOs, accounting regulators and the accounting profession. However, sooner or later, the accounting systems must adapt to the changed economic circumstances – the question is how quickly and how efficiently will this take place.

Annex 1 – The relevant part of Form-1129 (corporate tax return)

0G0001B

1129-03-02

Az adózás előtti eredményt csökkentő jogcímek a kettős könyvvitelt vezető adózók részére

Adószám

001A

Adózó neve 002A

0G0001C

Az adózás előtti eredményt csökkentő jogcímek (folytatás)	a)	b) Az adatok ezer forintra kerekítve	c)
20. A kapott jogdíj bevételként elszámolt összegének a fele, de legfeljebb az adózás előtti eredmény 50 százaléka [Tao. tv. 7. § (1) s); 7. § (14); 4. § 20.]			0020CA TAE070 ezer
21. Az alapkutatás, az alkalmazott kutatás és a kísérleti fejlesztés adóévben felmerült közvetlen költségeként elszámolt, a kapott támogatással az előírt feltételek szerint csökkentett összege [Tao. tv. 7. § (1) t); 7. § (17), (18), 29/G. § (2)]			0021CA 034 ezer
22. Műemlék értékét növelő felújítás költsége [Tao. tv. 7. § (1) ty)]		0022BA TAE110 ezer	0022CA 098 ezer
23. Az adóellenőrzés, önellenőrzés során megállapított adóévi bevételként, vagy aktivált saját teljesítmény növeléseként, vagy adóévi költség, ráfordítás csökkenéseként elszámolt összeg [Tao. tv. 7. § (1) u)]		0023BA TAE111 ezer	0023CA 042 ezer
24. Legalább 50 százalékban megváltozott munkaképességű munkavállaló foglalkoztatása esetén személyenként, havonta a megváltozott munkaképességű részére kifizetett munkabér, de legfeljebb az adóév első napján érvényes minimálbér, ha az adózó által foglalkoztatottak átlagos állományi létszáma nem haladja meg a 20 főt [Tao. tv. 7. § (1) v)]			0024CA 043 ezer
25. Az adózó által átruházott részesedésre elszámolt árfolyamnyereség [Tao. tv. 29/I. § (4)]			0025CA 071 ezer
26. Az adóév első napján mikrovállalkozásnak minősülő adózónál a foglalkoztatottak átlagos állományi létszámnövekmény és az adóév első napján érvényes havi minimálbér adóévre számított összegének szorzata, tekintettel a meghatározott feltételekre [Tao. tv. 7. § (1) y; 7.§ (19), (20)]			0026CA 081 ezer
27. Támogatás, tartós adomány meghatározott összege [Tao. tv. 7. § (1) z); (7); 29/C. § (7)] 0027AA TAE046 ezer			0027CA 044 ezer
28. Az adóév utolsó napján a vonatkozó jogszabály alapján kis- és középvállalkozásnak minősülő adózónál meghatározott új eszközök üzembe helyezése érdekében elszámolt adóévi beruházások értéke, továbbá az ingatlanok értéknövelő felújítási értéke, valamint az új szellemi termék bekerülési értéke figyelemmel a tulajdonosi összetételre, és az értékhatárra [Tao. tv. 7. § (1) zs); (11)-(12); 4. § 18., 34/a)]			0028CA 055 ezer
29. A külföldi pénzértékben fennálló egyes követelések és kötelezettségek értékelésekor megállapított, nyereséget eredményező, nem realizált árfolyamkülönbözet az adózó döntése szerint [Tao.tv.7.§(1)dzs); (2)]		0029BA TAE112 ezer	0029CA 076 ezer
30. Kapcsolt vállalkozások között a szokásos piaci ár és az alkalmazott ellenérték különbségének megfelelő összeg - más, az adózás előtti eredményt módosító jogcímektől függetlenül - az előírt feltételek fennállása esetén [Tao. tv. 18. § (1) a); 4. § 23.]		0030BA TAE113 ezer	0030CA 036 ezer
31. Közhasznú szervezetnek minősülő alapítvány, közalapítvány, egyesület, köztestület, felsőoktatási intézmény az európai területi együttműködési csoportosulás vállalkozási tevékenysége adózás előtti nyereségének 20 százaléka [Tao. tv. 9. § (2) b)]			0031CA 062 ezer
32. Munkáltatói és munkavállalói érdekképviseleti szervezet vállalkozási nyereségének az a része, melyet a cél szerinti tevékenység bevételeit meghaladó költségei, ráfordításai fedezetére felhasznált az adóévben, illetve az a) rovatban továbbvitt rész [Tao. tv. 9. § (2) e); 4. § 25.] 0032AA TAE057 ezer			0032CA TAE085 ezer
33. Az egyház, egyház jogi személyiséggel felruházott szervezeti egysége vállalkozási tevékenységéből elért nyereségének az adóévben meghatározott költségek, ráfordítások fedezetére felhasznált, illetve az a) rovatban a továbbvitt része [Tao. tv. 9. § (5), (9) c)] 0033AA TAE056 ezer			0033CA TAE039 ezer
34. A külföldi vállalkozó belföldi telephelyére arányosan jutó üzletvezetési és általános ügyviteli költségei, ráfordításai [Tao. tv. 14. § (2) a)]			0034CA TAE061 ezer
35. Jogelődnek kiválás esetén a jogutódnál első adóévében a nem kedvezményezett átalakuláskor, és kedvezményezett átalakulásnál az adózó választása szerint a Tao. tv. 16. § (2) bek. d) pontja szerinti összeg		0035BA TAE114 ezer	0035CA 077 ezer
36. A jogutódnál kedvezményezett átalakulás miatt fennálló Tao. tv. 16. § (11) bek. szerinti csökkentő tétel összege		0036BA 115 ezer	0036CA 078 ezer
37. Kedvezményezett eszközátruházás esetén az átruházó társaságnál - választása szerint - e jogügylet alapján elszámolt bevételnek az átadott eszközök együttes könyv szerinti értékét meghaladó része [Tao. tv. 16. § (12)]		0037BA 116 ezer	0037CA 072 ezer
38. Kedvezményezett eszközátruházáshoz kapcsolódó tétel az átvevő társaságnál [Tao. tv. 16. § (13)-(14)]		0038BA 117 ezer	0038CA 089 ezer
39. Egyéb csökkentő jogcímek [Az a) rovatban a c) roval összegéből kiemelve a Tao. tv. 29/D. § (9) szerinti, vállalkozási övezetben üzembe helyezett épület, építmény bekerülési értékének adóévi 10 százaléka] 0039AA TAE073 ezer		0039BA 118 ezer	0039CA 019 ezer
40. Összesen [01- 39. sorok; egyezően a 1129-01-01. lap 03. sor b) és/vagy c) rovatával]		0040BA TAE119 ezer	0040CA TAE020 ezer

TAE093, TAE094

Nyomtatványtervező

6.3.12

0Q0001B

1129-07-01

Az eredménykimutatáshoz kapcsolódó adatok a kettős könyvvitelt vezető adózók részére

(Az MRP, illetve nonprofit szervezetnek nem kell kitöltenie)

Adószám 001A ☐☐☐☐☐☐-☐-☐☐ Adózó neve 002A

0Q0001C

Az eredménykimutatáshoz kapcsolódó adatok — Az adatok ezer forintra kerekítve

	a)		b)	c)
01.	Értékesítés nettó árbevétele (Biztosítónál biztosítástechnikai bevétel, befektetési szolgáltatónál a befektetési szolgáltatási tevékenység bevételei, hitelintézetnél a pénzügyi szolgáltatás és a befektetési szolgáltatási tevékenység bevételei) ARBEVOP 0001AA	01.		0001CA TAC002 ezer
02.	A 01. sorból: - exportértékesítés nettó árbevétele	02.	0002BA TAC003 ezer	
03.	Aktivált saját teljesítmények értéke (+/-)	03.	±	0003CA TAC006 ezer
04.	Egyéb bevételek összesen	04.		0004CA TAC005 ezer
05.	A 4. sorból: - a költségek (a ráfordítások) ellentételezésére illetve fejlesztésére - visszafizetési kötelezettség nélkül - kapott támogatás, juttatás összege	05.	0005BA TAC062 ezer	
06.	Anyagjellegű ráfordítások összesen [(07.+08.+09.+10.+11.) sorok]	06.		0006CA TAC007 ezer
07.	A 06. sorból: - anyagköltség	07.	0007BA TAC008 ezer	
08.	- igénybe vett szolgáltatások értéke	08.	0008BA 009 ezer	
09.	- eladott (közvetített) szolgáltatások értéke	09.	0009BA 011 ezer	
10.	- eladott áruk beszerzési értéke	10.	0010BA 010 ezer	
11.	- egyéb szolgáltatások értéke	11.	0011BA TAC078 ezer	
12.	A 11. sorból: - bankköltség	12.	0012BA TAH014 ezer	
13.	- biztosítási díj	13.	0013BA TAH015 ezer	
14.	Személyi jellegű ráfordítások összesen [(15.+16.+17). sorok]	14.		0014CA TAC012 ezer
15.	A 14. sorból: - bérköltség	15.	0015BA TAC013 ezer	
16.	- személyi jellegű egyéb kifizetések	16.	0016BA 014 ezer	
17.	- bérjárulékok	17.	0017BA TAC015 ezer	
18.	Értékcsökkenési leírás	18.		0018CA TAC016 ezer
19.	Egyéb ráfordítások összesen	19.		0019CA TAC018 ezer
20.	A 19. sorból: - a költségek (a ráfordítások) ellentételezésére visszafizetési kötelezettség nélkül adott támogatás, juttatás összege	20.	0020BA TAC063 ezer	
21.	- adók, illetékek, hozzájárulások bevallott, fizetendő összege (a társasági és különadó nélküli összeg)	21.	0021BA TAH021 ezer	
22.	- követelések elszámolt értékvesztésének összege	22.	0022BA TAC109 ezer	
23.	- a külföldön, külföldi telephelyen fizetett, fizetendő nyereségadó összege	23.	0023BA 080 ezer	
24.	- pénzügyi szervezetek különadó összege	24.	0024BA TAC190 ezer	
25.	Befektetési szolgáltatási tevékenység ráfordításai	25.		0025CA TAC059 ezer
26.	Üzemi (üzleti) tevékenység eredménye [01.±03.+04.-06.-14.-18.-19.-25. sorok] (+/-)	26.	TAC020(+) TAC021(-) ±	0026CA TAC019 ezer

Számítások

1. lap

TAC053 = TAC018 + TAC059 (Egyéb bevételek ráford. összesen)

TAC073 = TAC007 + TAC012 + TAC016 + TAC018 + TAC059 (összes szöveges ráford. üzemi tev. ü.

TAC064 = TAH026 + TAH027 (Kamat, ennek jellegű ráford.)

2. lap

TAH046 = TAH001 + TAH012 + TAH048 + TAH060 + TAH178 + TAH183 + TAH187 + TAH208 (Saját tőke)

TAH082 = TAH041 + TAH043 + TAH044 + TAH088 (Forgóeszközök)

TAH200 = TAH033 + TAH087 + TAH116 (Befektetett eszk.)

Nyomtatványtervező **6.3.12**

0V0001B

1129-A-01

A mérleghez kapcsolódó adatok a kettős könyvvitelt vezető adózók részére

(Az MRP, illetve a nonprofit szervezetnek nem kell kitöltenie.)

Adószám 001A ☐☐☐☐☐☐-☐-☐☐ Adózó neve 002A

0V0001C

A mérleghez kapcsolódó adatok

		Az adatok ezer forintra kerekítve a)	b)
01. Immateriális javak	01.		0001BA TAH186 ezer
02. A 01. sorból: kísérleti fejlesztés aktivált értéke	02.	0002AA TAH230 ezer	
03. Tárgyi eszközök	03.		0003BA TAH033 ezer
04. Befektetett pénzügyi eszközök	04.		0004BA 087 ezer
05. Készletek	05.		0005BA 088 ezer
06. Követelések könyv szerinti értéke	06.		0006BA TAH041 ezer
07. A 06. sorból: - követelések áruszállításból és szolgáltatásból (vevők)	07.	0007AA TAH042 ezer	
08. - követelések nyilvántartott értékvesztése	08.	0008AA TAH231 ezer	
09. Értékpapírok (forgóeszközök része)	09.		0009BA TAH043 ezer
10. Pénzeszközök	10.		0010BA TAH044 ezer
11. A 10. sorból a pénztár	11.	0011AA TAH232 ezer	
12. Aktív időbeli elhatárolások	12.		0012BA TAH045 ezer
13. Jegyzett tőke összege [14-21. sorok adatai]	13.		0013BA TAH001 ezer
14. A 13. sorból: - állami tulajdon	14.	0014AA TAH002 ezer	
15. - önkormányzati tulajdon	15.	0015AA 003 ezer	
16. - belföldi magánszemély tulajdona	16.	0016AA 004 ezer	
17. - belföldi egyéb társaság, gazdálkodó szervezet tulajdona	17.	0017AA 005 ezer	
18. - belföldi hitelintézeti tulajdon	18.	0018AA 011 ezer	
19. - külföldi tulajdon	19.	0019AA 007 ezer	
20. - belföldi egyéb pénzügyi szervezet (társaság, pénztár, alap) tulajdona	20.	0020AA 1233 ezer	
21. - belföldi nonprofit szervezet tulajdona	21.	0021AA TAH234 ezer	
22. Jegyzett, de még be nem fizetett tőke	22.	-	0022BA TAH012 ezer
23. Tőketartalék	23.		0023BA 048 ezer
24. Eredménytartalék (+/-)	24.	±	0024BA 189 ezer
25. Lekötött tartalék	25.		0025BA 208 ezer
26. Értékelési tartalék	26.		0026BA 060 ezer
27. Általános tartalék	27.		0027BA 179 ezer
28. Mérleg szerinti eredmény (+/-)	28.	TAH193(3) TAH194(3) ±	0028BA 187 ezer
29. Céltartalékok	29.		0029BA 059 ezer
30. Hátrasorolt kötelezettségek	30.		0030BA 1209 ezer
31. Hosszú lejáratú kötelezettségek	31.		0031BA TAH051 ezer
32. A 31. sorból: - beruházási és fejlesztési hitelek	32.	0032AA TAH052 ezer	
33. - tulajdonos(ok) által nyújtott hosszú lejáratú kölcsönök	33.	0033AA TAH227 ezer	
34. Rövid lejáratú kötelezettségek	34.		0034BA TAH054 ezer
35. A 34. sorból: - kötelezettségek áruszállításból és szolgáltatásból (szállítók)	35.	0035AA TAH055 ezer	
36. - tulajdonosokkal szembeni kötelezettségek	36.	0036AA 1180 ezer	
37. - egyéb kapott hitelek, kölcsönök összege	37.	0037AA TAH199 ezer	
38. Passzív időbeli elhatárolások	38.		0038BA TAH058 ezer
39. Mérlegfőösszeg [(01.+03.+04.+05.+06.+09.+10.+12.)= (13.-22.+23.±24.+25.+26.+27.±28.+29.+30.+31.+34.+38.)]	39.		0039BA TAH061 ezer

Nyomtatványtervező **6.3.12**

0W0001B

1129-A-02-01

Egyéb, valamint tájékoztató adatok a kettős könyvvitelt vezető adózók részére

Adószám
001A ☐☐☐☐☐☐-☐-☐☐ Adózó neve 002A

0W0001C

A) Eszközök (értékhelyesbítés nélkül)

Az adatok ezer forintra kerekítve

		Bekerülési érték a mérlegforduló napon a)	Nettó érték a mérlegforduló napon b)
01. Immateriális javak	01.	0001AA TAI001 ezer	0001BA TAI002 ezer
02. Ingatlanok és a kapcsolódó vagyoni értékű jogok	02.	0002AA 019 ezer	0002BA 020 ezer
03. Műszaki berendezések, gépek, járművek	03.	0003AA 022 ezer	0003BA 023 ezer
04. Egyéb berendezések, felszerelések, járművek	04.	0004AA 041 ezer	0004BA 042 ezer
05. Tenyészállatok	05.	0005AA 043 ezer	0005BA TAI044 ezer
06. Beruházások, felújítások	06.	0006AA TAI033 ezer	0006BA TAH034 ezer

0W0001D

B) Eszközök értékcsökkenése, értékcsökkenési leírása

Az adatok ezer forintra kerekítve

		Költségként elszámolt (módosított) terv szerinti értékcsökkenés a)	Egyéb ráfordításként elszámolt terven felüli értékcsökkenés b)	Tao. tv. 1. és 2. sz. melléklete szerinti értékcsökkenési leírás c)
07. Immateriális javak	07.	0007AA TAI045 ezer	0007BA TAI046 ezer	0007CA TAI035 ezer
08. Ingatlanok és a kapcsolódó vagyoni értékű jogok	08.	0008AA 047 ezer	0008BA 048 ezer	0008CA 036 ezer
09. Műszaki berendezések, gépek, járművek	09.	0009AA 049 ezer	0009BA 050 ezer	0009CA 037 ezer
10. Egyéb berendezések, felszerelések, járművek	10.	0010AA 051 ezer	0010BA 052 ezer	0010CA 053 ezer
11. Tenyészállatok	11.	0011AA 054 ezer	0011BA TAI055 ezer	0011CA TAI056 ezer
12. A 100 000 Ft alatti egyedi beszerzési, előállítási értékű tárgyi eszközök, vagyoni értékű jogok, szellemi termékek bekerülési értékének egyösszegű elszámolása	12.	0012AA TAI057 ezer		0012CA TAH190 ezer
13. Beruházások, felújítások	13.		0013BA TAI038 ezer	0013CA TAI058 ezer

Nyomtatványtervező **6.3.12**

0X0001B

1129-A-02-02

Egyéb, valamint tájékoztató adatok a kettős könyvvitelt vezető adózók részére

(Az MRP, illetve a nonprofit szervezetnek nem kell kitöltenie.)

Adószám 001A ☐☐☐☐☐☐-☐-☐☐ Adózó neve 002A

0X0001C

C) Egyéb adatok

Az adatok ezer forintra kerekítve

			a)	b)
14.	Foglalkoztatottak átlagos állományi létszáma	14.	0014AA TAH082 fő	0014BA TAH183 fő
15.	A 14. sor b) rovatából: - a megváltozott munkaképességű dolgozók számított létszáma	15.	0015AA TAH109 fő	
16.	Használatban lévő összes termőterület	16.		0016BA TAH195 hektár
17.	A 16. sorból: - a földbérleti díj alapjául szolgáló bérbe vett terület	17.	0017AA TAH196 hektár	
18.	Földbérleti díj	18.		0018BA TAH016 ezer
19.	Eredménytartalék igénybevétele osztalékra, részesedésre	19.		0019BA TAB021 ezer
20.	A 2011. évre (illetve adóévre) jóváhagyott osztalék, részesedés	20.		0020BA 024 ezer
21.	Hitelintézeti általános tartalék képzése (-), felhasználása (+)	21.	TAB064(+) TAB065(-) ±	0021BA TAB063 ezer
22.	A tárgyévben üzembe helyezett beruházások aktivált értéke	22.		0022BA TAH197 ezer
23.	A tárgyévi beruházási érték	23.		0023BA 222 ezer
24.	A 2010. évi (illetve az adóévet megelőző adóévi) - éves szinten megállapított - a Tao. tv. 4. § 4. pontja szerinti árbevétel összege (+/-)	24.	±	0024BA 219 ezer
25.	A 2011. évi (illetve adóévi) - éves szinten számított, a Tao. tv. 4. § 4. pontja szerinti árbevétel összege (+/-)	25.	±	0025BA 226 ezer
26.	Az Európai Uniótól és/vagy költségvetésből származó támogatásból az adóév utolsó hónapjának 15. napjáig meg nem kapott összeg	26.		0026BA TAH229 ezer

0X0001D

D) Tájékoztató adatok a 2011. adóévi osztalék (osztalékelőleg) kifizetéséről, juttatásokról

Az adatok ezer forintra kerekítve

			A 2011. adóévben fizetett osztalék-előleg összege a)	A 2011. adóévben kifizetett osztalék összege b)
27.	Belföldi magánszemély tulajdonos(ok)	27.	0027AA TAD014 ezer	0027BA TAD015 ezer
28.	Külföldi magánszemély tulajdonos(ok)	28.	0028AA 016 ezer	0028BA 017 ezer
29.	Belföldi jogi személy, nem jogi személyiségű társaság(ok)	29.	0029AA V018 ezer	0029BA V019 ezer
30.	Külföldi jogi és nem jogi személyiségű társaság(ok)	30.	0030AA TAD021 ezer	0030BA TAD022 ezer

Nyomtatványtervező **6.3.12**

Annex 2 – Listed companies in the research on the Budapest Stock Exchange in 2011

1	ALTEO Energiaszolgáltató Nyrt.
2	ANY Biztonsági Nyomda Nyrt.
3	Appeninn Vagyonkezelő Holding Nyrt.
4	BIOMEDICAL COMPUTER TECHNOLOGIES Nyrt.
5	Budapesti Elektromos Művek Nyrt.
6	Budapesti Ingatlan Hasznosítási és Fejlesztési Nyrt.
7	CIG Pannónia Életbiztosító Nyrt.
8	Csepel Holding Nyrt.
9	Danubius Hotels Nyrt.
10	EGIS Gyógyszergyár Nyrt.
11	Első Hazai Energia-Portfolió Nyrt.
12	EST MEDIA Vagyonkezelő Nyrt.
13	E-Star Alternatív Energiaszolgáltató Nyrt.
14	Észak-magyarországi Áramszolgáltató Nyrt.
15	EXTERNET Telekommunikációs és Internet Szolgáltató Nyrt.
16	FHB Jelzálogbank Nyrt.
17	Finext Vagyonkezelő Nyrt.
18	FORRÁS Vagyonkezelési és Befektetési Nytt.
19	FreeSoft Szoftverfejlesztő és Számítástechnikai Szolgáltató Nyrt.
20	FUSO Ecosystem Nyrt.
21	FuturAqua Ásványvíztermelő és Vagyonkezelő Nyrt.
22	GrEnergie Corporation Nyrt.
23	HUN MINING Érc- és Ásványfeldolgozó Befektetési Nyrt.
24	KARTONPACK Dobozipari Nyrt.
25	KEG Közép-európai Gázterminál Nyrt.
26	KONZUM Kereskedelmi és Ipari Nyrt.
27	Kulcs-Soft Számítástechnika Nyrt.
28	LINAMAR Hungary Nyrt.
29	Magyar Telekom Távközlési Nyrt.
30	MASTERPLAST Nyrt.
31	MOL Magyar Olaj és Gázipari Nyrt.

32	NORDTELEKOM Távközlési Szolgáltató Nyrt.
33	NUTEX Befektetési Nyrt.
34	OPIMUS GROUP Nyrt.
35	OPTISOFT Számítástechnikai, Pénztárszolgáltató, Könyvelő és Oktató Nyrt.
36	OTP Bank Nyrt.
37	Őrmester Vagyonvédelmi Nyrt.
38	PannErgy Nyrt.
39	PANNON-FLAX Győri Lenszövő NyRt.
40	PANNON-VÁLTÓ Ingatlanbefektetési és Vagyonkezelő Nyrt.
41	Pannunion Csomagolóanyag Nyrt.
42	PLOTINUS Vagyonkezelő Nyrt.
43	QUAESTOR Értékpapírkeresedelmi és Befektetési Értékpapír Nyrt.
44	RÁBA Járműipari Holding Nyrt.
45	Richter Gedeon Vegyészeti Gyár Nyrt.
46	Shopline-webáruház Internetes Kereskedelmi Nyrt.
47	Synergon Informatikai Rendszereket Tervező és Kivitelező Nyrt.
48	Székesfehérvári Hűtőipari Nyrt.
49	TC Befektetési Nyrt.
50	Tiszai Vegyi Kombinát Nyrt.
51	TvNetWork Telekommunikációs Szolgáltató Nyrt.
52	VISONKA Takarmánykeverő Szolgáltató és Kereskedelmi Nyrt.
53	Zwack Unicum Likőripari és Kereskedelmi Nyrt.

Annex 3 – Survey

1. **How frequently were intangible assets included in the balance sheets of the financial statements drawn up by you in accordance with the Accounting Act?**
   (1: They did not occur in any financial statements; 6: They occurred in every financial statement)

Assertion	Score
Capitalised value of formation / reorganization expenses	1 2 3 4 5 6
Capitalised value of experimental development	1 2 3 4 5 6
Intellectual products	1 2 3 4 5 6
Concessions, licenses and similar rights	1 2 3 4 5 6
Goodwill	1 2 3 4 5 6

2. **Assign a score to the assertion below.**
   (1: It does not apply to any of my customers; 6: It applies to all of my customers)

Assertion	Score
Costs related to intangible assets are typically reported as expenses, to the debit of the income, and are not capitalised.	1 2 3 4 5 6

3. **What was the reason for the eventual FAILURE TO CAPITALISE intangible costs and assets?**
   (1: This was not the reason in any of the cases; 6: This was the reason in all cases)

Assertion	Score
The intangible assets were difficult to delimit from the other asset elements of the company and/or from continuous business operation.	1 2 3 4 5 6
It was difficult to determine when the intangible assets came into being and became identifiable as an asset.	1 2 3 4 5 6
The company was unable to exercise control over the intangible assets.	1 2 3 4 5 6
The future economic benefit arising from the intangible assets was uncertain.	1 2 3 4 5 6
It was impossible to reliably determine the cost or production value of the intangible asset.	1 2 3 4 5 6
The role of intangible assets in the entity's operation was negligible, therefore the issue of capitalisation was considered irrelevant.	1 2 3 4 5 6
No (known) reason.	1 2 3 4 5 6
Other:	1 2 3 4 5 6

4. **What was the ratio of internally developed intangible assets within all capitalised intangible assets?**
(1: Practically no internally developed intangibles; 6: Exclusively internally developed intangibles; N: No such assets included)

Assertion	Score
Capitalised value of formation / reorganization expenses	1 2 3 4 5 6 N
Capitalised value of experimental development	1 2 3 4 5 6 N
Intellectual products	1 2 3 4 5 6 N
Concessions, licenses and similar rights	1 2 3 4 5 6 N

5. **How frequently were intangible assets included in the financial statements of entities belonging to the following categories based on their TURNOVER?**
(1: They did not occur in any financial statements; 6: They occurred in every financial statement; N: No such clients)

Assertion	Score
Entities with turnover under mHUF 200	1 2 3 4 5 6 N
Entities with turnover between mHUF 200-500	1 2 3 4 5 6 N
Entities with turnover between mHUF 500-1000	1 2 3 4 5 6 N
Entities with turnover above mHUF 1000	1 2 3 4 5 6 N

6. **How frequently were intangible assets included in the financial statements of entities belonging to the following categories based on their BALANCE SHEET TOTAL?**
(1: They did not occur in any financial statements; 6: They occurred in every financial statement; N: No such clients)

Assertion	Score
Entities with balance sheet total under mHUF 100	1 2 3 4 5 6 N
Entities with balance sheet total between mHUF 100-500	1 2 3 4 5 6 N
Entities with balance sheet total between mHUF 500-1000	1 2 3 4 5 6 N
Entities with balance sheet total above mHUF 1000	1 2 3 4 5 6 N

7. **How frequently were intangible assets included in the financial statements of entities belonging to the following categories based on the INDUSTRY they operate in?**
(1: They did not occur in any financial statements; 6: They occurred in every financial statement; N: No such clients)

Assertion	Score
Mining and quarrying; Manufacturing	1 2 3 4 5 6 N
Energy	1 2 3 4 5 6 N
Construction	1 2 3 4 5 6 N
Agriculture, hunting and forestry; Fishing	1 2 3 4 5 6 N

Wholesale and retail trade	1 2 3 4 5 6 N
Transport, storage	1 2 3 4 5 6 N
Hotels and restaurants	1 2 3 4 5 6 N
Communication	1 2 3 4 5 6 N
Real estate	1 2 3 4 5 6 N
Insurance; Financial intermediation	1 2 3 4 5 6 N
IT services	1 2 3 4 5 6 N
Manufacture of electrical equipment and computers	1 2 3 4 5 6 N
Pharmaceutical industry	1 2 3 4 5 6 N
Health and social work; Education	1 2 3 4 5 6 N
Consultation services	1 2 3 4 5 6 N
Other	1 2 3 4 5 6

8. How frequently were research and development costs incurred during the operation of entities belonging to the following categories based on the INDUSTRY they operate in?

(1: They did not occur in any financial statements; 6: They occurred in every financial statement; N: No such clients)

Assertion	**Score**
Mining and quarrying; Manufacturing	1 2 3 4 5 6 N
Energy	1 2 3 4 5 6 N
Construction	1 2 3 4 5 6 N
Agriculture, hunting and forestry; Fishing	1 2 3 4 5 6 N
Wholesale and retail trade	1 2 3 4 5 6 N
Transport, storage	1 2 3 4 5 6 N
Hotels and restaurants	1 2 3 4 5 6 N
Communication	1 2 3 4 5 6 N
Real estate	1 2 3 4 5 6 N
Insurance; Financial intermediation	1 2 3 4 5 6 N
IT services	1 2 3 4 5 6 N
Manufacture of electrical equipment and computers	1 2 3 4 5 6 N
Pharmaceutical industry	1 2 3 4 5 6 N
Health and social work; Education	1 2 3 4 5 6 N
Consultation services	1 2 3 4 5 6 N
Other	1 2 3 4 5 6

9. How frequently did the financial statements drawn up by you in accordance with the Accounting Act contain value adjustment?

(1: They did not occur in any financial statements; 6: They occurred in every financial statement; N: No such assets)

Assertion	**Score**
Intellectual products	1 2 3 4 5 6 N
Concessions, licenses and similar rights	1 2 3 4 5 6 N

10. When preparing the financial statements, how often was the market value of intangible assets quantified at the year-end valuation?
(1: Never; 6: Always; N: No such assets included)

Assertion	Score
Capitalised value of formation / reorganization expenses	1 2 3 4 5 6 N
Capitalised value of experimental development	1 2 3 4 5 6 N
Intellectual products	1 2 3 4 5 6 N
Concessions, licenses and similar rights	1 2 3 4 5 6 N

11. Which method was used for the quantification of the market value of intangible assets at the year-end valuation (if performed)?
(1: Not used; 6: Always used)

Assertion	Score
Subcontracting a valuation professional (or company)	1 2 3 4 5 6
Elaboration and use of an internal valuation methodology	1 2 3 4 5 6
Use of data from database	1 2 3 4 5 6
Simple calculation based on readily available market information	1 2 3 4 5 6
Professional support from an auditor	1 2 3 4 5 6
Determination of market value based on the asset replacement value	1 2 3 4 5 6
Determination of market value based on the market price of a similar asset	1 2 3 4 5 6
Determination of market value based on the revenue generated by the asset	1 2 3 4 5 6
Determination of market value based on the combination of the three methods above	1 2 3 4 5 6
Other	1 2 3 4 5 6

12. Assign a score to every assertion below.
(1: Not relevant for my clients … 6: Relevant for all my clients,
N: I have no information)

Assertion	Score
The notes only disclose any information and data concerning intangible assets as stipulated by the legislation.	1 2 3 4 5 6
The company uses some method to manage and measure intellectual capital.	1 2 3 4 5 6 N
The company prepares an analysis/statement of its intellectual capital for external use.	1 2 3 4 5 6 N
The company prepares an analysis/statement of its intellectual capital for internal use.	1 2 3 4 5 6 N
The notes include additional information about intangible assets with the following content: ……	

13. Why did the notes only disclose information and data concerning intangible assets to the extent of the statutory minimum (if applicable)?
(1: This was not the reason in any of the cases; 6: This was the reason in all cases)

Assertion	Score
The company management considered it risky to disclose information exceeding the statutory minimum.	1 2 3 4 5 6
The company management considered it unimportant to disclose information exceeding the statutory minimum.	1 2 3 4 5 6
Based on the cost/benefit principle, it was unjustified to disclose additional information concerning intangible assets.	1 2 3 4 5 6
No additional information is available, because apart from the accounting procedures required by law, the company does not perform additional analysis and valuation regarding the intangible assets.	1 2 3 4 5 6
No (known) reason.	1 2 3 4 5 6
Other	1 2 3 4 5 6

14. How frequently was MANDATORY and VOLUNTARY information concerning intangible assets disclosed in the notes to the financial statements of entities belonging to the following categories based on their TURNOVER?
(1: They did not occur in any financial statements; 6: They occurred in every financial statement; N: No such clients)

Assertion	MANDATORY	VOLUNTARY
Entities with turnover under mHUF 200	1 2 3 4 5 6 N	1 2 3 4 5 6 N
Entities with turnover between mHUF 200-500	1 2 3 4 5 6 N	1 2 3 4 5 6 N
Entities with turnover between mHUF 500-1000	1 2 3 4 5 6 N	1 2 3 4 5 6 N
Entities with turnover above mHUF 1000	1 2 3 4 5 6 N	1 2 3 4 5 6 N

15. How frequently was MANDATORY and VOLUNTARY information concerning intangible assets disclosed in the notes to the financial statements of entities belonging to the following categories based on their BALANCE SHEET TOTAL?

(1: They did not occur in any financial statements; 6: They occurred in every financial statement; N: No such clients)

Assertion	MANDATORY	VOLUNTARY
Entities with balance sheet total under mHUF 100	1 2 3 4 5 6 N	1 2 3 4 5 6 N
Entities with balance sheet total between mHUF 100-500	1 2 3 4 5 6 N	1 2 3 4 5 6 N
Entities with balance sheet total between mHUF 500-1000	1 2 3 4 5 6 N	1 2 3 4 5 6 N
Entities with balance sheet total above mHUF 1000	1 2 3 4 5 6 N	1 2 3 4 5 6 N

16. Assign a score to every assertion below.

(1: I don't agree at all; 6: I entirely agree)

The following assertions relate to additional information concerning intangible assets exceeding the statutory minimum. In my opinion...

Assertion	Score
its disclosure is useful for market players.	1 2 3 4 5 6
its disclosure is risky for the company.	1 2 3 4 5 6
its generation is difficult and costly.	1 2 3 4 5 6
its generation is not important.	1 2 3 4 5 6
its disclosure is not important.	1 2 3 4 5 6

Annex 4 – The statistics of Hypothesis H1

The statistics of Subhypothesis H1/a)

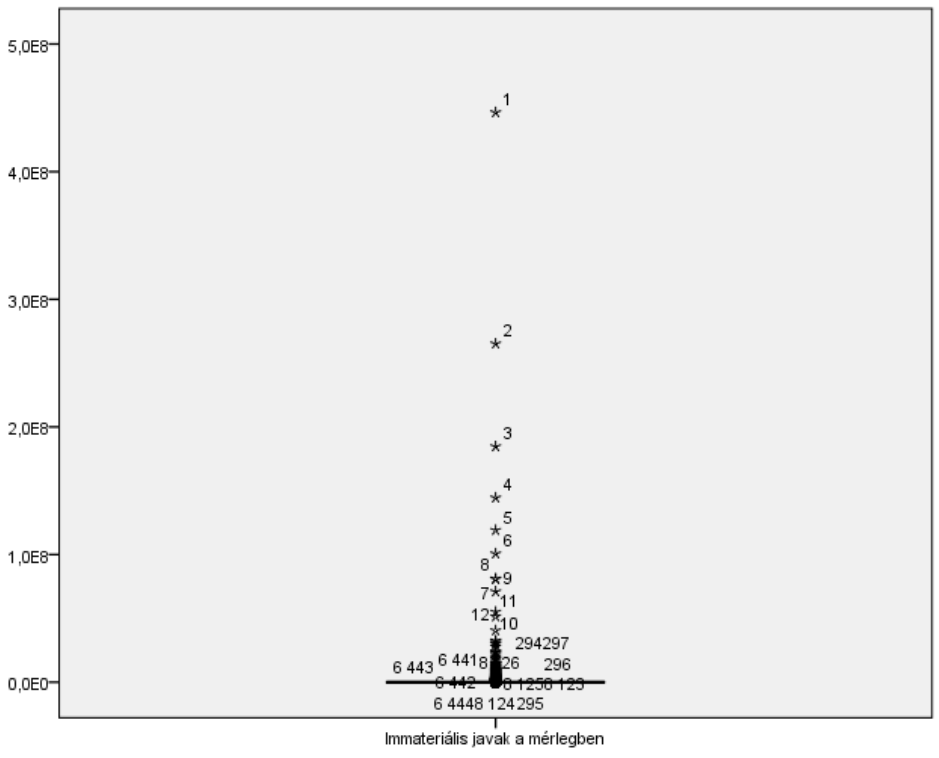
Statistics of AB1 database

Statistics

Intangible assets in balance sheet – before filtering outlier values

N	Valid	48654
	Missing	351749
Mean		63212,94
Median		272,00
Mode		12
Std. Deviation		2820395,358
Range		446402093
Minimum		11
Maximum		446402104
Percentiles	25	73,00
	50	272,00
	75	1811,25

Boxplot diagram on values of intangible assets



Statistics

Intangible assets in balance sheet – after filtering outlier values

N	Valid	48606
	Missing	0
Mean		17727,66
Median		271,00
Mode		12
Std. Deviation		191201,967
Range		8296333
Minimum		11
Maximum		8296344
Percentiles	10	27,00
	20	54,00
	30	95,00
	40	157,00
	50	271,00
	60	512,00
	70	1129,90
	80	3000,00
	90	11148,00

Statistics

Value of intangibles and entire asset value

		IntangBillion	AssetBillion
N	Valid	53709	400403
	Missing	346694	0
Sum		3075,59	157523,15

Statistics

Intangible assets / Balance sheet total ratio after filtering outlier values (%)

N	Valid	48606
	Missing	0
Mean		7,2543
Median		,7226
Percentiles	10	,0376
	20	,1003
	30	,2036
	40	,3828
	50	,7226
	60	1,3878
	70	2,8506
	80	6,8128
	90	21,2684

Statistics of AB3 database

Question 1: How frequently were intangible assets included in the balance sheets of the financial statements drawn up by you in accordance with the Accounting Act?

Capitalised value of formation / reorganization expenses in financial statements

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	70	61,4	69,3	69,3
	2	16	14,0	15,8	85,1
	3	9	7,9	8,9	94,1
	4	2	1,8	2,0	96,0
	6	4	3,5	4,0	100,0
	Total	101	88,6	100,0	
Missing	System	13	11,4		
Total		114	100,0		

Capitalised value of experimental development in financial statements

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	75	65,8	74,3	74,3
	2	19	16,7	18,8	93,1
	3	4	3,5	4,0	97,0
	6	3	2,6	3,0	100,0
	Total	101	88,6	100,0	
Missing	System	13	11,4		
Total		114	100,0		

Intellectual products in financial statements

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	10	8,8	9,1	9,1
	2	12	10,5	10,9	20,0
	3	18	15,8	16,4	36,4
	4	24	21,1	21,8	58,2
	5	17	14,9	15,5	73,6
	6	29	25,4	26,4	100,0
	Total	110	96,5	100,0	
Missing	System	4	3,5		
Total		114	100,0		

Concessions, licenses and similar rights in financial statements

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	11	9,6	10,2	10,2
	2	20	17,5	18,5	28,7
	3	26	22,8	24,1	52,8
	4	12	10,5	11,1	63,9
	5	18	15,8	16,7	80,6
	6	21	18,4	19,4	100,0
	Total	108	94,7	100,0	
Missing	System	6	5,3		
Total		114	100,0		

Goodwill in financial statements

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	59	51,8	58,4	58,4
	2	21	18,4	20,8	79,2
	3	9	7,9	8,9	88,1
	4	6	5,3	5,9	94,1
	5	2	1,8	2,0	96,0
	6	4	3,5	4,0	100,0
	Total	101	88,6	100,0	
Missing	System	13	11,4		
Total		114	100,0		

Friedman test

	Mean Rank	Median
Capitalised value of formation / reorganization expenses	2,15	1,00
Capitalised value of experimental development	2,07	1,00
Intellectual products	4,28	4,00
Concessions, licenses and similar rights	4,09	3,00
Goodwill	2,42	1,00

Test Statistics[a]

N	99
Chi-Square	241,594
df	4
Asymp. Sig.	,000

a. Friedman Test

Question 2: Assign a score to the assertion below. Costs related to intangible assets are typically reported as expenses, to the debit of the income, and are not capitalised.

Capitalisation of intangible assets

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	53	46,5	46,9	46,9
	2	19	16,7	16,8	63,7
	3	18	15,8	15,9	79,6
	4	13	11,4	11,5	91,2
	5	5	4,4	4,4	95,6
	6	5	4,4	4,4	100,0
	Total	113	99,1	100,0	
Missing	System	1	,9		
Total		114	100,0		

Question 3: What was the reason for the eventual failure to capitalise intangible costs and assets?

They were difficult to delimit from the other asset elements of the company and/or from continuous business operation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	45	39,5	67,2	67,2
	2	7	6,1	10,4	77,6
	3	5	4,4	7,5	85,1
	4	5	4,4	7,5	92,5
	5	4	3,5	6,0	98,5
	6	1	,9	1,5	100,0
	Total	67	58,8	100,0	
Missing	System	47	41,2		
Total		114	100,0		

It was difficult to determine when the intangible assets came into being and became identifiable as an asset

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	45	39,5	69,2	69,2
	2	6	5,3	9,2	78,5
	3	6	5,3	9,2	87,7
	4	2	1,8	3,1	90,8
	5	4	3,5	6,2	96,9
	6	2	1,8	3,1	100,0
	Total	65	57,0	100,0	
Missing	System	49	43,0		
Total		114	100,0		

The company was unable to exercise control over the intangible assets

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	47	41,2	70,1	70,1
	2	10	8,8	14,9	85,1
	3	4	3,5	6,0	91,0
	4	3	2,6	4,5	95,5
	5	1	,9	1,5	97,0
	6	2	1,8	3,0	100,0
	Total	67	58,8	100,0	
Missing	System	47	41,2		
Total		114	100,0		

The future economic benefit arising from the intangible assets was uncertain

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	39	34,2	58,2	58,2
	2	3	2,6	4,5	62,7
	3	12	10,5	17,9	80,6
	4	6	5,3	9,0	89,6
	5	5	4,4	7,5	97,0
	6	2	1,8	3,0	100,0
	Total	67	58,8	100,0	
Missing	System	47	41,2		
Total		114	100,0		

It was impossible to reliably determine the cost or production value of the intangible asset

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	40	35,1	58,8	58,8
	2	11	9,6	16,2	75,0
	3	10	8,8	14,7	89,7
	4	4	3,5	5,9	95,6
	5	2	1,8	2,9	98,5
	6	1	,9	1,5	100,0
	Total	68	59,6	100,0	
Missing	System	46	40,4		
Total		114	100,0		

The role of intangible assets in the entity's operation was negligible, therefore the issue of capitalisation was considered irrelevant

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	32	28,1	41,0	41,0
	2	5	4,4	6,4	47,4
	3	6	5,3	7,7	55,1
	4	6	5,3	7,7	62,8
	5	14	12,3	17,9	80,8
	6	15	13,2	19,2	100,0
	Total	78	68,4	100,0	
Missing	System	36	31,6		
Total		114	100,0		

No (known) reason

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	40	35,1	70,2	70,2
	2	5	4,4	8,8	78,9
	3	4	3,5	7,0	86,0
	4	2	1,8	3,5	89,5
	5	2	1,8	3,5	93,0
	6	4	3,5	7,0	100,0
	Total	57	50,0	100,0	
Missing	System	57	50,0		
Total		114	100,0		

Friedman test

	Mean Rank	Median
They were difficult to delimit from the other asset elements of the company and/or from continuous business operation	3,79	1,00
It was difficult to determine when the intangible assets came into being and became identifiable as an asset	3,78	1,00
The company was unable to exercise control over the intangible assets	3,42	1,00
The future economic benefit arising from the intangible assets was uncertain	4,38	1,00
It was impossible to reliably determine the cost or production value of the intangible asset	3,90	1,00
The role of intangible assets in the entity's operation was negligible, therefore the issue of capitalisation was considered irrelevant	4,93	2,00
No (known) reason	3,79	1,00

Test Statistics[a]

N	56
Chi-Square	36,655
df	6
Asymp. Sig.	,000

a. Friedman Test

The statistics of Subhypothesis H1/b)

Statistics of AB3 database

Question 4: What was the ratio of internally developed intangible assets within all capitalised intangible assets?

Internally developed capitalised value of formation / reorganization expenses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	13	41,9	61,9	61,9
	2	4	12,9	19,0	81,0
	3	2	6,5	9,5	90,5
	6	2	6,5	9,5	100,0
	Total	21	67,7	100,0	
	7	9	29,0		
Missing	System	1	3,2		
	Total	10	32,3		
Total		31	100,0		

Internally developed capitalised value of experimental development

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	5	19,2	22,7	22,7
	2	8	30,8	36,4	59,1
	3	2	7,7	9,1	68,2
	4	1	3,8	4,5	72,7
	5	2	7,7	9,1	81,8
	6	4	15,4	18,2	100,0
	Total	22	84,6	100,0	
Missing	7	3	11,5		
	System	1	3,8		
	Total	4	15,4		
Total		26	100,0		

Internally developed intellectual property

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	45	45,0	60,8	60,8
	2	8	8,0	10,8	71,6
	3	6	6,0	8,1	79,7
	4	5	5,0	6,8	86,5
	5	5	5,0	6,8	93,2
	6	5	5,0	6,8	100,0
	Total	74	74,0	100,0	
Missing	7	21	21,0		
	System	5	5,0		
	Total	26	26,0		
Total		100	100,0		

Internally developed concessions, licenses and similar rights

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	53	54,6	74,6	74,6
	2	5	5,2	7,0	81,7
	3	7	7,2	9,9	91,5
	4	4	4,1	5,6	97,2
	5	1	1,0	1,4	98,6
	6	1	1,0	1,4	100,0
	Total	71	73,2	100,0	
	7	22	22,7		
Missing	System	4	4,1		
	Total	26	26,8		
Total		97	100,0		

Friedman test

	Mean Rank
Internally developed capitalised value of formation / reorganization expenses	1,28
Internally developed capitalised value of experimental development	1,72
N	9
Chi-Square	4,000
df	1
Asymp. Sig.	,046

Friedman test

	Mean Rank
Internally developed capitalised value of formation / reorganization expenses	1,34
Internally developed intellectual property	1,66
N	19
Chi-Square	3,600
df	1
Asymp. Sig.	,058

Friedman test

	Mean Rank
Internally developed capitalised value of experimental development	1,55
Internally developed intellectual property	1,45
N	21
Chi-Square	,286
df	1
Asymp. Sig.	,593

Annex 5 – The statistics of Hypothesis H2

The statistics of Subhypothesis H2/a)

Statistics of AB1 database

Statistics

Average statistical staff headcount

N	Valid	353063
	Missing	47340
Mean		6,21
Median		1,00
Mode		1
Std. Deviation		83,582
Range		21350
Minimum		0
Maximum		21350
Percentiles	10	,00
	20	,00
	30	1,00
	40	1,00
	50	1,00
	60	2,00
	70	2,00
	80	4,00
	90	8,00

Correlations

		Intangible assets in balance sheet	Corr. balance sheet total
Intangible assets in balance sheet	Pearson Correlation	1	,189**
	Sig. (2-tailed)		,000
	N	45806	45806
Corr. balance sheet total	Pearson Correlation	,189**	1
	Sig. (2-tailed)	,000	
	N	45806	45806

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Turnover	Intangible assets in balance sheet
Turnover	Pearson Correlation	1	,199**
	Sig. (2-tailed)		,000
	N	45806	45806
Intangible assets in balance sheet	Pearson Correlation	,199**	1
	Sig. (2-tailed)	,000	
	N	45806	45806

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

Control Variables			Intangible assets in balance sheet	Corr. balance sheet total	Turnover
-none-[a]	Intangible assets in balance sheet	Correlation	1,000	,189	,199
		Significance (2-tailed)	.	,000	,000
		df	0	45804	45804
	Corr. balance sheet total	Correlation	,189	1,000	,471
		Significance (2-tailed)	,000	.	,000
		df	45804	0	45804
	Turnover	Correlation	,199	,471	1,000
		Significance (2-tailed)	,000	,000	.
		df	45804	45804	0
Turnover	Intangible assets in balance sheet	Correlation	1,000	,110	
		Significance (2-tailed)	.	,000	
		df	0	45803	
	Corr. balance sheet total	Correlation	,110	1,000	
		Significance (2-tailed)	,000	.	
		df	45803	0	

a. Cells contain zero-order (Pearson) correlations.

Correlations

Control Variables			Intangible assets in balance sheet	Turnover	Corr. balance sheet total
-none-[a]	Intangible assets in balance sheet	Correlation	1,000	,199	,189
		Significance (2-tailed)	.	,000	,000
		df	0	45804	45804
	Turnover	Correlation	,199	1,000	,471
		Significance (2-tailed)	,000	.	,000
		df	45804	0	45804
	Corr. balance sheet total	Correlation	,189	,471	1,000
		Significance (2-tailed)	,000	,000	.
		df	45804	45804	0
Corr. balance sheet total	Intangible assets in balance sheet	Correlation	1,000	,127	
		Significance (2-tailed)	.	,000	
		df	0	45803	
	Turnover	Correlation	,127	1,000	
		Significance (2-tailed)	,000	.	
		df	45803	0	

a. Cells contain zero-order (Pearson) correlations.

Correlations

		Corr. balance sheet total	Turnover
Corr. balance sheet total	Pearson Correlation	1	,471**
	Sig. (2-tailed)		,000
	N	45806	45806
Turnover	Pearson Correlation	,471**	1
	Sig. (2-tailed)	,000	
	N	45806	45806

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Internal research costs	Balance sheet total
Internal research costs	Pearson Correlation	1	,254**
	Sig. (2-tailed)		,000
	N	676	676
Balance sheet total	Pearson Correlation	,254**	1
	Sig. (2-tailed)	,000	
	N	676	676

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Internal research costs	Turnover
Internal research costs	Pearson Correlation	1	,273**
	Sig. (2-tailed)		,000
	N	676	676
Turnover	Pearson Correlation	,273**	1
	Sig. (2-tailed)	,000	
	N	676	676

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

Control Variables			Internal research costs	Balance sheet total	Turnover
-none-[a]	Internal research costs	Correlation	1,000	,254	,273
		Significance (2-tailed)	.	,000	,000
		df	0	674	674
	Balance sheet total	Correlation	,254	1,000	,757
		Significance (2-tailed)	,000	.	,000
		df	674	0	674
	Turnover	Correlation	,273	,757	1,000
		Significance (2-tailed)	,000	,000	.
		df	674	674	0
Turnover	Internal research costs	Correlation	1,000	,075	
		Significance (2-tailed)	.	,053	
		df	0	673	
	Balance sheet total	Correlation	,075	1,000	
		Significance (2-tailed)	,053	.	
		df	673	0	

a. Cells contain zero-order (Pearson) correlations.

Correlations

Control Variables			Internal research costs	Turnover	Balance sheet total
-none-[a]	Internal research costs	Correlation	1,000	,273	,254
		Significance (2-tailed)	.	,000	,000
		df	0	674	674
	Turnover	Correlation	,273	1,000	,757
		Significance (2-tailed)	,000	.	,000
		df	674	0	674
	Balance sheet total	Correlation	,254	,757	1,000
		Significance (2-tailed)	,000	,000	.
		df	674	674	0
Balance sheet total	Internal research costs	Correlation	1,000	,128	
		Significance (2-tailed)	.	,001	
		df	0	673	
	Turnover	Correlation	,128	1,000	
		Significance (2-tailed)	,001	.	
		df	673	0	

a. Cells contain zero-order (Pearson) correlations.

Correlations

		Turnover	Balance sheet total
Turnover	Pearson Correlation	1	,757**
	Sig. (2-tailed)		,000
	N	676	676
Balance sheet total	Pearson Correlation	,757**	1
	Sig. (2-tailed)	,000	
	N	676	676

**. Correlation is significant at the 0.01 level (2-tailed).

Statistics of AB3 database

Question 5: **How frequently were intangible assets included in the financial statements of entities belonging to the following categories based on their turnover?**

Statistics

		Entities with turnover under mHUF 200	Entities with turnover between mHUF 200-500	Entities with turnover between mHUF 500-1000	Entities with turnover above mHUF 1000
N	Valid	88	61	44	52
	Missing	26	53	70	62

Entities with turnover under mHUF 200

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	12	10,5	13,6	13,6
	2	24	21,1	27,3	40,9
	3	12	10,5	13,6	54,5
	4	16	14,0	18,2	72,7
	5	10	8,8	11,4	84,1
	6	14	12,3	15,9	100,0
	Total	88	77,2	100,0	
Missing	7	18	15,8		
	System	8	7,0		
	Total	26	22,8		
Total		114	100,0		

Entities with turnover between mHUF 200-500

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	8	7,0	13,1	13,1
	2	11	9,6	18,0	31,1
	3	12	10,5	19,7	50,8
	4	7	6,1	11,5	62,3
	5	3	2,6	4,9	67,2
	6	20	17,5	32,8	100,0
	Total	61	53,5	100,0	
Missing	7	40	35,1		
	System	13	11,4		
	Total	53	46,5		
Total		114	100,0		

Entities with turnover between mHUF 500-1000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	7	6,1	15,9	15,9
	2	6	5,3	13,6	29,5
	3	5	4,4	11,4	40,9
	4	7	6,1	15,9	56,8
	5	1	,9	2,3	59,1
	6	18	15,8	40,9	100,0
	Total	44	38,6	100,0	
Missing	7	54	47,4		
	System	16	14,0		
	Total	70	61,4		
Total		114	100,0		

Entities with turnover above mHUF 1000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	8	7,0	15,4	15,4
	2	2	1,8	3,8	19,2
	3	3	2,6	5,8	25,0
	4	6	5,3	11,5	36,5
	5	6	5,3	11,5	48,1
	6	27	23,7	51,9	100,0
	Total	52	45,6	100,0	
Missing	7	52	45,6		
	System	10	8,8		
	Total	62	54,4		
Total		114	100,0		

Friedman test

	Mean Rank	Median
Entities with turnover under mHUF 200	2,20	2,00
Entities with turnover between mHUF 200-500	2,22	3,00
Entities with turnover between mHUF 500-1000	2,67	4,00
Entities with turnover above mHUF 1000	2,91	4,00

Test Statistics[a]

N	27
Chi-Square	9,509
df	3
Asymp. Sig.	,023

a. Friedman Test

Question 6: How frequently were intangible assets included in the financial statements of entities belonging to the following categories based on their balance sheet total?

Statistics

		Entities with balance sheet total under mHUF 100	Entities with balance sheet total between mHUF 100-500	Entities with balance sheet total between mHUF 500-1000	Entities with balance sheet total above mHUF 1000
N	Valid	87	65	48	44
	Missing	27	49	66	70

Entities with balance sheet total under mHUF 100

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	12	10,5	13,8	13,8
	2	20	17,5	23,0	36,8
	3	15	13,2	17,2	54,0
	4	15	13,2	17,2	71,3
	5	10	8,8	11,5	82,8
	6	15	13,2	17,2	100,0
	Total	87	76,3	100,0	
Missing	7	16	14,0		
	System	11	9,6		
	Total	27	23,7		
Total		114	100,0		

Entities with balance sheet total between mHUF 100-500

		Frequency	Percent	Valid Percent	Cumulative Percent
	1	4	3,5	6,2	6,2
	2	18	15,8	27,7	33,8
	3	11	9,6	16,9	50,8
Valid	4	7	6,1	10,8	61,5
	5	5	4,4	7,7	69,2
	6	20	17,5	30,8	100,0
	Total	65	57,0	100,0	
	7	36	31,6		
Missing	System	13	11,4		
	Total	49	43,0		
Total		114	100,0		

Entities with balance sheet total between mHUF 500-1000

		Frequency	Percent	Valid Percent	Cumulative Percent
	1	6	5,3	12,5	12,5
	2	4	3,5	8,3	20,8
	3	5	4,4	10,4	31,3
Valid	4	7	6,1	14,6	45,8
	5	3	2,6	6,3	52,1
	6	23	20,2	47,9	100,0
	Total	48	42,1	100,0	
	7	46	40,4		
Missing	System	20	17,5		
	Total	66	57,9		
Total		114	100,0		

Entities with balance sheet total above mHUF 1000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	7	6,1	15,9	15,9
	2	1	,9	2,3	18,2
	3	7	6,1	15,9	34,1
	4	3	2,6	6,8	40,9
	5	5	4,4	11,4	52,3
	6	21	18,4	47,7	100,0
	Total	44	38,6	100,0	
Missing	7	55	48,2		
	System	15	13,2		
	Total	70	61,4		
Total		114	100,0		

Friedman test

	Mean Rank	Median
Entities with balance sheet total under mHUF 100	2,07	3,00
Entities with balance sheet total between mHUF 100-500	2,30	3,00
Entities with balance sheet total between mHUF 500-1000	2,72	4,00
Entities with balance sheet total above mHUF 1000	2,91	4,00

Test Statistics[a]

N	27
Chi-Square	10,475
df	3
Asymp. Sig.	,015

a. Friedman Test

The statistics of Subhypothesis H2/b)

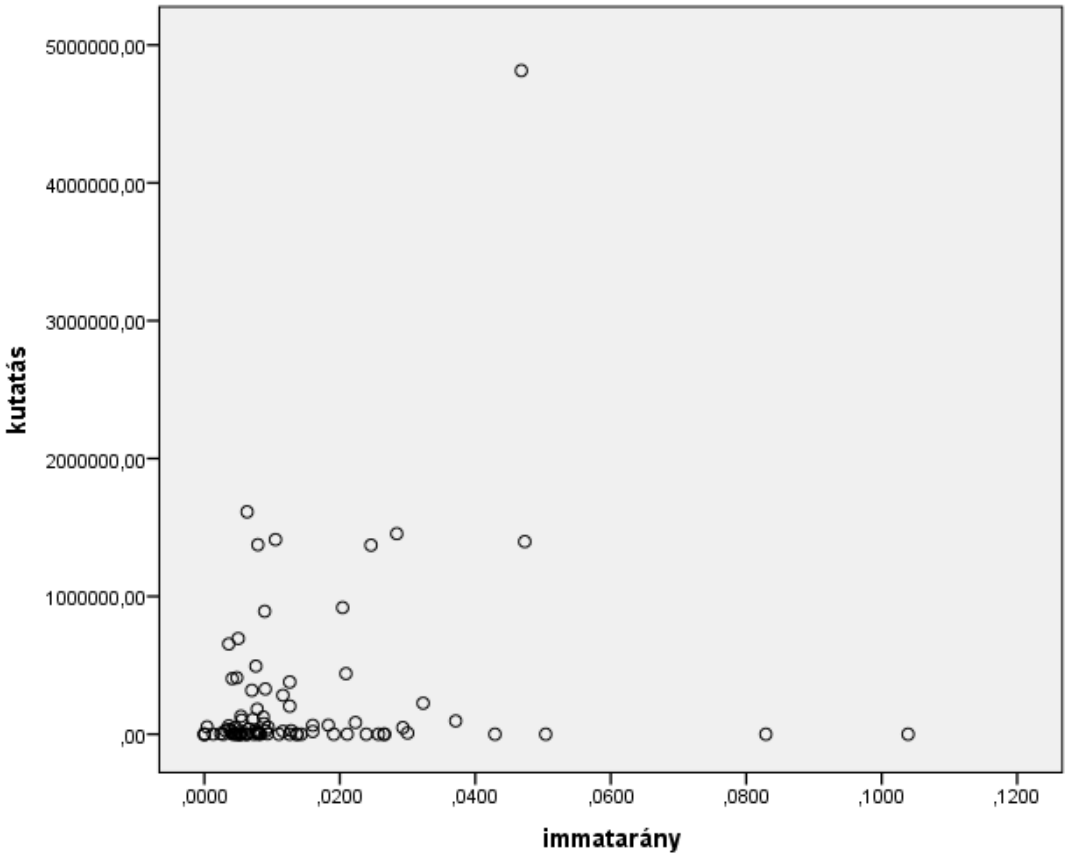
List of TEAOR numbers

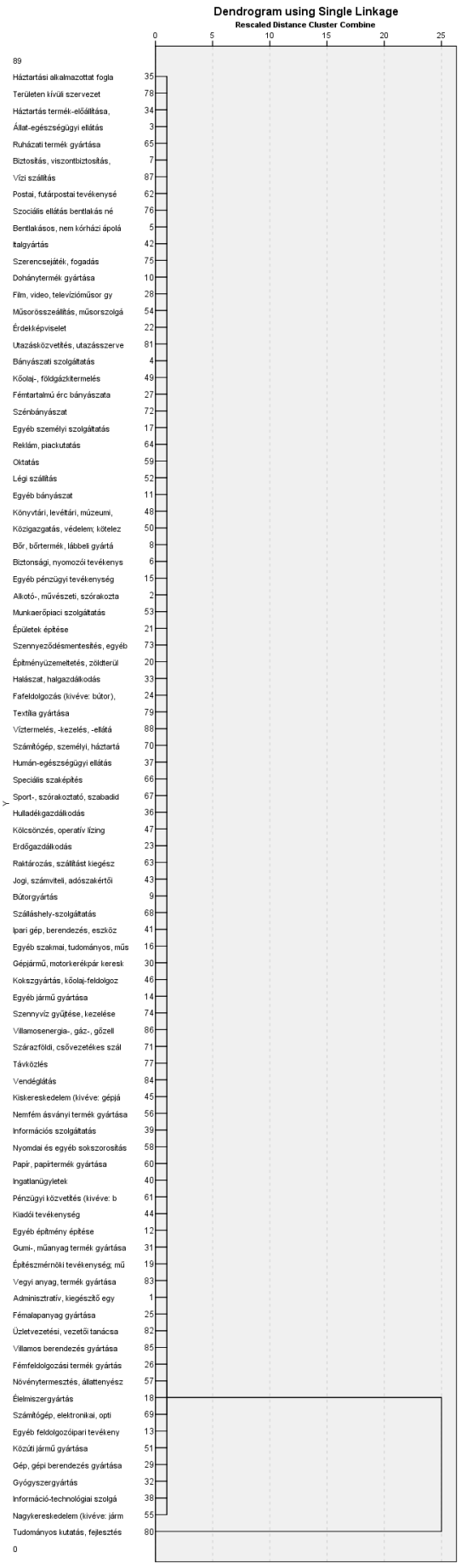
TEAOR group	Industrial sector
1	Crop and animal production, hunting and related service activities
2	Forestry and logging
3	Fishing and aquaculture
5	Coal mining
6	Extraction of crude petroleum and natural gas
7	Mining of metal ores
8	Other mining and quarrying
9	Mining support service activities
10	Manufacture of food products
11	Manufacture of beverages
12	Manufacture of tobacco products
13	Manufacture of textiles
14	Manufacture of wearing apparel
15	Manufacture of leather and related products
16	Manufacture of wood and of products of wood and cork, except furniture; manufacture
17	Manufacture of paper and paper products
18	Printing and reproduction of recorded media
19	Manufacture of coke and refined petroleum products
20	Chemicals manufacturing
21	Pharmaceutical industry
22	Manufacture of rubber and plastic products
23	Manufacture of other non-metallic mineral products
24	Manufacture of basic metals
25	Manufacture of fabricated metal products, except machinery and equipment
26	Manufacture of computer, electronic and optical products
27	Manufacture of electrical equipment
28	Manufacture of machinery and equipment n.e.c.
29	Manufacture of motor vehicles, trailers and semi-trailers
30	Manufacture of other transport equipment
31	Manufacture of furniture
32	Other manufacturing
33	Repair and installation of machinery and equipment
35	Electricity, gas, steam and air conditioning supply
36	Water collection, treatment and supply
37	Sewerage
38	Waste collection, treatment and disposal activities; materials recovery
39	Remediation activities and other waste management services
41	Building construction
42	Civil engineering
43	Specialised construction activities
45	Wholesale and retail trade and repair of motor vehicles and motorcycles
46	Wholesale trade, except of motor vehicles and motorcycles

47	Retail trade, except of motor vehicles and motorcycles
49	Land transport and transport via pipelines
50	Water transport
51	Air transport
52	Warehouse and transport activities
53	Postal and courier activities
55	Accommodation
56	Food and beverage service activities
58	Editing industries
59	Motion picture, video and television programme production, sound recording and music
60	Programming and broadcasting activities
61	Telecommunications
62	IT services
63	Information service activities
64	Financial service activities, except insurance and pension funding
65	Insurance, reinsurance and pension funding, except compulsory social security
66	Activities auxiliary to financial services and insurance activities
68	Real estate mediation
69	Legal and accounting activities
70	Activities of head offices; management consultancy activities
71	Architectural and engineering activities; technical testing and analysis
72	Research and development
73	Advertising and market research
74	Other professional, scientific and technical activities
75	Veterinary activities
77	Rental and leasing activities
78	Employment activities
79	Travel agency, tour operator and other reservation service and related activities
80	Security and investigation activities
81	Services to buildings and landscape activities
82	Office administrative, office support and other business support activities
84	Public administration and defence; compulsory social security
85	Education
86	Human health activities
87	Residential care activities
88	Social work activities without accommodation
90	Creative, arts and entertainment activities
91	Libraries, archives, museums and other cultural activities
92	Gambling and betting activities
93	Sports activities and amusement and recreation activities
94	Activities of membership organisations
95	Repair of computers and personal and household goods
96	Other personal service activities
97	Activities of households as employers of domestic personnel
98	Undifferentiated goods- and services-producing activities of private households for own
99	Activities of extraterritorial organisations and bodies

Statistics of AB1 database

Check of outlier values before cluster analysis




Dendrogram using Single Linkage
Rescaled Distance Cluster Combine
0
5
10
15
20
25
89
Háztartási alkalmazottat fogla 35
Területen kívüli szervezet 78
Háztartás termék-előállítása, 34
Állat-egészségügyi ellátás 3
Ruházati termék gyártása 65
Biztosítás, viszontbiztosítás, 7
Vízi szállítás 87
Postai, futárpostai tevékenysé 62
Szociális ellátás bentlakás né 76
Bentlakásos, nem kórházi ápolá 5
Italgyártás 42
Szerencsejáték, fogadás 75
Dohánytermék gyártása 10
Film, video, televízióműsor gy 28
Műsorösszeállítás, műsorszolgá 54
Érdek-képviselet 22
Utazásközvetítés, utazásszerve 81
Bányászati szolgáltatás 4
Kőolaj-, földgázkitermelés 49
Fémtartalmú érc bányászata 27
Szénbányászat 72
Egyéb személyi szolgáltatás 17
Reklám, piackutatás 64
Oktatás 59
Légi szállítás 52
Egyéb bányászat 11
Könyvtári, levéltári, múzeumi, 48
Közigazgatás, védelem; kötelez 50
Bőr, bőrtermék, lábbeli gyártá 8
Biztonsági, nyomozói tevékenys 6
Egyéb pénzügyi tevékenység 15
Alkotó-, művészeti, szórakozta 2
Munkaerőpiaci szolgáltatás 53
Épületek építése 21
Szennyeződésmentesítés, egyéb 73
Építményüzemeltetés, zöldterül 20
Halászat, halgazdálkodás 33
Fafeldolgozás (kivéve: bútor), 24
Textília gyártása 79
Víztermelés, -kezelés, -ellátá 88
Számítógép, személyi, háztartá 70
Humán-egészségügyi ellátás 37
Speciális szaképítés 66
Sport-, szórakoztató, szabadid 67
Hulladékgazdálkodás 36
Kölcsönzés, operatív lízing 47
Erdőgazdálkodás 23
Raktározás, szállítást kiegész 63
Jogi, számviteli, adószakértői 43
Bútorgyártás 9
Szálláshely-szolgáltatás 68
Ipari gép, berendezés, eszköz 41
Egyéb szakmai, tudományos, műs 16
Gépjármű, motorkerékpár keresk 30
Kokszgyártás, kőolaj-feldolgoz 46
Egyéb jármű gyártása 14
Szennyvíz gyűjtése, kezelése 74
Villamosenergia-, gáz-, gőzell 86
Szárazföldi, csővezetékes szál 71
Távközlés 77
Vendéglátás 84
Kiskereskedelem (kivéve: gépjá 45
Nemfém ásványi termék gyártása 56
Információs szolgáltatás 39
Nyomdai és egyéb sokszorosítás 58
Papír, papírtermék gyártása 60
Ingatlanügyletek 40
Pénzügyi közvetítés (kivéve: b 61
Kiadói tevékenység 44
Egyéb építmény építése 12
Gumi-, műanyag termék gyártása 31
Építészmérnöki tevékenység; mű 19
Vegyi anyag, termék gyártása 83
Adminisztratív, kiegészítő egy 1
Fémalapanyag gyártása 25
Üzletvezetési, vezetői tanácsa 82
Villamos berendezés gyártása 85
Fémfeldolgozási termék gyártás 26
Növénytermesztés, állattenyész 57
Élelmiszergyártás 18
Számítógép, elektronikai, opti 69
Egyéb feldolgozóipari tevékeny 13
Közúti jármű gyártása 51
Gép, gépi berendezés gyártása 29
Gyógyszergyártás 32
Információ-technológiai szolgá 38
Nagykereskedelem (kivéve: járm 55
Tudományos kutatás, fejlesztés 80
0
Y

Ward's method

Case Processing Summary[a,b]

Cases					
Valid		Missing		Total	
N	Percent	N	Percent	N	Percent
85	100,0	0	,0	85	100,0

a. Squared Euclidean Distance used

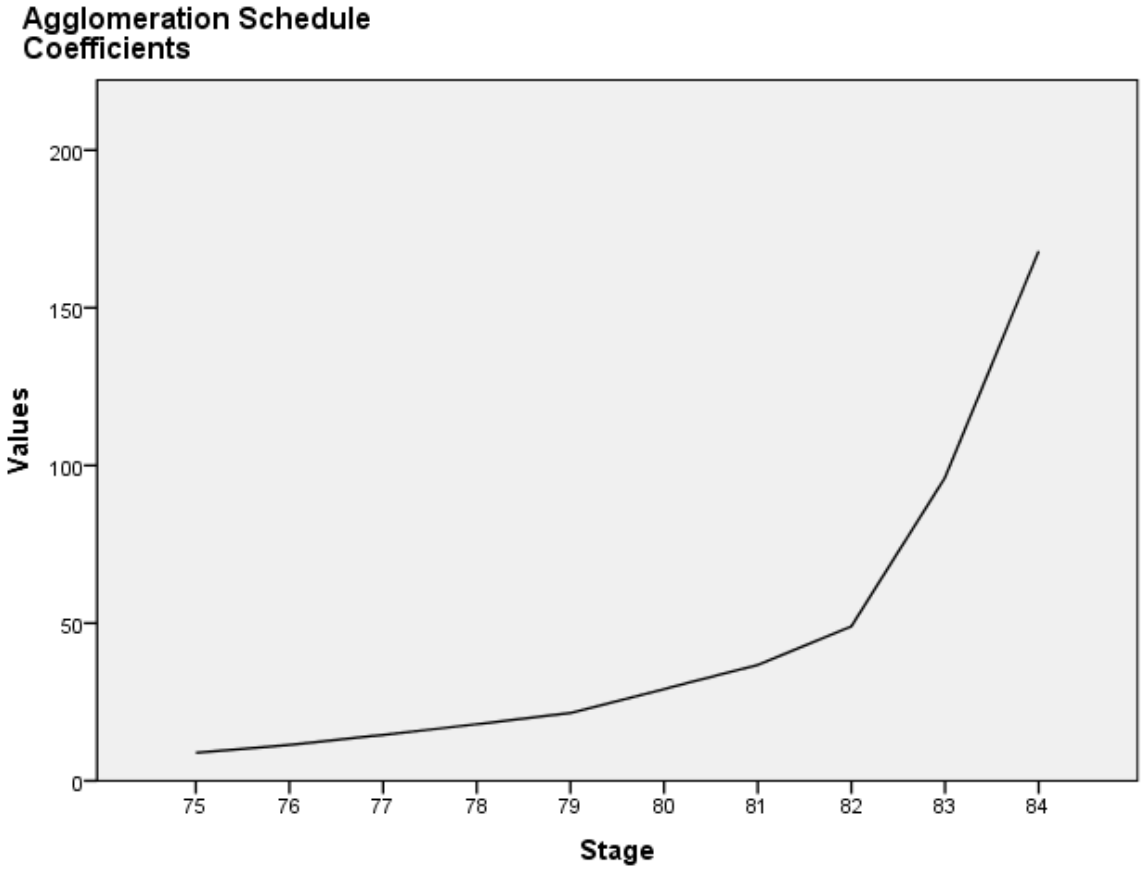
b. Ward Linkage

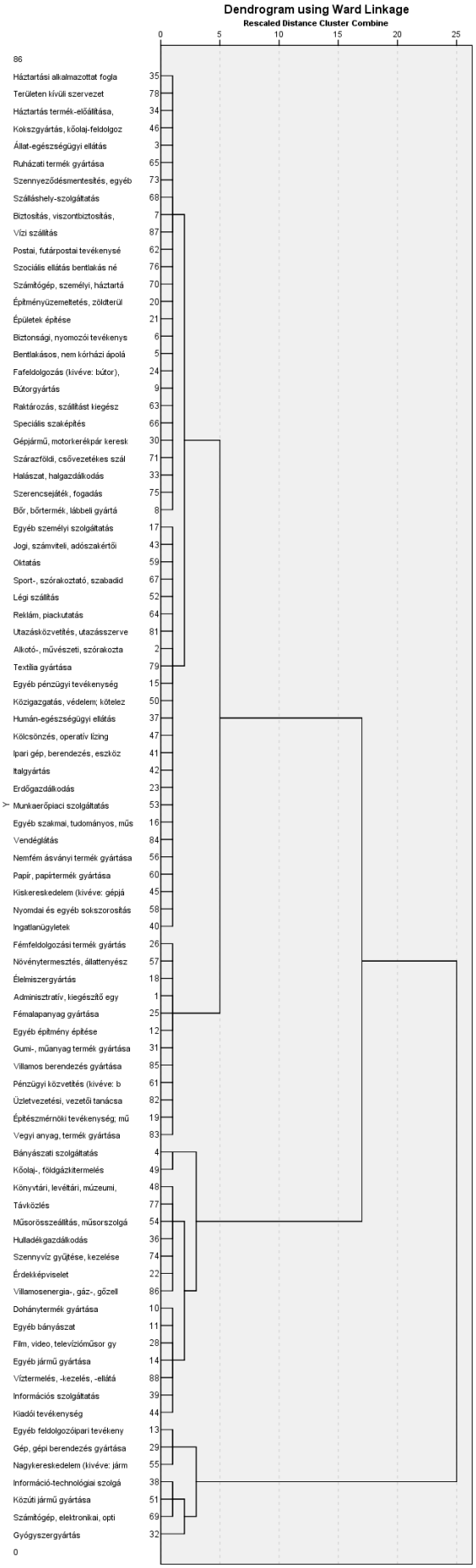
Agglomeration Schedule

Stage	Cluster Combined		Coefficients	Stage Cluster First Appears		Next Stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
1	35	78	,000	0	0	2
2	34	35	,000	0	1	41
3	3	65	,000	0	0	11
4	7	87	,000	0	0	19
5	62	76	,000	0	0	15
6	52	64	,000	0	0	26
7	10	11	,000	0	0	31
8	20	21	,000	0	0	9
9	6	20	,000	0	8	21
10	2	79	,001	0	0	13
11	3	73	,001	3	0	36
12	37	47	,001	0	0	20
13	2	15	,001	10	0	16
14	5	24	,001	0	0	21
15	62	70	,002	5	0	19
16	2	50	,002	13	0	33
17	33	75	,003	0	0	38
18	9	63	,004	0	0	27
19	7	62	,006	4	15	42
20	37	41	,007	12	0	29
21	5	6	,009	14	9	42
22	23	53	,011	0	0	45
23	12	31	,013	0	0	60
24	59	67	,015	0	0	43
25	56	60	,018	0	0	57
26	52	81	,020	6	0	43
27	9	66	,023	18	0	37
28	17	43	,026	0	0	54
29	37	42	,030	20	0	33
30	16	84	,034	0	0	45

31	10	28	,038	7	0	61
32	30	71	,043	0	0	37
33	2	37	,049	16	29	52
34	36	74	,055	0	0	56
35	14	88	,062	0	0	61
36	3	68	,070	11	0	53
37	9	30	,078	27	32	55
38	8	33	,088	0	17	55
39	45	58	,099	0	0	47
40	26	57	,113	0	0	67
41	34	46	,127	2	0	70
42	5	7	,142	21	19	53
43	52	59	,158	26	24	54
44	22	86	,174	0	0	56
45	16	23	,191	30	22	52
46	1	25	,209	0	0	63
47	40	45	,228	0	39	57
48	61	82	,252	0	0	58
49	48	77	,282	0	0	51
50	13	29	,316	0	0	66
51	48	54	,353	49	0	69
52	2	16	,407	33	45	68
53	3	5	,461	36	42	64
54	17	52	,517	28	43	73
55	8	9	,578	38	37	64
56	22	36	,643	44	34	69
57	40	56	,710	47	25	68
58	19	61	,791	0	48	71
59	38	51	,877	0	0	74
60	12	85	,968	23	0	63
61	10	14	1,095	31	35	72
62	39	44	1,250	0	0	72
63	1	12	1,414	46	60	75
64	3	8	1,625	53	55	70
65	4	49	1,874	0	0	80
66	13	55	2,132	50	0	81
67	18	26	2,459	0	40	76
68	2	40	2,795	52	57	73
69	22	48	3,188	56	51	77
70	3	34	3,769	64	41	78
71	19	83	4,374	58	0	75
72	10	39	5,213	61	62	77
73	2	17	6,338	68	54	78

74	38	69	7,606	59	0	79
75	1	19	8,901	63	71	76
76	1	18	11,395	75	67	82
77	10	22	14,573	72	69	80
78	2	3	17,957	73	70	82
79	32	38	21,525	0	74	81
80	4	10	29,085	65	77	83
81	13	32	36,750	66	79	84
82	1	2	48,982	76	78	83
83	1	4	96,202	82	80	84
84	1	13	168,000	83	81	0




Dendrogram using Ward Linkage
Rescaled Distance Cluster Combine
0
5
10
15
20
25
86
Háztartási alkalmazottat fogla 35
Területen kívüli szervezet 78
Háztartás termék-előállítása, 34
Kokszgyártás, kőolaj-feldolgoz 46
Állat-egészségügyi ellátás 3
Ruházati termék gyártása 65
Szennyeződésmentesítés, egyéb 73
Szálláshely-szolgáltatás 68
Biztosítás, viszontbiztosítás, 7
Vízi szállítás 87
Postai, futárpostai tevékenysé 62
Szociális ellátás bentlakás né 76
Számítógép, személyi, háztartá 70
Építményüzemeltetés, zöldterül 20
Épületek építése 21
Biztonsági, nyomozói tevékenys 6
Bentlakásos, nem kórházi ápolá 5
Fafeldolgozás (kivéve: bútor), 24
Bútorgyártás 9
Raktározás, szállítást kiegész 63
Speciális szaképítés 66
Gépjármű, motorkerékpár keresk 30
Szárazföldi, csővezetékes szál 71
Halászat, halgazdálkodás 33
Szerencsejáték, fogadás 75
Bőr, bőrtermék, lábbeli gyártá 8
Egyéb személyi szolgáltatás 17
Jogi, számviteli, adószakértői 43
Oktatás 59
Sport-, szórakoztató, szabadid 67
Légi szállítás 52
Reklám, piackutatás 64
Utazásközvetítés, utazásszerve 81
Alkotó-, művészeti, szórakozta 2
Textília gyártása 79
Egyéb pénzügyi tevékenység 15
Közigazgatás, védelem; kötelez 50
Humán-egészségügyi ellátás 37
Kölcsönzés, operatív lízing 47
Ipari gép, berendezés, eszköz 41
Italgyártás 42
Erdőgazdálkodás 23
Munkaerőpiaci szolgáltatás 53
Egyéb szakmai, tudományos, műs 16
Vendéglátás 84
Nemfém ásványi termék gyártása 56
Papír, papírtermék gyártása 60
Kiskereskedelem (kivéve: gépjá 45
Nyomdai és egyéb sokszorosítás 58
Ingatlanügyletek 40
Fémfeldolgozási termék gyártás 26
Növénytermesztés, állattenyész 57
Élelmiszergyártás 18
Adminisztratív, kiegészítő egy 1
Fémalapanyag gyártása 25
Egyéb építmény építése 12
Gumi-, műanyag termék gyártása 31
Villamos berendezés gyártása 85
Pénzügyi közvetítés (kivéve: b 61
Üzletvezetési, vezetői tanácsa 82
Építészmérnöki tevékenység; mű 19
Vegyi anyag, termék gyártása 83
Bányászati szolgáltatás 4
Kőolaj-, földgázkitermelés 49
Könyvtári, levéltári, múzeumi, 48
Távközlés 77
Műsorösszeállítás, műsorszolgá 54
Hulladékgazdálkodás 36
Szennyvíz gyűjtése, kezelése 74
Érdekképviselet 22
Villamosenergia-, gáz-, gőzell 86
Dohánytermék gyártása 10
Egyéb bányászat 11
Film, video, televízióműsor gy 28
Egyéb jármű gyártása 14
Víztermelés, -kezelés, -ellátá 88
Információs szolgáltatás 39
Kiadói tevékenység 44
Egyéb feldolgozóipari tevékeny 13
Gép, gépi berendezés gyártása 29
Nagykereskedelem (kivéve: járm 55
Információ-technológiai szolgá 38
Közúti jármű gyártása 51
Számítógép, elektronikai, opti 69
Gyógyszergyártás 32
0

Non-hierarchical k-means cluster analysis

Initial Cluster Centers

	Cluster		
	1	2	3
Zscore(intang ratio)	1,54971	3,61923	-1,12186
Zscore(research)	3,18509	-,50413	-,50413

Iteration History[a]

Iteration	Change in Cluster Centers		
	1	2	3
1	,938	1,601	,805
2	,000	,259	,062
3	,000	,158	,039
4	,000	,068	,017
5	,000	,000	,000

a. Convergence achieved due to no or small change in cluster centers. The maximum absolute coordinate change for any center is ,000. The current iteration is 5. The minimum distance between initial centers is 4,230.

Distances between Final Cluster Centers

Cluster	1	2	3
1		3,259	3,293
2	3,259		2,018
3	3,293	2,018	

Number of Cases in each Cluster

Cluster	1	8,000
	2	15,000
	3	62,000
Valid		85,000
Missing		,000

Final Cluster Centers

	Cluster		
	1	2	3
Zscore(intang ratio)	,69250	1,55222	-,46489
Zscore(research)	2,80350	-,34036	-,27940

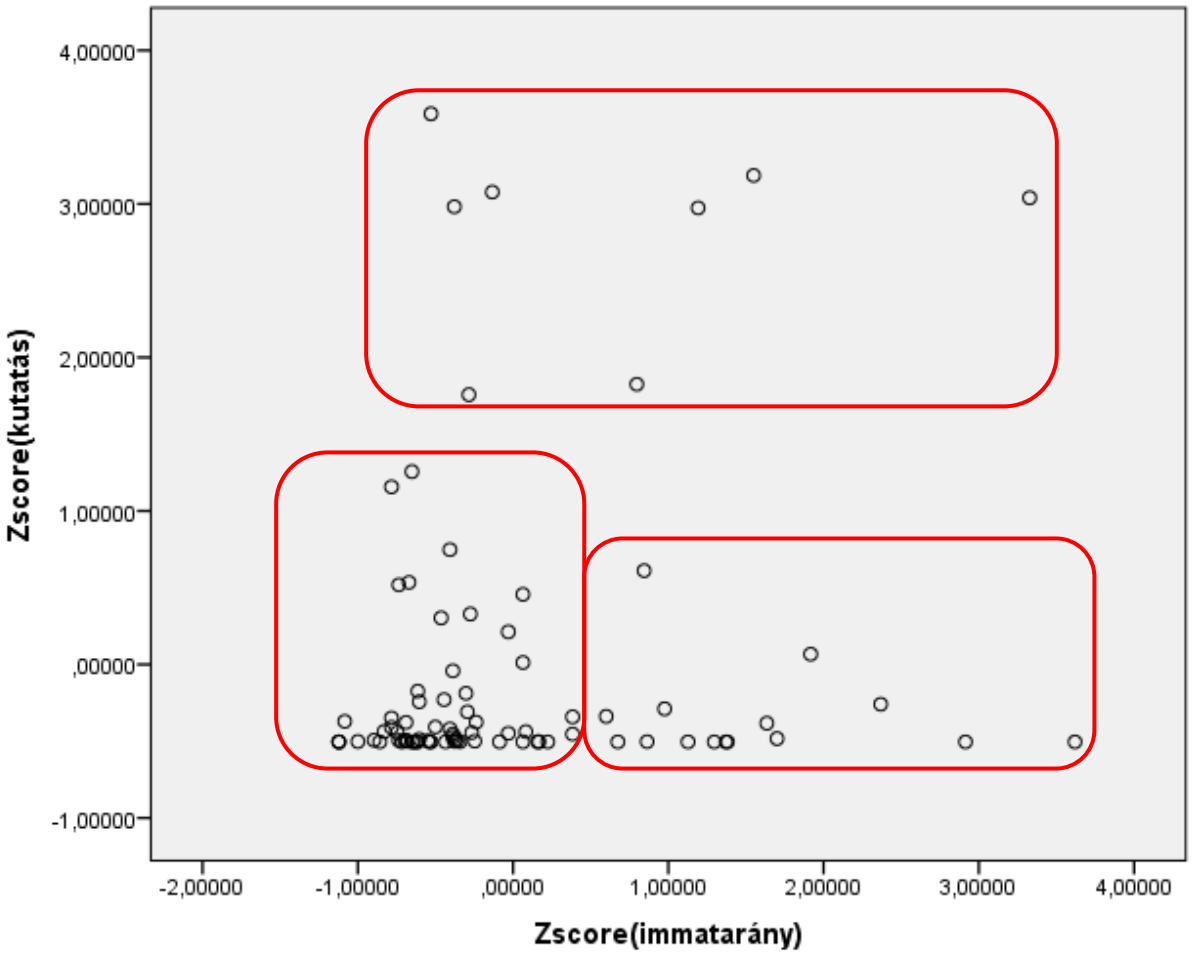
Industrial sectors in clusters

Interpretation of clusters	Industrial sectors
intangible assets **above** the average + research expenses **above** the average	Other manufacturing
	Manufacture of food products
	Manufacture of machinery and equipment n.e.c.
	Pharmaceutical industry
	IT services
	Manufacture of motor vehicles, trailers and semi-trailers
	Wholesale trade, except of motor vehicles and motorcycles
	Manufacture of computer, electronic and optical products
intangible assets **above** the average + research expenses **under** the average	Mining support service activities
	Manufacture of tobacco products
	Other mining and quarrying
	Manufacture of other transport equipment
	Activities of membership organisations
	Motion picture, video and television programme production, sound recording and music
	Information service activities
	Editing industries
	Libraries, archives, museums and other cultural activities
	Extraction of crude petroleum and natural gas
	Programming and broadcasting activities
	Telecommunications
	Chemicals manufacturing
	Electricity, gas, steam and air conditioning supply
	Water collection, treatment and supply
intangible assets **under** the average + research expenses **under** the average	Office administrative, office support and other business support activities
	Creative, arts and entertainment activities
	Veterinary activities
	Residential care activities
	Security and investigation activities
	Insurance, reinsurance and pension funding, except compulsory social security
	Manufacture of leather and related products
	Manufacture of furniture
	Civil engineering
	Activities auxiliary to financial services and insurance activities
	Other professional, scientific and technical activities
	Other personal service activities
	Architectural and engineering activities; technical testing and analysis

	Services to buildings and landscape activities
	Building construction
	Forestry and logging
	Manufacture of wood and of products of wood and cork, except furniture; manufacture
	Manufacture of basic metals
	Manufacture of fabricated metal products, except machinery and equipment
	Wholesale and retail trade and repair of motor vehicles and motorcycles
	Manufacture of rubber and plastic products
	Fishing and aquaculture
	Undifferentiated goods- and services-producing activities of private households for own
	Activities of households as employers of domestic personnel
	Waste collection, treatment and disposal activities; materials recovery
	Human health activities
	Real estate mediation
	Repair and installation of machinery and equipment
	Manufacture of beverages
	Legal and accounting activities
	Retail trade, except of motor vehicles and motorcycles
	Manufacture of coke and refined petroleum products
	Rental and leasing activities
	Public administration and defence; compulsory social security
	Air transport
	Employment activities
	Manufacture of other non-metallic mineral products
	Crop and animal production, hunting and related service activities
	Printing and reproduction of recorded media
	Education
	Manufacture of paper and paper products
	Financial service activities, except insurance and pension funding
	Postal and courier activities
	Warehouse and transport activities
	Advertising and market research
	Manufacture of wearing apparel
	Specialised construction activities
	Sports activities and amusement and recreation activities
	Accommodation
	Repair of computers and personal and household goods

	Land transport and transport via pipelines
	Remediation activities and other waste management services
	Sewerage
	Gambling and betting activities
	Social work activities without accommodation
	Activities of extraterritorial organisations and bodies
	Manufacture of textiles
	Travel agency, tour operator and other reservation service and related activities
	Activities of head offices; management consultancy activities
	Food and beverage service activities
	Manufacture of electrical equipment
	Water transport

3 clusters in dimension of industrial sectors



Statistics of AB3 database

Question 7: How frequently were intangible assets included in the financial statements of entities belonging to the following categories based on the industry they operate in?

Intangible assets in financial statements in dimension of business activity

		1	2	3	4	5	6	Total
Mining and quarrying; Manufacturing	Frequency	3	1			1	3	8
	Valid Percent	37,5	12,5			12,5	37,5	100
	Cumulative Percent	37,5	50			62,5	100	
Energy	Frequency	3	1	1		1	2	8
	Valid Percent	37,5	12,5	12,5		12,5	25	100
	Cumulative Percent	37,5	50	62,5		75	100	
Construction	Frequency	3	7	6	1	2	9	28
	Valid Percent	10,7	25,0	21,4	3,6	7,1	32,1	100
	Cumulative Percent	10,7	35,7	57,1	60,7	67,9	100	
Agriculture, hunting and forestry; Fishing	Frequency	4	4	1	1	1		11
	Valid Percent	36,4	36,4	9,1	9,1	9,1		100
	Cumulative Percent	36,4	72,7	81,8	90,9	100		
Wholesale and retail trade	Frequency	4	13	9	6	5	15	52
	Valid Percent	7,7	25,0	17,3	11,5	9,6	28,8	100
	Cumulative Percent	7,7	32,7	50,0	61,5	71,2	100	
Transport, storage	Frequency	5	9	2		1	3	20
	Valid Percent	25,0	45,0	10,0		5,0	15,0	100
	Cumulative Percent	25,0	70,0	80,0		85,0	100	
Hotels and restaurants	Frequency	7	4	3	1		3	18
	Valid Percent	38,9	22,2	16,7	5,6		16,7	100
	Cumulative Percent	38,9	61,1	77,8	83,3		100	
Communication	Frequency	2	2	1	2		3	10
	Valid Percent	20,0	20,0	10,0	20,0		30,0	100
	Cumulative Percent	20,0	40,0	50,0	70,0		100	
Real estate	Frequency	5	5	1	2		2	15
	Valid Percent	33,3	33,3	6,7	13,3		13,3	100
	Cumulative Percent	33,3	66,7	73,3	86,7		100	
Insurance; Financial intermediation	Frequency	3	4	5	2		8	22
	Valid Percent	13,6	18,2	22,7	9,1		36,4	100
	Cumulative Percent	13,6	31,8	54,5	63,6		100	
IT services	Frequency	2	7	6	2	2	12	31
	Valid Percent	6,5	22,6	19,4	6,5	6,5	38,7	100
	Cumulative Percent	6,5	29,0	48,4	54,8	61,3	100	
Manufacture of electrical equipment and computers	Frequency	1		4	1	2	7	15
	Valid Percent	6,7		26,7	6,7	13,3	46,7	100
	Cumulative Percent	6,7		33,3	40,0	53,3	100	
Pharmaceutical industry	Frequency	1	1	2	1	1		6
	Valid Percent	16,7	16,7	33,3	16,7	16,7		100
	Cumulative Percent	16,7	33,3	66,7	83,3	100		
Health and social work; Education	Frequency	7	8	3	1	1	4	24
	Valid Percent	29,2	33,3	12,5	4,2	4,2	16,7	100
	Cumulative Percent	29,2	62,5	75,0	79,2	83,3	100	
Consultation services	Frequency	6	7	2	5	4	8	32
	Valid Percent	18,8	21,9	6,3	15,6	12,5	25,0	100
	Cumulative Percent	18,8	40,6	46,9	62,5	75,0	100	

Question 8: How frequently were research and development costs incurred during the operation of entities belonging to the following categories based on the industry they operate in?

R&D costs in financial statements in dimension of business activity

		1	2	3	4	5	6	Total
Mining and quarrying; Manufacturing	Frequency	3	2	1	1		1	8
	Valid Percent	37,5	25	12,5	12,5		12,5	100
	Cumulative Percent	37,5	62,5	75	87,5		100	
Energy	Frequency	6	1	1				8
	Valid Percent	75	12,5	12,5				100
	Cumulative Percent	75	87,5	100				
Construction	Frequency	22	3	1		1	1	28
	Valid Percent	78,6	10,7	3,6		3,6	3,6	100
	Cumulative Percent	78,6	89,3	92,9		96,4	100	
Agriculture, hunting and forestry; Fishing	Frequency	5	3	1	1		1	11
	Valid Percent	45,5	27,3	9,1	9,1		9,1	100
	Cumulative Percent	45,5	72,7	81,8	90,9		100	
Wholesale and retail trade	Frequency	40	5	3	1		3	52
	Valid Percent	76,9	9,6	5,8	1,9		5,8	100
	Cumulative Percent	76,9	86,5	92,3	94,2		100	
Transport, storage	Frequency	16	2	2				20
	Valid Percent	80,0	10,0	10,0				100
	Cumulative Percent	80,0	90,0	100				
Hotels and restaurants	Frequency	12	4		1	1		18
	Valid Percent	66,7	22,2		5,6	5,6		100
	Cumulative Percent	66,7	88,9		94,4	100		
Communication	Frequency	5	2	2			1	10
	Valid Percent	50,0	20,0	20,0			10,0	100
	Cumulative Percent	50,0	70,0	90,0			100	
Real estate	Frequency	12		2			1	15
	Valid Percent	80,0		13,3			6,7	100
	Cumulative Percent	80,0		93,3			100	
Insurance; Financial intermediation	Frequency	15	3	1	1	1	1	22
	Valid Percent	68,2	13,6	4,5	4,5	4,5	4,5	100
	Cumulative Percent	68,2	81,8	86,4	90,9	95,5	100	
IT services	Frequency	15	6	5	1		4	31
	Valid Percent	48,4	19,4	16,1	3,2		12,9	100
	Cumulative Percent	48,4	67,7	83,9	87,1		100	
Manufacture of electrical equipment and computers	Frequency	7	1		1	1	5	15
	Valid Percent	46,7	6,7		6,7	6,7	33,3	100
	Cumulative Percent	46,7	53,3		60,0	66,7	100	
Pharmaceutical industry	Frequency	3	1			1	1	6
	Valid Percent	50,0	16,7			16,7	16,7	100
	Cumulative Percent	50,0	66,7			83,3	100	
Health and social work; Education	Frequency	18	2	1	2	1		24
	Valid Percent	75,0	8,3	4,2	8,3	4,2		100
	Cumulative Percent	75,0	83,3	87,5	95,8	100		
Consultation services	Frequency	24	1	3	2	2		32
	Valid Percent	75,0	3,1	9,4	6,3	6,3		100
	Cumulative Percent	75,0	78,1	87,5	93,8	100		

Annex 6 – The statistics of Hypothesis H3

Statistics of AB1 database

Statistics

INTANG in balance sheet – INTANG net value

N	Valid	1480
	Missing	0
Mean		30931,5554
Median		218,5000
Mode		2,00
Std. Deviation		271757,60764
Range		7081998,00
Minimum		2,00
Maximum		7082000,00
Percentiles	10	14,0000
	20	32,0000
	30	62,0000
	40	107,4000
	50	218,5000
	60	481,6000
	70	1259,9000
	80	3884,6000
	90	20563,4000

Statistics

Impairment losses of intangible assets

N	Valid	404
	Missing	48202
Mean		72753,38
Median		562,50
Mode		1
Std. Deviation		722500,293
Range		14234936
Minimum		1
Maximum		14234937
Percentiles	25	75,50
	50	562,50
	75	8826,00

Statistics of AB3 database

Question 9: How frequently did the financial statements drawn up by you in accordance with the Accounting Act contain value adjustment?

Value adjustment of intellectual products

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	51	51,0	75,0	75,0
	2	5	5,0	7,4	82,4
	3	8	8,0	11,8	94,1
	4	1	1,0	1,5	95,6
	5	2	2,0	2,9	98,5
	6	1	1,0	1,5	100,0
	Total	68	68,0	100,0	
Missing	7	29	29,0		
	System	3	3,0		
	Total	32	32,0		
Total		100	100,0		

Value adjustment of concessions, licenses and similar rights

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	50	51,5	78,1	78,1
	2	8	8,2	12,5	90,6
	3	3	3,1	4,7	95,3
	5	1	1,0	1,6	96,9
	6	2	2,1	3,1	100,0
	Total	64	66,0	100,0	
Missing	7	31	32,0		
	System	2	2,1		
	Total	33	34,0		
Total		97	100,0		

Friedman test

	Mean Rank	Median
Value adjustment of intellectual products	1,52	1,47
Value adjustment of concessions, licenses and similar rights	1,48	1,47

Test Statistics[a]

N	58
Chi-Square	,500
df	1
Asymp. Sig.	,480

a. Friedman Test

Question 10: When preparing the financial statements, how often was the market value of intangible assets quantified at the year-end valuation?

Market valuation of capitalised value of formation / reorganization expenses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	13	41,9	61,9	61,9
	2	3	9,7	14,3	76,2
	3	1	3,2	4,8	81,0
	5	1	3,2	4,8	85,7
	6	3	9,7	14,3	100,0
	Total	21	67,7	100,0	
Missing	7	9	29,0		
	System	1	3,2		
	Total	10	32,3		
Total		31	100,0		

Market valuation of capitalised value of experimental development

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	12	46,2	63,2	63,2
	2	5	19,2	26,3	89,5
	3	2	7,7	10,5	100,0
	Total	19	73,1	100,0	
Missing	7	6	23,1		
	System	1	3,8		
	Total	7	26,9		
Total		26	100,0		

Market valuation of intellectual products

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	53	53,0	69,7	69,7
	2	11	11,0	14,5	84,2
	3	6	6,0	7,9	92,1
	4	2	2,0	2,6	94,7
	5	2	2,0	2,6	97,4
	6	2	2,0	2,6	100,0
	Total	76	76,0	100,0	
Missing	7	22	22,0		
	System	2	2,0		
	Total	24	24,0		
Total		100	100,0		

Market valuation of concessions, licenses and similar rights

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	53	54,6	73,6	73,6
	2	8	8,2	11,1	84,7
	3	4	4,1	5,6	90,3
	4	4	4,1	5,6	95,8
	5	2	2,1	2,8	98,6
	6	1	1,0	1,4	100,0
	Total	72	74,2	100,0	
Missing	7	23	23,7		
	System	2	2,1		
	Total	25	25,8		
Total		97	100,0		

Friedman test

	Mean Rank
Market valuation of capitalised value of formation / reorganization expenses	1,50
Market valuation of capitalised value of experimental development	1,50
N	11
Chi-Square	,000
df	1
Asymp. Sig.	1,000

Friedman test

	Mean Rank
Market valuation of capitalised value of formation / reorganization expenses	1,44
Market valuation of intellectual products	1,56
N	17
Chi-Square	1,000
df	1
Asymp. Sig.	,317

Friedman test

	Mean Rank
Market valuation of capitalised value of formation / reorganization expenses	1,42
Market valuation of concessions, licenses and similar rights	1,58
N	18
Chi-Square	3,000
df	1
Asymp. Sig.	,083

Friedman test

	Mean Rank
Market valuation of capitalised value of experimental development	1,39
Market valuation of intellectual products	1,61
N	18
Chi-Square	4,000
df	1
Asymp. Sig.	,046

Friedman test

	Mean Rank
Market valuation of capitalised value of experimental development	1,39
Market valuation of concessions, licenses and similar rights	1,61
N	18
Chi-Square	4,000
df	1
Asymp. Sig.	,046

Friedman test

	Mean Rank
Market valuation of intellectual products	1,47
Market valuation of concessions, licenses and similar rights	1,53
N	64
Chi-Square	1,600
df	1
Asymp. Sig.	,206

Question 11: Which method was used for the quantification of the market value of intangible assets at the year-end valuation (if performed)?

Subcontracting a valuation professional (or company)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	41	36,0	75,9	75,9
	2	2	1,8	3,7	79,6
	3	2	1,8	3,7	83,3
	4	5	4,4	9,3	92,6
	5	3	2,6	5,6	98,1
	6	1	,9	1,9	100,0
	Total	54	47,4	100,0	
Missing	System	60	52,6		
Total		114	100,0		

Elaboration and use of an internal valuation methodology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	37	32,5	72,5	72,5
	2	3	2,6	5,9	78,4
	3	5	4,4	9,8	88,2
	4	2	1,8	3,9	92,2
	5	3	2,6	5,9	98,0
	6	1	,9	2,0	100,0
	Total	51	44,7	100,0	
Missing	System	63	55,3		
Total		114	100,0		

Use of data from database

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	42	36,8	76,4	76,4
	2	2	1,8	3,6	80,0
	3	5	4,4	9,1	89,1
	5	4	3,5	7,3	96,4
	6	2	1,8	3,6	100,0
	Total	55	48,2	100,0	
Missing	System	59	51,8		
Total		114	100,0		

Simple calculation based on readily available market information

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	35	30,7	64,8	64,8
	2	4	3,5	7,4	72,2
	3	4	3,5	7,4	79,6
	4	4	3,5	7,4	87,0
	5	1	,9	1,9	88,9
	6	6	5,3	11,1	100,0
	Total	54	47,4	100,0	
Missing	System	60	52,6		
Total		114	100,0		

Professional support from an auditor

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	29	25,4	53,7	53,7
	2	4	3,5	7,4	61,1
	3	6	5,3	11,1	72,2
	4	5	4,4	9,3	81,5
	5	5	4,4	9,3	90,7
	6	5	4,4	9,3	100,0
	Total	54	47,4	100,0	
Missing	System	60	52,6		
Total		114	100,0		

Friedman test

	Mean Rank	Median
Subcontracting a valuation professional (or company)	2,76	1,69
Elaboration and use of an internal valuation methodology	2,92	1,71
Use of data from database	2,79	1,61
Simple calculation based on readily available market information	3,12	2,00
Professional support from an auditor	3,40	2,25

Test Statistics[a]

N	51
Chi-Square	16,372
df	4
Asymp. Sig.	,003

a. Friedman Test

Wilcoxon signed-rank test

		N	Mean Rank	Sum of Ranks
Elaboration and use of an internal valuation methodology - Subcontracting a valuation professional (or company)	Negative Ranks	5[a]	10,50	52,50
	Positive Ranks	9[b]	5,83	52,50
	Ties	37[c]		
	Total	51		
Use of data from database - Subcontracting a valuation professional (or company)	Negative Ranks	8[d]	8,38	67,00
	Positive Ranks	7[e]	7,57	53,00
	Ties	38[f]		
	Total	53		
Simple calculation based on readily available market information - Subcontracting a valuation professional (or company)	Negative Ranks	7[g]	10,71	75,00
	Positive Ranks	13[h]	10,38	135,00
	Ties	32[i]		
	Total	52		
Professional support from an auditor - Subcontracting a valuation professional (or company)	Negative Ranks	4[j]	10,88	43,50
	Positive Ranks	18[k]	11,64	209,50
	Ties	30[l]		
	Total	52		
Use of data from database - Elaboration and use of an internal valuation methodology	Negative Ranks	6[m]	5,50	33,00
	Positive Ranks	4[n]	5,50	22,00
	Ties	41[o]		
	Total	51		
Simple calculation based on readily available market information - Elaboration and use of an internal valuation methodology	Negative Ranks	3[p]	4,67	14,00
	Positive Ranks	7[q]	5,86	41,00
	Ties	41[r]		
	Total	51		
Professional support from an auditor - Elaboration and use of an internal valuation methodology	Negative Ranks	4[s]	8,00	32,00
	Positive Ranks	14[t]	9,93	139,00
	Ties	33[u]		
	Total	51		
Simple calculation based on readily available market information - Use of data from database	Negative Ranks	4[v]	6,25	25,00
	Positive Ranks	10[w]	8,00	80,00
	Ties	38[x]		
	Total	52		
Professional support from an auditor - Use of data from database	Negative Ranks	3[y]	9,00	27,00
	Positive Ranks	17[z]	10,76	183,00
	Ties	32[aa]		
	Total	52		
Professional support from an auditor - Simple calculation based on readily available market information	Negative Ranks	4[ab]	6,50	26,00
	Positive Ranks	10[ac]	7,90	79,00
	Ties	39[ad]		
	Total	53		

a. Elaboration and use of an internal valuation methodology < Subcontracting a valuation professional (or company)
b. Elaboration and use of an internal valuation methodology > Subcontracting a valuation professional (or company)
c. Elaboration and use of an internal valuation methodology = Subcontracting a valuation professional (or company)
d. Use of data from database < Subcontracting a valuation professional (or company)
e. Use of data from database > Subcontracting a valuation professional (or company)
f. Use of data from database = Subcontracting a valuation professional (or company)
g. Simple calculation based on readily available market information < Subcontracting a valuation professional (or company)
h. Simple calculation based on readily available market information > Subcontracting a valuation professional (or company)
i. Simple calculation based on readily available market information = Subcontracting a valuation professional (or company)
j. Professional support from an auditor < Subcontracting a valuation professional (or company)

k. Professional support from an auditor > Subcontracting a valuation professional (or company)
l. Professional support from an auditor = Subcontracting a valuation professional (or company)
m.Use of data from database < Elaboration and use of an internal valuation methodology
n. Use of data from database > Elaboration and use of an internal valuation methodology
o. Use of data from database = Elaboration and use of an internal valuation methodology
p. Simple calculation based on readily available market information < Elaboration and use of an internal valuation methodology
q. Simple calculation based on readily available market information > Elaboration and use of an internal valuation methodology
r. Simple calculation based on readily available market information = Elaboration and use of an internal valuation methodology
s. Professional support from an auditor < Elaboration and use of an internal valuation methodology
t. Professional support from an auditor > Elaboration and use of an internal valuation methodology
u. Professional support from an auditor = Elaboration and use of an internal valuation methodology
v. Simple calculation based on readily available market information < Use of data from database
w. Simple calculation based on readily available market information > Use of data from database
x. Simple calculation based on readily available market information = Use of data from database
y. Professional support from an auditor < Use of data from database
z. Professional support from an auditor > Use of data from database
aa. Professional support from an auditor = Use of data from database
ab. Professional support from an auditor < Simple calculation based on readily available market information
ac. Professional support from an auditor > Simple calculation based on readily available market information
ad. Professional support from an auditor = Simple calculation based on readily available market information

Test Statistics[a]

	Internal valuation method – Valuation professional	Data from database- Valuation professional	Simple market calc - Valuation professional	Auditor - Valuation professional	Data from database - Internal valuation method	Simple market calc - Internal valuation method	Auditor - Internal valuation method	Simple market calc - Data from database	Auditor - Data from database	Auditor - Simple market calc
Z	,000[b]	-,400[c]	-1,128[d]	-2,724[d]	-,568[c]	-1,390[d]	-2,357[d]	-1,744[d]	-2,935[d]	-1,681[d]
Asymp. Sig. (2-tailed)	1,000	,689	,259	,006	,570	,165	,018	,081	,003	,093

a. Wilcoxon Signed Ranks Test

b. The sum of negative ranks equals the sum of positive ranks.

c. Based on positive ranks.

d. Based on negative ranks.

Corrected significant level: 0,05/10 = 0,005 (Bonferroni-correction)

Determination of market value based on the asset replacement value

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	38	33,3	74,5	74,5
	2	3	2,6	5,9	80,4
	3	3	2,6	5,9	86,3
	5	4	3,5	7,8	94,1
	6	3	2,6	5,9	100,0
	Total	51	44,7	100,0	
Missing	System	63	55,3		
Total		114	100,0		

Determination of market value based on the market price of a similar asset

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	33	28,9	61,1	61,1
	2	4	3,5	7,4	68,5
	3	2	1,8	3,7	72,2
	4	4	3,5	7,4	79,6
	5	7	6,1	13,0	92,6
	6	4	3,5	7,4	100,0
	Total	54	47,4	100,0	
Missing	System	60	52,6		
Total		114	100,0		

Determination of market value based on the revenue generated by the asset

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	43	37,7	82,7	82,7
	2	3	2,6	5,8	88,5
	4	1	,9	1,9	90,4
	5	2	1,8	3,8	94,2
	6	3	2,6	5,8	100,0
	Total	52	45,6	100,0	
Missing	System	62	54,4		
Total		114	100,0		

Determination of market value based on the combination of the three methods above

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	43	37,7	82,7	82,7
	2	1	,9	1,9	84,6
	3	2	1,8	3,8	88,5
	5	2	1,8	3,8	92,3
	6	4	3,5	7,7	100,0
	Total	52	45,6	100,0	
Missing	System	62	54,4		
Total		114	100,0		

Friedman test

	Mean Rank	Median
Determination of market value based on the asset replacement value	2,53	1,78
Determination of market value based on the market price of a similar asset	2,76	2,08
Determination of market value based on the revenue generated by the asset	2,32	1,47
Determination of market value based on the combination of the three methods above	2,38	1,55

Test Statistics[a]

N	51
Chi-Square	16,297
df	3
Asymp. Sig.	,001

a. Friedman Test

Wilcoxon signed-rank test

		N	Mean Rank	Sum of Ranks
Determination of market value based on the market price of a similar asset - Determination of market value based on the asset replacement value	Negative Ranks	2[a]	6,75	13,50
	Positive Ranks	8[b]	5,19	41,50
	Ties	41[c]		
	Total	51		
Determination of market value based on the revenue generated by the asset - Determination of market value based on the asset replacement value	Negative Ranks	7[d]	5,57	39,00
	Positive Ranks	2[e]	3,00	6,00
	Ties	42[f]		
	Total	51		
Determination of market value based on the combination of the three methods above - Determination of market value based on the asset replacement value	Negative Ranks	6[g]	4,83	29,00
	Positive Ranks	2[h]	3,50	7,00
	Ties	43[i]		
	Total	51		
Determination of market value based on the revenue generated by the asset - Determination of market value based on the market price of a similar asset	Negative Ranks	12[j]	6,50	78,00
	Positive Ranks	0[k]	,00	,00
	Ties	40[l]		
	Total	52		
Determination of market value based on the combination of the three methods above - Determination of market value based on the market price of a similar asset	Negative Ranks	11[m]	7,73	85,00
	Positive Ranks	2[n]	3,00	6,00
	Ties	39[o]		
	Total	52		
Determination of market value based on the combination of the three methods above - Determination of market value based on the revenue generated by the asset	Negative Ranks	2[p]	3,00	6,00
	Positive Ranks	3[q]	3,00	9,00
	Ties	47[r]		
	Total	52		

a. Determination of market value based on the market price of a similar asset < Determination of market value based on the asset replacement value
b. Determination of market value based on the market price of a similar asset > Determination of market value based on the asset replacement value
c. Determination of market value based on the market price of a similar asset = Determination of market value based on the asset replacement value
d. Determination of market value based on the revenue generated by the asset < Determination of market value based on the asset replacement value
e. Determination of market value based on the revenue generated by the asset > Determination of market value based on the asset replacement value
f. Determination of market value based on the revenue generated by the asset = Determination of market value based on the asset replacement value
g. Determination of market value based on the combination of the three methods above < Determination of market value based on the asset replacement value
h. Determination of market value based on the combination of the three methods above > Determination of market value based on the asset replacement value
i. Determination of market value based on the combination of the three methods above = Determination of market value based on the asset replacement value
j. Determination of market value based on the revenue generated by the asset < Determination of market value based on the market price of a similar asset
k. Determination of market value based on the revenue generated by the asset > Determination of market value based on the market price of a similar asset

l. Determination of market value based on the revenue generated by the asset = Determination of market value based on the market price of a similar asset
m. Determination of market value based on the combination of the three methods above < Determination of market value based on the market price of a similar asset
n. Determination of market value based on the combination of the three methods above > Determination of market value based on the market price of a similar asset
o. Determination of market value based on the combination of the three methods above = Determination of market value based on the market price of a similar asset
p. Determination of market value based on the combination of the three methods above < Determination of market value based on the revenue generated by the asset
q. Determination of market value based on the combination of the three methods above > Determination of market value based on the revenue generated by the asset
r. Determination of market value based on the combination of the three methods above = Determination of market value based on the revenue generated by the asset

Test Statistics[a]

	Price of a similar asset – Replacement value of asset	Revenue generated by asset - Replacement value of asset	Combination of methods - Replacement value of asset	Revenue generated by asset - Price of a similar asset	Combination of methods - Price of a similar asset	Combination of methods - Revenue generated by asset
Z	-1,434[b]	-1,992[c]	-1,556[c]	-3,097[c]	-2,788[c]	-,412[b]
Asymp. Sig. (2-tailed)	,152	,046	,120	,002	,005	,680

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

c. Based on positive ranks.

Corrected significant level: 0,05/10 = 0,005 (Bonferroni-correction)

Annex 7 – The statistics of Hypothesis H4

The statistics of Subhypothesis H4/a)

Statistics of AB3 database

Question 12: Assignment of assertions concerning disclosure

The notes only disclose any information and data concerning intangible assets as stipulated by the legislation

		Frequency	Percent	Valid Percent	Cumulative Percent
	1	7	6,1	6,5	6,5
	2	2	1,8	1,9	8,4
	3	9	7,9	8,4	16,8
Valid	4	5	4,4	4,7	21,5
	5	9	7,9	8,4	29,9
	6	75	65,8	70,1	100,0
	Total	107	93,9	100,0	
Missing	System	7	6,1		
Total		114	100,0		

The company uses some method to manage and measure intellectual capital

		Frequency	Percent	Valid Percent	Cumulative Percent
	1	49	43,0	75,4	75,4
	2	6	5,3	9,2	84,6
	3	5	4,4	7,7	92,3
Valid	4	2	1,8	3,1	95,4
	5	1	,9	1,5	96,9
	6	2	1,8	3,1	100,0
	Total	65	57,0	100,0	
	7	32	28,1		
Missing	System	17	14,9		
	Total	49	43,0		
Total		114	100,0		

The company prepares an analysis/statement of its intellectual capital for external use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	51	44,7	82,3	82,3
	2	5	4,4	8,1	90,3
	3	3	2,6	4,8	95,2
	5	2	1,8	3,2	98,4
	6	1	,9	1,6	100,0
	Total	62	54,4	100,0	
Missing	7	33	28,9		
	System	19	16,7		
	Total	52	45,6		
Total		114	100,0		

The company prepares an analysis/statement of its intellectual capital for internal use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	45	39,5	70,3	70,3
	2	7	6,1	10,9	81,3
	3	6	5,3	9,4	90,6
	4	2	1,8	3,1	93,8
	5	3	2,6	4,7	98,4
	6	1	,9	1,6	100,0
	Total	64	56,1	100,0	
Missing	7	31	27,2		
	System	19	16,7		
	Total	50	43,9		
Total		114	100,0		

Question 13: Why did the notes only disclose information and data concerning intangible assets to the extent of the statutory minimum (if applicable)?

The company management considered it risky to disclose information exceeding the statutory minimum

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	52	45,6	65,8	65,8
	2	4	3,5	5,1	70,9
	3	5	4,4	6,3	77,2
	4	1	,9	1,3	78,5
	5	7	6,1	8,9	87,3
	6	10	8,8	12,7	100,0
	Total	79	69,3	100,0	
Missing	System	35	30,7		
Total		114	100,0		

The company management considered it unimportant to disclose information exceeding the statutory minimum

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	23	20,2	27,7	27,7
	2	2	1,8	2,4	30,1
	3	6	5,3	7,2	37,3
	4	5	4,4	6,0	43,4
	5	8	7,0	9,6	53,0
	6	39	34,2	47,0	100,0
	Total	83	72,8	100,0	
Missing	System	31	27,2		
Total		114	100,0		

Based on the cost/benefit principle, it was unjustified to disclose additional information concerning intangible assets

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	48	42,1	62,3	62,3
	2	4	3,5	5,2	67,5
	3	4	3,5	5,2	72,7
	4	2	1,8	2,6	75,3
	5	4	3,5	5,2	80,5
	6	15	13,2	19,5	100,0
	Total	77	67,5	100,0	
Missing	System	37	32,5		
Total		114	100,0		

No additional information is available, because apart from the accounting procedures required by law, the company does not perform additional analysis and valuation regarding the intangible assets

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	25	21,9	30,1	30,1
	2	2	1,8	2,4	32,5
	3	7	6,1	8,4	41,0
	4	3	2,6	3,6	44,6
	5	12	10,5	14,5	59,0
	6	34	29,8	41,0	100,0
	Total	83	72,8	100,0	
Missing	System	31	27,2		
Total		114	100,0		

No (known) reason

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	47	41,2	70,1	70,1
	2	3	2,6	4,5	74,6
	3	2	1,8	3,0	77,6
	5	4	3,5	6,0	83,6
	6	11	9,6	16,4	100,0
	Total	67	58,8	100,0	
Missing	System	47	41,2		
Total		114	100,0		

Friedman test

	Mean Rank	Median
The company management considered it risky to disclose information exceeding the statutory minimum	2,71	1,00
The company management considered it unimportant to disclose information exceeding the statutory minimum	3,70	4,00
Based on the cost/benefit principle, it was unjustified to disclose additional information concerning intangible assets	2,60	1,00
No additional information is available, because apart from the accounting procedures required by law, the company does not perform additional analysis and valuation regarding the intangible assets	3,49	4,00
No (known) reason	2,50	1,00

Test Statistics[a]

N	57
Chi-Square	48,090
df	4
Asymp. Sig.	,000

a. Friedman Test

Question 16: Assignment of assertions concerning additional information about intangible assets exceeding the statutory minimum

Disclosure of additional information concerning intangible assets exceeding the statutory minimum is useful for market players

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	16	14,0	18,8	18,8
	2	11	9,6	12,9	31,8
	3	17	14,9	20,0	51,8
	4	20	17,5	23,5	75,3
	5	8	7,0	9,4	84,7
	6	13	11,4	15,3	100,0
	Total	85	74,6	100,0	
Missing	System	29	25,4		
Total		114	100,0		

Disclosure of additional information concerning intangible assets exceeding the statutory minimum is risky for the company

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	27	23,7	32,5	32,5
	2	9	7,9	10,8	43,4
	3	22	19,3	26,5	69,9
	4	11	9,6	13,3	83,1
	5	6	5,3	7,2	90,4
	6	8	7,0	9,6	100,0
	Total	83	72,8	100,0	
Missing	System	31	27,2		
Total		114	100,0		

Generation of additional information concerning intangible assets exceeding the statutory minimum is difficult and costly

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	12	10,5	15,2	15,2
	2	5	4,4	6,3	21,5
	3	20	17,5	25,3	46,8
	4	12	10,5	15,2	62,0
	5	8	7,0	10,1	72,2
	6	22	19,3	27,8	100,0
	Total	79	69,3	100,0	
Missing	System	35	30,7		
Total		114	100,0		

Generation of additional information concerning intangible assets exceeding the statutory minimum is not important

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	22	19,3	26,8	26,8
	2	6	5,3	7,3	34,1
	3	20	17,5	24,4	58,5
	4	11	9,6	13,4	72,0
	5	7	6,1	8,5	80,5
	6	16	14,0	19,5	100,0
	Total	82	71,9	100,0	
Missing	System	32	28,1		
Total		114	100,0		

Disclosure of additional information concerning intangible assets exceeding the statutory minimum is not important

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	17	14,9	20,5	20,5
	2	7	6,1	8,4	28,9
	3	17	14,9	20,5	49,4
	4	12	10,5	14,5	63,9
	5	9	7,9	10,8	74,7
	6	21	18,4	25,3	100,0
	Total	83	72,8	100,0	
Missing	System	31	27,2		
Total		114	100,0		

Friedman test

	Mean Rank	Median
Disclosure of additional information concerning intangible assets exceeding the statutory minimum is useful for market players	2,93	3,00
Disclosure of additional information concerning intangible assets exceeding the statutory minimum is risky for the company	2,54	3,00
Generation of additional information concerning intangible assets exceeding the statutory minimum is difficult and costly	3,36	4,00
Generation of additional information concerning intangible assets exceeding the statutory minimum is not important	2,97	3,00
Disclosure of additional information concerning intangible assets exceeding the statutory minimum is not important	3,20	3,00

Test Statistics[a]

N	75
Chi-Square	16,996
df	4
Asymp. Sig.	,002

a. Friedman Test

The statistics of Subhypothesis H4/b)

Statistics of AB3 database

Question 14: How frequently was mandatory and voluntary information concerning intangible assets disclosed in the notes to the financial statements of entities belonging to the following categories based on their turnover?

Mandatory disclosure based on turnover

Entities with turnover under mHUF 200

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	12	11,7	17,1	17,1
	2	9	8,7	12,9	30,0
	3	6	5,8	8,6	38,6
	4	7	6,8	10,0	48,6
	5	4	3,9	5,7	54,3
	6	32	31,1	45,7	100,0
	Total	70	68,0	100,0	
Missing	7	14	13,6		
	System	19	18,4		
	Total	33	32,0		
Total		103	100,0		

Entities with turnover between mHUF 200-500

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	8	7,8	16,7	16,7
	2	4	3,9	8,3	25,0
	3	4	3,9	8,3	33,3
	4	2	1,9	4,2	37,5
	5	5	4,9	10,4	47,9
	6	25	24,3	52,1	100,0
	Total	48	46,6	100,0	
Missing	7	29	28,2		
	System	26	25,2		
	Total	55	53,4		
Total		103	100,0		

Entities with turnover between mHUF 500-1000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	5	4,9	15,6	15,6
	2	2	1,9	6,3	21,9
	3	1	1,0	3,1	25,0
	4	4	3,9	12,5	37,5
	5	2	1,9	6,3	43,8
	6	18	17,5	56,3	100,0
	Total	32	31,1	100,0	
Missing	7	39	37,9		
	System	32	31,1		
	Total	71	68,9		
Total		103	100,0		

Entities with turnover above mHUF 1000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	7	6,8	17,5	17,5
	2	1	1,0	2,5	20,0
	3	2	1,9	5,0	25,0
	4	2	1,9	5,0	30,0
	5	5	4,9	12,5	42,5
	6	23	22,3	57,5	100,0
	Total	40	38,8	100,0	
Missing	7	38	36,9		
	System	25	24,3		
	Total	63	61,2		
Total		103	100,0		

Friedman test

	Mean Rank	Median
Entities with turnover under mHUF 200	2,25	2,00
Entities with turnover between mHUF 200-500	2,19	2,50
Entities with turnover between mHUF 500-1000	2,59	4,00
Entities with turnover above mHUF 1000	2,97	5,00

Test Statistics[a]

N	16
Chi-Square	11,264
df	3
Asymp. Sig.	,010

a. Friedman Test

Voluntary disclosure based on turnover

Entities with turnover under mHUF 200

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	43	41,7	75,4	75,4
	2	7	6,8	12,3	87,7
	3	1	1,0	1,8	89,5
	4	1	1,0	1,8	91,2
	5	2	1,9	3,5	94,7
	6	3	2,9	5,3	100,0
	Total	57	55,3	100,0	
Missing	7	13	12,6		
	System	33	32,0		
	Total	46	44,7		
Total		103	100,0		

Entities with turnover between mHUF 200-500

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	33	32,0	75,0	75,0
	2	2	1,9	4,5	79,5
	3	2	1,9	4,5	84,1
	4	3	2,9	6,8	90,9
	5	2	1,9	4,5	95,5
	6	2	1,9	4,5	100,0
	Total	44	42,7	100,0	
Missing	7	27	26,2		
	System	32	31,1		
	Total	59	57,3		
Total		103	100,0		

Entities with turnover between mHUF 500-1000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	20	19,4	66,7	66,7
	2	2	1,9	6,7	73,3
	4	5	4,9	16,7	90,0
	5	1	1,0	3,3	93,3
	6	2	1,9	6,7	100,0
	Total	30	29,1	100,0	
Missing	7	38	36,9		
	System	35	34,0		
	Total	73	70,9		
Total		103	100,0		

Entities with turnover above mHUF 1000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	25	24,3	71,4	71,4
	2	2	1,9	5,7	77,1
	3	1	1,0	2,9	80,0
	4	4	3,9	11,4	91,4
	5	2	1,9	5,7	97,1
	6	1	1,0	2,9	100,0
	Total	35	34,0	100,0	
	7	36	35,0		
Missing	System	32	31,1		
	Total	68	66,0		
Total		103	100,0		

Friedman test

	Mean Rank	Median
Entities with turnover under mHUF 200	2,26	1,00
Entities with turnover between mHUF 200-500	2,38	1,00
Entities with turnover between mHUF 500-1000	2,62	1,00
Entities with turnover above mHUF 1000	2,74	1,00

Test Statistics[a]

N	17
Chi-Square	6,000
df	3
Asymp. Sig.	,112

a. Friedman Test

Question 15: How frequently was mandatory and voluntary information concerning intangible assets disclosed in the notes to the financial statements of entities belonging to the following categories based on their balance sheet total?

Mandatory disclosure based on balance sheet total

Entities with balance sheet total under mHUF 100

		Frequency	Percent	Valid Percent	Cumulative Percent
	1	12	11,3	16,9	16,9
	2	10	9,4	14,1	31,0
	3	5	4,7	7,0	38,0
Valid	4	6	5,7	8,5	46,5
	5	5	4,7	7,0	53,5
	6	33	31,1	46,5	100,0
	Total	71	67,0	100,0	
	7	13	12,3		
Missing	System	22	20,8		
	Total	35	33,0		
Total		106	100,0		

Entities with balance sheet total between mHUF 100-500

		Frequency	Percent	Valid Percent	Cumulative Percent
	1	9	8,5	17,3	17,3
	2	6	5,7	11,5	28,8
	3	3	2,8	5,8	34,6
Valid	4	3	2,8	5,8	40,4
	5	6	5,7	11,5	51,9
	6	25	23,6	48,1	100,0
	Total	52	49,1	100,0	
	7	26	24,5		
Missing	System	28	26,4		
	Total	54	50,9		
Total		106	100,0		

Entities with balance sheet total between mHUF 500-1000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	7	6,6	18,9	18,9
	2	3	2,8	8,1	27,0
	4	3	2,8	8,1	35,1
	5	4	3,8	10,8	45,9
	6	20	18,9	54,1	100,0
	Total	37	34,9	100,0	
Missing	7	35	33,0		
	System	34	32,1		
	Total	69	65,1		
Total		106	100,0		

Entities with balance sheet total above mHUF 1000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	6	5,7	17,1	17,1
	3	2	1,9	5,7	22,9
	4	2	1,9	5,7	28,6
	5	5	4,7	14,3	42,9
	6	20	18,9	57,1	100,0
	Total	35	33,0	100,0	
Missing	7	44	41,5		
	System	27	25,5		
	Total	71	67,0		
Total		106	100,0		

Friedman test

	Mean Rank	Median
Entities with balance sheet total under mHUF 100	2,22	2,50
Entities with balance sheet total between mHUF 100-500	2,28	3,00
Entities with balance sheet total between mHUF 500-1000	2,64	4,50
Entities with balance sheet total above mHUF 1000	2,86	5,00

Test Statistics[a]

N	18
Chi-Square	10,132
df	3
Asymp. Sig.	,017

a. Friedman Test

Voluntary disclosure based on balance sheet total

Entities with balance sheet total under mHUF 100

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	41	38,7	71,9	71,9
	2	9	8,5	15,8	87,7
	3	1	,9	1,8	89,5
	4	2	1,9	3,5	93,0
	5	1	,9	1,8	94,7
	6	3	2,8	5,3	100,0
	Total	57	53,8	100,0	
Missing	7	13	12,3		
	System	36	34,0		
	Total	49	46,2		
Total		106	100,0		

Entities with balance sheet total between mHUF 100-500

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	33	31,1	70,2	70,2
	2	3	2,8	6,4	76,6
	3	3	2,8	6,4	83,0
	4	4	3,8	8,5	91,5
	5	1	,9	2,1	93,6
	6	3	2,8	6,4	100,0
	Total	47	44,3	100,0	
Missing	7	25	23,6		
	System	34	32,1		
	Total	59	55,7		
Total		106	100,0		

Entities with balance sheet total between mHUF 500-1000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	25	23,6	69,4	69,4
	2	1	,9	2,8	72,2
	3	2	1,9	5,6	77,8
	4	5	4,7	13,9	91,7
	5	1	,9	2,8	94,4
	6	2	1,9	5,6	100,0
	Total	36	34,0	100,0	
Missing	7	33	31,1		
	System	37	34,9		
	Total	70	66,0		
Total		106	100,0		

Entities with balance sheet total above mHUF 1000

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	23	21,7	71,9	71,9
	2	1	,9	3,1	75,0
	3	1	,9	3,1	78,1
	4	3	2,8	9,4	87,5
	5	3	2,8	9,4	96,9
	6	1	,9	3,1	100,0
	Total	32	30,2	100,0	
Missing	7	38	35,8		
	System	36	34,0		
	Total	74	69,8		
Total		106	100,0		

Friedman test

	Mean Rank	Median
Entities with balance sheet total under mHUF 100	2,18	1,00
Entities with balance sheet total between mHUF 100-500	2,43	1,00
Entities with balance sheet total between mHUF 500-1000	2,60	1,00
Entities with balance sheet total above mHUF 1000	2,80	1,00

Test Statistics[a]

N	20
Chi-Square	12,366
df	3
Asymp. Sig.	,006

a. Friedman Test

References

Abdulwahab Khairó Ádám [1999]: Tudás alapú gazdaságok összehasonlítása. *Ipari Szemle*. 19. évf. 6. szám pp. 46-48

Ahlgren, Mikael [2011]: What Is Intellectual Capital. *UNLV Gaming Research & Review Journal*. Vol. 15, Iss. 2 pp. 17-21

Andriessen, Daniel [2004]: IC valuation and measurement: classifying the state of the art. *Journal of Intellectual Capital*. Vol. 5, Iss. 2 pp. 230-242 DOI: http://dx.doi.org/10.1108/14691930410533669

Andrikopoulos Andreas [2010]: Accounting for Intellectual Capital: On the Elusive Path from Theory to Practice. *Knowledge and Process Management*. Vol. 17, Iss. 4 pp. 180-187 DOI: http://dx.doi.org/10.1002/kpm.355

Austin, Lloyd [2007]: Accounting for intangible assets. *University of Auckland Business Review*. Vol. 9, Iss.1 pp. 63-72

Balázs et al. [2006]: *Az IFRS-ek rendszere. A Nemzetközi Pénzügyi Beszámolási Standardok rendszere*. Magyar Könyvvizsgálói Kamara Oktatási Központ Kft., Budapest

Baricz Rezső [1990]: *Mérlegtan*. Aula Kiadó, Budapest

Baricz Rezső – Róth József [2002]: *Könyvviteltan*. Aula Kiadó Kft., Budapest

Basu, Sudipta – Waymire, Gregory [2008]: Has the importance of intangibles really grown? And if so, why? *Accounting and Business Research*. Vol. 38, Iss. 3 International Accounting Policy Forum. pp. 171-190 DOI: http://dx.doi.org/10.1080/00014788.2008.9663331

Beattie, Vivien – Pratt, Ken [2002]: *Voluntary annual report disclosures: What users want?* Institute of Chartered Accountants of Scotland, Edinburgh

Bíróné Zeller Judit – Bohus Zoltánné – Fekete Zsuzsa – dr. Galambos Péter – Stricca Lilla – Szmicsek Sándor [2008]: A 2007. évi beszámolók könyvvizsgálata. *Számvitel-Adó-Könyvvizsgálat*. 50. évf. 5. szám pp. 208-216

Blair, Margaret M. – Wallman, Steven M. H. (2001): *Unseen Wealth: Report of the Brookings Task Force on Intangibles*. Brookings Institution Press

Bontis, Nick [1998]: Intellectual capital: an exploratory study that develops measures and models. *Management Decision*. Vol. 36, Iss. 2 pp. 63-76 DOI: http://dx.doi.org/10.1108/00251749810204142

Bontis, Nick [1999]: Managing organizational knowledge by diagnosing intellectual capital: framing and advancing the state of the field. *International Journal of Technology Management*. Vol. 18, Nos. 5/6/7/8, pp. 433-463 DOI: http://dx.doi.org/10.1504/ijtm.1999.002780

Bontis, Nick [2001]: Assessing knowledge assets: a review of the models used to measure intellectual capital. *International Journal of Management Reviews*. Vol. 3, Iss. 1 pp. 41-60 DOI: http://dx.doi.org/10.1111/1468-2370.00053

Boros Judit – Rakó Ágnes [2010]: KPMG-felmérés a tőzsdén jegyzett magyar társaságok körében – 2009. *Számvitel-Adó-Könyvvizsgálat*. 52. évf. 6. szám

Boross Zoltán – Gyökér Irén [1999]: Kísérlet a szellemi tőke értékének meghatározására. *Gazdaság, vállalkozás, vezetés*. 2. szám pp. 15-18

Bosnyák János [2003]: *Számviteli értékelési eljárások hatása a vállalkozások vagyoni, jövedelmi és pénzügyi helyzetére*. Doktori értekezés. Budapesti Közgazdaságtudományi és Államigazgatási Egyetem

Bőgel György [1998]: A vagyon esténként hazamegy. *Vezetéstudomány*. 29. évf. 1. szám pp. 22-27

Brand Finance [2009]: *Global Intangible Finance Tracker 2009. An annual review of the world's intangible value*
http://doc.mbalib.com/view/115d0dde8b21b82c256d21834cdb026a.html
(Letöltés: 2012. szeptember 13.)

Brooking Annie [1996]: *Intellectual Capital: Core Asset for the Third Millenium Enterprise.* International Thomson Business Press: London

Brown, Stephen – Lo, Kin – Lys, Thomas [1999]: Use of R2 in accounting research: measuring changes in value relevance over the last four decades. *Journal of Accounting and Economics*. Vol. 28, Iss. 2 pp. 83-115 DOI: http://dx.doi.org/10.1016/s0165-4101(99)00023-3

Core, John E. – Guay, Wayne R. – Van Buskirk Andrew [2003]: Market Valuations in the New Economy: An Investigation of What Has Changed. *Journal of Accounting and Economics*. Vol. 34, Iss. 1-3 pp. 43-67 DOI: http://dx.doi.org/10.1016/s0165-4101(02)00087-3

Czoboly Gergely [2009]: A szellemi vagyon értékelése és értékbecslésének módszerei. *Infokommunikáció és jog*. 6. évf. 6. szám pp. 233-240

Dammak, Saida – Triki, Mohamed – Boujelbene, Younes [2010]: Towards a measurement scale for the voluntary disclosure of the intellectual capital. *Journal of Advanced Research in Management*. Vol. 1, Iss. 1 pp. 30-44

Danish Ministry of Science [2003]: *Intellectual Capital Statements – The New Guideline*. Denmark

Danthine, Jean-Pierre Jin Xiangrong [2007]: Intangible Capital, Corporate Valuation and Asset Pricing. *Economic Theory*. Vol. 32, Iss. 1 pp. 157-177 DOI: http://dx.doi.org/10.1007/s00199-006-0176-5

Deák István [2008]: A számvitel vagyonfelfogásáról. *Számvitel-Adó-Könyvvizsgálat*. 50. évf. 12. szám pp. 497-505

DiPiazza, Samuel A. et al [2006]: *Global Capital Markets and the Global Economy: A Vision from the CEOs of the International Audit Networks*.

http://www.cybsoc.org/CEO_Vision.pdf (Letöltés: 2012. október 10.)

Dosi, Giovanni [1988]: Sources, Procedures and Microeconomic Effects of Innovation. *Journal of Economic Literature*. Vol. 26 pp. 1120-1171

Drucker, Peter F. [1993]: *Post-Capitalist Society*. HarperCollins Publishers. New York

Eccles, Robert G. [1991]: The Performance Measurement Manifesto. *Harvard Business Review*. Vol. 69, Iss. 1 pp. 131-137

Eccles, Robert G. et al. [2001]: *The Value Reporting Revolution: Moving Beyond the Earnings Game*. New York, John Wiley and Sons

Edvinsson, Leif [1997]: Developing Intellectual Capital at Skandia. *Long Range Planning*. Vol. 30, Iss. 4 pp. 366-373 DOI: http://dx.doi.org/10.1016/s0024-6301(97)00016-2

Edvinsson, Leif – Malone, Michael Shawn [1997]: *Intellectual Capital: Realizing Your Company's True Value by Finding Its Hidden Brainpower*. HarperCollins, New York

Edvinsson Leif – Sullivan Patrick [1996]: Developing a Model for Managing Intellectual Capital. *European Management Journal*. Vol. 14, Iss. 4 pp. 356-364 DOI: http://dx.doi.org/10.1016/0263-2373(96)00022-9

Eperjes Ferenc [1999]: A szellemi tőkéről. *Számvitel Adó Könyvvizsgálat*. Január pp. 19-20

Ernst & Young [2009]: *Acquisition Accounting: What's Next for You*
http://www.ey.com/Publication/vwLUAssets/Allokering_av_merverdier_ved_opp.kj%C3%B8p./$FILE/TAS_Acquisition_accounting_Whats_next_for_you.pdf
(Letöltés: 2012. szeptember 2.)

Fama, Eugene F. [1970]: Efficient capital markets: a review of theory and empirical work. *Journal of Finance*. Vol. 25, Iss. 2 pp. 383-417 DOI: http://dx.doi.org/10.2307/2325488

Ferrari, Mascia – Montanari, Stefano [2010]: The IAS/IFRS application on the intangible assets of non-listed companies. *Journal of Modern Accounting and Auditing*. Vol. 6, Iss. 5 pp.1-21

Foster, Benjamin P. – Fletcher, Robin – Stout, William D. [2003]: Valuing Intangible Assets. *CPA Journal*. Vol. 73, Iss. 10 pp. 50-54

Fraser, Ian – Tarbert, Heather – Tee, Kai Hong [2009]: Do the financial statements of intangible-intensive companies hold less information content for investors? *Applied Financial Economics*. 19 pp. 1433-1438 DOI: http://dx.doi.org/10.1080/09603100902902212

Graham Benjamin, Meredith Spencer [1937]: *The Interpretation of Financial Statements*. New York. NY: Harper and Row Publishers, Inc.

Guo, Re-Jin – Baruch, Lev – Zhou, Nan [2004]: Competitive Costs of Disclosure by Biotech IPOs. *Journal of Accounting Research*. Vol. 42, Iss. 2 pp. 319-355 DOI: http://dx.doi.org/10.1111/j.1475-679x.2004.00140.x

Gyökér Irén [2004]: A vállalat szellemi tőkéje – számolatlan vagyon. *Harvard Business Manager*. 6. évf. 6. szám pp. 1419-2519

Heiens, Richard A. – Leach, Robert T. – McGrath, Leanne C. [2007]: The Contribution of Intangible Assets and Expenditures to Shareholder Value. *Journal of Strategic Marketing*. Vol. 15, Iss. 2/3 pp. 149-159 DOI: http://dx.doi.org/10.1080/09652540701319011

Hendriksen Eldon S. – Van Breda Michael F. [1992]: *Accounting theory*. Irwin. Pennsylvania State University

Hoegh-Krohn, Nils E. Joachim – Knivsfla, Kjell Henry [2000]: Accounting for Intangible Assets in Scandinavia, the UK, the US, and by the IASC: Challenges and a Solution. *The International Journal of Accounting*. Vol. 35, Iss. 2, pp. 243-265 DOI: http://dx.doi.org/10.1016/s0020-7063(00)00048-0

Holmen, Jay [2005]: Intellectual Capital Reporting. *Management Accounting Quarterly*. Vol. 6, Iss. 4, pp. 1-9

Howrey Simon Arnold & White [2002]: *A Survey of Investor Attitudes on IP http://www.pdfio.com/k-1445543.html (Letöltés: 2012. október 24.)*

IASB [2007]: *Initial Accounting for Internally Generated Intangible Assets*. International Accounting Standards Board, London

ICAEW [1998]: *Corporate Governance: The 21st Century Annual Report*. The Institute of Chartered Accountants in England and Wales. Moorgate Place, London

Jennings, Ross – Thompson II, Robert B. [1996]: Accounting for Intangibles in the United States. *Issues in Accounting Education*. Vol. 11, Iss. 2 pp. 491-495

Juhász Péter [2004a]: A szellemi tőke értékelési problémái. *Hitelintézeti Szemle*. 3. évf. 5. szám pp. 59-82

Juhász Péter [2004b]: *Az üzleti és könyv szerinti érték eltérésének magyarázata – Vállalatok mérlegen kívüli tételeinek értékelési problémái*. Doktori értekezés. Budapesti Corvinus Egyetem

Káldos Péter ([2006]a): A szellemivagyon-értékelés elméleti és gyakorlati módszerei. *Iparjogvédelmi és Szerzői Jogi Szemle*. 111. évf. 4. szám pp. 5-26

Kang, Helen – Gray, Sidney J. [2011]: The Content of Voluntary Intangible Asset Disclosures: Evidence from Emerging Market Companies. *Journal of International Accounting Research*. Vol. 10, Iss. 1 pp. 109-125 DOI: http://dx.doi.org/10.2308/jiar.2011.10.1.109

Kaplan, Robert S. – Norton, David P. [1992]: The Balanced Scorecard – Measures That Drive Performance. *Harvard Business Review*. Vol. 70, Iss. 1 pp. 71-79

Khoury, Sam – Daniele, Joe – Germeraad, Paul [2001]: Selection and App.lication of Intellectual Property Valuation Methods In Portfolio Management and Value Extraction. *Les Nouvelles*. September pp. 77-86

Kovács Dániel Máté [2013]: A valós érték számviteli szerepe és alkalmazása a magyar szabályozási környezetben. Doktori értekezés. Budapesti Corvinus Egyetem

Kovács Kármen [2011]: A testetlen eszközök jelentősége a vállalat működésében, pénzügyi teljesítményében és piaci értékelésében. *Vezetéstudomány*. 42. évf. 2. szám pp. 49-57

Laáb Ágnes [1994]: A humán tőke értéke és számbevétele. *Vezetéstudomány*. 25. évf. 12. szám pp. 35-40

Lakatos László Péter [2009]: *A számvitel szabályozása és a pénzügyi kimutatások hasznosságának megítélése*. Doktori értekezés. Budapesti Corvinus Egyetem

Lev, Baruch [2001]: *Intangibles: Management, Measurement, and Reporting*. Washington D.C. Brookings Institution Press

Lev, Baruch [2004]: Az immateriális javakban rejlő versenyelőny fokozása. (fordította: Gyökér István) *Harvard Business Manager*. 6. évf. 6. szám pp. 39-47

Lev, Baruch – Aboody, David [1998]: The Value Relevance of Intangibles: The Case of Software Capitalization. *Journal of Accounting Research*. Vol. 36, Supp.lement pp. 161-191 DOI: http://dx.doi.org/10.2307/2491312

Lev, Baruch – Sougiannis, Theodore [1996]: The capitalization, amortization, and value-relevance of R&D. *Journal of Accounting and Economics*. Vol. 21 pp. 107-138 DOI: http://dx.doi.org/10.1016/0165-4101(95)00410-6

Lev, Baruch – Zarowin, Paul [1999]: The Boundaries of Financial Reporting and How to Extend Them. *Journal of Accounting Research*. Vol. 37, Iss. 2 pp. 353-385 DOI: http://dx.doi.org/10.2307/2491413

Madarasiné Dr. Szirmai Andrea [2009]: A pénzügyi kimutatások valóságtartalma a környezeti információk tükrében. *Számvitel-Adó-Könyvvizsgálat*. 51. évf. 9. szám pp. 389-393

Mádi Csaba [2004]: A szellemi vagyon értékelése. *Magyar Iparjogvédelmi és Szerzői Jogi Egyesület Közleményei*. 45. szám pp. 137-156

Marr, Bernard – Gray, Dina – Neely, Andy [2003]: Why do firms measure their intellectual capital? *Journal of Intellectual Capital*. Vol. 4, Iss. 4 pp. 441-464 DOI: http://dx.doi.org/10.1108/14691930310504509

Matolcsy, Zoltan – Wyatt, Anne [2006]: Capitalized intangibles and financial analysts. *Accounting and Finance*. Vol. 46 pp. 457-479 DOI: http://dx.doi.org/10.1111/j.1467-629x.2006.00177.x

Mayo, Andrew [2001]: *The Human Value of the Enterprise: Valuing People as Assets: Monitoring, Measuring, Managing*. Nicholas Brealey Publishing. London

Meritum [2001]: *Guidelines for Managing and Reporting on Intangibles (Intellectual Capital Report)*
http://www.pnbukh.com/files/pdf_filer/MERITUM_Guidelines.pdf
(Letöltés: 2012. augusztus 31.)

Mohl Gergely [2013]: *A kockázatbecslés elmélete és hazai gyakorlata a könyvvizsgálatban*. Doktori értekezés. Budapesti Corvinus Egyetem

Myers, Stewart C. [1977]: Determinants of Corporate Borrowing. *Journal of Financial Economics*. Vol. 5, Iss. 2 pp. 147-175 DOI: http://dx.doi.org/10.1016/0304-405x(77)90015-0

Nagy Gábor [2009]: Kutatás-fejlesztés számvitele. Számviteli Tanácsadó. 1. évf. 9. szám pp. 2-7

Nobes Christopher W. (Editor) [2001]: *GAAP 2001 – A Survey of National Accounting Rules Benchmarked against International Accounting Standards*. Andersen, BDO, Deloitte Touche Tohmatsu, Ernst & Young, Grant Thornton, KPMG, PricewaterhouseCoopers

OECD statisztikák: *http://stats.oecd.org/Index.aspx?DatasetCode=SNA_TABLE1* (Letöltés ideje: 2012. október 26.)

Olsen, Marc G. – Halliwell, Michael [2007]: Intangible Value: Delineating Between Shades of Grey. *Journal of Accountancy*. Vol. 203, Iss. 5 pp. 66-72

Osman Péter [1991]: Immateriális vagyon, szellemi vagyon. *Vezetéstudomány*. 22. évf. 9. szám pp. 19-25

Penman, Stephen H. [2003]: The Quality of Financial Statements: Perspectives from the Recent Stock Market Bubble. *Accounting Horizons*. Supplement pp. 77-96 DOI: http://dx.doi.org/10.2308/acch.2003.17.s-1.77

Petkov, Dr. Rossen [2011]: Initial identification of internally generated intangible assets in the context of the definitions of an asset and an intangible asset. *Journal of Theoretical Accounting Journal*. Vol. 6, Iss. 2 pp. 1-9

Pike, S. – Roos, G. [2004]: Mathematics and modern business management. *Journal of Intellectual Capital*. Vol. 5, Iss. 2 pp. 243-256 DOI: http://dx.doi.org/10.1108/14691930410533678

Powell, Stephen [2003]: Accounting for intangible assets: current requirements, key players and future directions. *European Accounting Review*. Vol. 12, Iss. 4 pp. 797-811 DOI: http://dx.doi.org/10.1080/09638180310001628473

Quinn, James Brian [1992]. *Intelligent Enterprise*. Free Press, New York

Quinn, James Brian – Paquette, Penny C. [1990]: Technology in Services: Creating Organizational Revolutions. *Sloan Management Review*. Winter pp. 67-78

Reilly Robert F. – Schweihs Robert P. [1998]: *Valuing intangibles assets*. McGraw-Hill. New York

Reizingerné Ducsai Anita [2011]: *Az emissziós jogok kezelése a pénzügyi kimutatásokban*. Doktori értekezés. Budapesti Műszaki és Gazdaságtudományi Egyetem

Riahi-Belkaoui, Ahmed [2004]: *Accounting Theory*. Cengage Learning EMEA

Romer, Paul M. [1990]: Endogenous Technological Change. *Journal of Political Economy*. Vol. 98, Iss. 5 pp. S71-S102 DOI: http://dx.doi.org/10.1086/261725

Roos, Goran – Roos, Johan [1997]: Measuring your Company's Intellectual Performance. *Long Range Planning*. Vol. 30, Iss. 3 pp. 413-426 DOI: http://dx.doi.org/10.1016/s0024-6301(97)90260-0

Roos, Goran – Roos, Johan – Dragonetti, Nicola Carlo – Edvinsson, Leif [1997]: *Intellectual Capital: Navigating in the New Business Landscape*. New York University Press, New York

Róth József – Adorján Csaba – Lukács János – Veit József [2006]: *Számviteli esettanulmányok*. Magyar Könyvvizsgálói Kamara Oktatási Központ, Budapest

Sajtos László – Mitev Ariel [2007]: SPSS kutatási és adatelemzési kézikönyv. Alinea Kiadó, Budapest

Schildbach, Thomas [2006]: IAS/IFRS az EU-ban: Jellemzés és problémák. *Vezetéstudomány*. 37. évf. 1. szám pp. 36-47

Schuetze, Walter P. [1993]: What is an Asset? *Accounting Horizons*, Vol. 7, Iss. 3. pp. 66-70

Schultz, Theodore W. [1981]: *Investing in People: the Economics of Population Quality*. University of California, Berkeley and Los Angeles, CA

Shepherd, Nick A. et al. [2010]: *Unrecognized Intangible Assets: Identification, Management, and Reporting*. Institute of Management Accountants, USA

Shin, Kwanho [1999]: Fluctuating uncertainty and flexibility value. *The Quarterly Review of Economics and Finance*. Vol. 39, Iss. 3 pp. 329-340 DOI: http://dx.doi.org/10.1016/s1062-9769(99)00003-4

Skinner, Douglas J. [2008]: Accounting for intangibles – a critical review of policy recommendations. *Accounting and Business Research*. Vol. 38, Iss. 3 pp. 191-204 DOI: http://dx.doi.org/10.1080/00014788.2008.9663332

Skryme, David [1998]: *Measuring the Value of Knowledge*. Business Intelligence, London

Stewart, Thomas A. [1991]: Brainpower. *Fortune*. Vol. 123, Iss. 11 pp. 44-52

Stewart, Thomas A. [1997]: *Intellectual Capital: The New Wealth of Organization*. Doubleday/Currency, New York

Stolowy, Hervé – Jeny-Cazava, Anne [2001]: International accounting disharmony: the case of intangibles. *Accounting, Auditing & Accountability Journal*. Vol. 14, Iss. 4 pp. 477-497 DOI: http://dx.doi.org/10.1108/09513570110403470

Storey, Reed K. – Storey, Sylvia [1998]: *The Framework of Financial Accounting Standards and Concept*. Norwalk, Conn. FASB

Sullivan, Patrick H. [2000]: *Value-driven Intellectual Capital: How to convert Intangible Corporate Assets into Market Value*. Wiley, New York

Sutton, Tim [2004]: *Corporate Financial Accounting and Reporting*. Pearsons Education

Sveiby, Karl-Erik [1989]: *The Invisible Balance Sheet*. The Konrad Group, Stockholm

Sveiby, Karl-Erik [1996]: *The Intangible Assets Monitor*
http://www.sveiby.com/articles/companymonitor.html (Letöltés: 2012. 08. 21.)

Sveiby, Karl-Erik [1997]: *The New Organizational Wealth: Managing and Measuring Knowledge-Based Assets*. Berrett-Koehler, New York

Sveiby, Karl-Erik [1998]: *Intellectual Capital and Knowledge Management*
http://www.sveiby.com/articles/IntellectualCapital.html (Letöltés: 2012. 08. 21.)

Sveiby, Karl-Erik [2001]: *Methods for Measuring Intangible Assets*
http://www.sveiby.com/articles/IntangibleMethods.htm (Letöltés: 2012. 08. 21.)

Sveiby, Karl-Erik: *The Brief History of ICM Movement*
http://www.sveiby.com/articles/icmmovement.htm (Letöltés: 2012. 08. 21.)

Tóthné Szabó Erzsébet [2010]: A kiegészítő melléklet szerepe a megbízható és valós kép kialakításában. *Számvitel-Adó-Könyvvizsgálat*. 52. évf. 4. szám

Upton, Wayne S. [2001]: *Business and Financial Reporting Challenges from the New Economy*. Financial Accounting Standards Board, Norwalk, Connecticut

Varsányi Judit [1995]: A tudástőke értéke és hasznosítása. *Vezetéstudomány*. 26. évf. 3. szám pp. 5-16

Veblen, Thorstein [1904]: *The theory of business enterprise*. C.Scribner's sons

Vofkori László [2002]: *Gazdasági földrajz*. Sapientia Erdélyi Magyar Tudományegyetem. Scientia Kiadó, Kolozsvár

Webster, Elisabeth [1999]: *The Economics of Intangible Investment*. Edward Elgar Publishing

White, Gerald I. et al. [2003]: *The Analysis and Use of Financial Statements*. John Wiley & Sons. New York

Wyatt, Anne [2001]: Accounting for Intangibles: The Great Divide between Obscurity in Innovation Activities and the Balance Sheet. *The Singapore Economic Review*. Vol. 46, Iss. 1 pp. 83-117

Wyatt, Anne [2005]: Accounting Recognition of Intangible Assets: Theory and Evidence on Economic Determinants. *The Accounting Review*. Vol. 80, Iss. 3 pp. 967-1003 DOI: http://dx.doi.org/10.2308/accr.2005.80.3.967

Hungarian laws

Act C of 2000 on Accounting Act

Act CXXXIV of 2004 on Research and Development and Technological Innovation

IFRS (International Financial Reporting Standards)

The Conceptual Framework for Financial Reporting

IAS 1	Presentation of Financial Statements
IAS 36	Impairment of Assets
IAS 38	Intangible Assets
IFRS 3	Business Combinations

US GAAP

SFAS Co. St. No. 5	Recognition and Measurement in Financial Statements of Business Enterprises
SFAS Co. St. No. 6	Elements of Financial Statements
SFAS Co. St. No. 8	Conceptual Framework for Financial Reporting
SFAS 2	Accounting for Research and Development Costs
SFAS 86	Accounting for the Costs of Computer Software to Be Sold, Leased, or Otherwise Marketed
SFAS 142	Goodwill and Other Intangible Assets
SFAS 144	Accounting for the Impairment or Disposal of Long-Lived Assets

Publications of the Author in the Field of the Dissertation

Dr. Saxné Dr. Andor Ágnes [2013]: Immateriális javak a számviteli gyakorlatban. *Számvitel-Adó-Könyvvizsgálat*. 12. szám. p. 593. www.szak-ma.hu

Dr. Saxné Dr. Andor Ágnes [2012]: Immateriális javak a beszámolóban. *Számvitel-Adó-Könyvvizsgálat*. 11. szám. http://www.szak-ma.hu/files/tanulmany_andor.pdf

Andor Ágnes – Fortvingler Judit – Kardos Péter [2009a]: Tőkeműveletek. *Számviteli Tanácsadó*. 11. szám pp. 2-11

Andor Ágnes [2009b]: A szellemi termékek számvitele. *Számviteli Tanácsadó*. 10. szám pp. 2-12

Andor Ágnes – Újhelyi Beáta [2009c]: Káresemény a számvitelben. *Számviteli Tanácsadó*. 7-8. szám pp. 2-20

Andor Ágnes – Fazekas Dóra [2008a]: A szennyezési jogok kezelése a gazdálkodó szemszögéből: Számviteli kérdések. *Vezetéstudomány*. 3. szám pp. 44-59

Andor Ágnes [2008b]: Az apportált szellemi vagyon értékelése. 60 éves a Közgazdaságtudományi Egyetem. *A Jubileumi Tudományos Konferencia alkalmából készült tanulmányok: Gazdálkodástudományi Kar*. Aula Kiadó. pp. 119-129

Andor Ágnes – Olma Frigyes – Reich András – Újhelyi Beáta [2006]: Fókuszban a know-how II. *Számvitel-Adó-Könyvvizsgálat*. 12. szám pp. 539-541

Andor Ágnes – Olma Frigyes – Reich András – Újhelyi Beáta [2006]: Fókuszban a know-how I. Számvitel-Adó-Könyvvizsgálat. 11. szám pp. 483-488