

ANALYSIS OF THE NOTES ON THE ACCOUNTS OF COMPANIES CARRYING OUT INFORMATION TECHNOLOGY SERVICES

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Abstract: *In the globalized and accelerated world of our time, competition amongst enterprises has become much more intense. In this world, information, knowledge and promptness are of paramount importance for decision-making. This means that challenges can only be met by companies that possess the necessary information and are able to convert it rapidly into organisational knowledge. Annual accounting statements are an important source of information within business relations amongst companies. However, it should be noted that due to their aggregate nature, the necessary information and through that, the necessary knowledge can only be obtained from the two fundamental parts of the annual statements (balance sheet and profit and loss account,) if the third part of the statement (the notes on the account) contains the textual and qualitative information that contributes to the more comprehensive interpretation of the other two parts of the annual statement. Without notes on the accounts, which possess adequate information, effective utilisation of the balance sheet and profit and loss account might be problematic. It is also to be pointed out decision-making based on inadequate knowledge further increases economic risks that are already high. However, annual statements should help reduce risks through more established decision-making. In our research, we examine whether the notes on the accounts of companies include the information, which could help obtain necessary financial knowledge concerning the partner companies. For the analyses, we used the notes on the accounts of companies, which have information-technology services (Hungarian NACE No. 62) as their main line of business. The analyses were carried out by means of various packages of the R statistical system. By means of text mining, we analyse the extent to which the notes on the accounts provide the necessary information that would be indispensable for the proper interpretation of the balance sheet and the profit and loss account. The scope of this information is also regulated by the Accounting Act. In present study, the notes on the accounts of 8,226 companies are analysed. The content of the notes on the accounts is analysed for each type of company and annual statement, looking for correlation between the two aspects and the notes on the accounts.*

Keywords: *information-technology; text mining; information; annual statement.*

JEL Classification: *M41.*

1. Introduction

In the globalized and accelerated world of our time, competition amongst enterprises has become much more intense. In this world, information, knowledge and promptness are of paramount importance for decision-making. Being well informed is a fundamental requirement for a company to function successfully. This means that challenges can only be met by companies that possess the necessary information and are able to convert it rapidly into organisational knowledge. In order for companies to be informed and to be well assessed and evaluated, a reliable and unified information system is required for both the given business and its environment. This requirement is met by the accounting system of companies, which is stipulated by the Act C of 2000 on Accounting. Accounting approached from one side is an internal information system, while observing it from another perspective its main task is to provide information towards external environment in accordance with the legal requirements (Kerezsi, 2017). The Accounting Act defines bookkeeping and reporting obligations of entities to which it applies, the principles to be obligatory enforced during bookkeeping and the assembly of annual accounts, the rules that are built upon these principles, and obligations regarding publication, disclosure and auditing (Böcskei, 2014). These ensure that market participants are provided with reliable information that reflects a realistic image about the wealth situation, assets and liabilities and their changes, financial and profitability situation, and plans of the company. (Musinszki, 2016). It can be seen that the annual accounting statement is an important source of information in business relations between companies. However, it should be noted that due to their aggregate nature, the necessary information and through that the necessary knowledge can only be obtained from the two fundamental parts of the annual statements (balance sheet and profit and loss account) if the third part of the statement (the notes on the account) contains the textual and qualitative information that contributes to the more comprehensive interpretation of the other two part of the annual statement. Without notes on the accounts, which possess adequate information, effective utilisation of the balance sheet and profit and loss account might be problematic. In his study, Kántor (2016) discusses that there are still businesses which introduce certain values of the balance sheet and profit and loss account inadequately (if they do at all), because they are afraid that their competitors might find out certain facts and information about their activity and efforts. However, according to the effective legal provisions, preparation of the notes on the accounts – aside from certain components – is compulsory, and its content in terms of data and information is regulated. Therefore, sufficient time and energy should be dedicated to its elaboration and the publication of relevant information by both the management and the expert(s) carrying out bookkeeping tasks.

The notes on the accounts does not have a legally stipulated structure, similar to that of the balance sheet and profit and loss account, therefore the same structure and content is rather rare to come across. However, it consists of three major parts in every case (Filyó, 2014):

- In the scope of the general part, legal environment (basic data of the entrepreneur: primary activity, company seat, company premises, owners, management, representatives, registered accountant, selected auditor), and major characteristics of the accounting policy (aim and type of the statement,

accounting date, business year, chosen type of balance sheet and profit and loss account; applied appreciation procedures, exchange rate, accounting currency) are introduced.

- The specific part includes indexes describing the wealth, financial and profitability situation (distribution and dynamic ratios), investment chart, details of the changes of own equity, introduction of the occurrence of accruals, and the deduction of the base of corporate income tax.
- The informative part includes the number of employees, the total amount of remuneration payable for the financial year to the executive officers, members of the board of directors and the supervisory board, the amount of advances and loans disbursed, the guarantees given on their behalf, and the total pension liability for the former executive officers, members of the board of directors and supervisory board. This part also includes the situation of possible lawsuits, amount of repurchased stocks and shares, and incomparable data (e.g. if the balance sheet is prepared in different variations in two consecutive business years) and the change of the assessment of assets and liabilities.

It is also to be pointed out that decision-making based on inadequate knowledge further increases economic risks that are already high. However, annual statements should help reduce risks through more established decision-making. In our research, we examine – through the analysis of an economic sector – to what extent the notes on the accounts of companies provide the information, which are absolutely indispensable for the satisfactory interpretation of the balance sheet and profit and loss account.

2. Materials and method

For the analyses, we used the notes on the accounts of companies, which have information-technology services (Hungarian NACE No. 62) as their main line of business. The database includes enterprises, which published an annual statement concerning the year of 2016. This means that the survey involved 11,476 companies, 8,858 of which had notes on the accounts (the rest of the organizations either did not prepare notes on the accounts or were obliged to prepare a statement of micro-enterprises, where notes on the account is not relevant). We managed to process the notes on the accounts of 8,226 (92.87%) of the above companies. The analyses were carried out by means of various packages of the R statistical system. By means of text mining, we analyse the extent to which the notes on the accounts provide the necessary information that would be indispensable for the proper interpretation of the balance sheet and the profit and loss account.

Over the past two decades, text mining has gained more and more interest in both academic areas and in business intelligence applications. Text mining means the ability to acquire useful and novel knowledge, which could influence decision-making of the involved parties through processing large amounts of unstructured text. There is another definition, according to which, text mining is a processing procedure in the course of which a suitable insight into the text can be obtained (Kwartler, 2017). More and more text-like databases are created in computer readable formats that require rapid processing. Text mining is an interdisciplinary research field that utilizes various tools of computer science, linguistics and statistics (Feinerer, 2008).

Every quantitative research, such as science fields dealing with business area, uses statistical methods, which require the gathering of structured information (Munzert et al., 2014). The 'tm' software package of the R statistical system provides an infrastructure that allows users to work efficiently with texts, the related metadata, and to transform texts into structured representations where the necessary statistical methods can finally be applied (Feinerer et al., 2008). The 'tm' package also allows users to process texts of different formats (txt, doc, pdf, csv, etc.). Analysis of the texts intended for examination requires the execution of tasks that may influence the accuracy, validity and findings of the text analysis procedure, as well as the techniques used for the analysis (Welbers et al., 2017).

3. Results

Notes of the accounts of the involved 8,226 enterprises were analysed from the aspect of their type of business and annual statement (Table 1). According to the analysis by business type, it can be established that 195 enterprises did not indicate their type of business in their notes on the accounts, while 70.86% of the involved companies are limited liability companies (Ltd.), 26% are limited partnerships (Lp.) and 7.53% are public limited companies (Plc.) within the sample. In terms of the type of annual statement, 1,056 business entities (12.8%) did not indicate in their notes on the accounts what type of statement they prepared, while 6,432 companies (78.2%) prepared simplified annual statements and 738 companies (9%) prepared normal annual accounts during the analysed period.

Table 1: Number of the analysed notes on the accounts by business type and type of annual statement (unit: pcs.)

Business type	Type of annual statement			
	Not specified	Simplified annual statement	Annual statement	Total
Not specified	45	128	22	195
Lp.	271	1 696	173	2 140
Ltd.	736	4 563	530	5 829
Plc.	4	45	13	62
Total	1 056	6 432	738	8 226

Source: own calculation

Act C of 2000 on Accounting stipulates the notes on the account shall include numeric data and textual information which

- is stipulated by the Accounting Act,
- are required – beyond the information contained by the balance sheet and the profit and loss account – for the reliable and real presentation of the business results of the enterprise in its financial and wealth situation towards the owners, investors and creditors.

The Accounting Act includes but does not classify the information, which must be introduced in the scope of the notes on the accounts. Information regarding the

desired information content of the notes on the accounts and related to certain parts of it are only loosely listed within the Accounting Act. In the case of the annual statement and for the sake of practical utilisation, this information are logical to be classified into three major parts. Thus, the following are distinguished:

- General part, which is mostly intended to serve the better understanding of the data included by the annual statement,
- Informative part, which can be linked to the operation of the enterprise and which supports the better comprehension of the situation of the company,
- Specific part, where the relevant information is linked to the numerical data represented by the balance sheet and profit and loss account and introduces their details and explanations (KÁNTOR, 2016).

Present study deals with demonstrating the appearance of the information belonging to the general part within the notes on the account, in the case of companies, which have information technology services as their primary line of business (Table 2) in total and broken down by the type of annual statement. As mentioned above, The Accounting Act does not compulsorily stipulate for business entities to include a so-called "General part" in their notes on the accounts, but it does require them to include information, which serve the better understanding of data included by the annual statement. We examined how many of the analysed business entities still used the term "general part" in their notes on the accounts. Within the analysed sample, 66.95% did not include, and 33.05% (2719 pcs.) included separate general parts within the notes on the accounts. This is not necessarily a problem, since as discussed above, this is not a compulsory component of the notes on the accounts. Additional stipulations of the Accounting Act are as follows:

- The notes on the accounts shall include the name of the enterprise, the exact address and contact information of its company seat and website if the enterprise publishes its annual statement and the related business report online as well. 5,926 of 8,226 organizations indicated their exact company seat address, which is 72% of the sample. The name of the website was included in 298 notes on the accounts, but there is no information about the enterprises, which publish their annual statements through their website as well.
- The entrepreneur is required to introduce the actual wealth, financial and income situation of the company as well as the composition of assets and liabilities
 - Information regarding the wealth situation was indicated by 3,186 business entities in their notes on the accounts, which is 38.7% of the sample.
 - Information regarding the financial situation was presented by 4,209 enterprises in their notes on the accounts, which represents 51.16%.
 - The profitability situation was detailed by 4,583 enterprises, which is 55.71% of the sample.
- We found the composition of assets in 769, while that of liabilities in 858 notes on the accounts.

Table 2: Appearance of elements belonging to the general part within the analysed notes on the accounts (pcs.)

Searched term	Total		Type of statement					
			Not specified		Simplified annual statement		Annual statement	
Analysed companies	8 226	100%	1056	100%	6 432	100%	738	100%
General part	2 719	33%	145	14%	2 337	36%	237	32%
Company seat	5 926	72%	521	49%	4 889	76%	516	70%
Website	298	4%	8	0,8%	254	4%	36	5%
Wealth situation	3 186	39%	227	21%	2 732	42%	227	31%
Financial situation	4 209	51%	318	30%	3 467	54%	424	57%
Profitability situation	4 583	56%	422	40%	3 796	59%	365	49%
Composition of assets	769	9%	75	7%	608	9%	86	12%
Composition of liabilities	858	10%	73	7%	695	11%	90	12%

Source: own analysis

- Determining elements of the accounting policy and the changes, the effect of these changes on financial results (Table 3).
 - The term accounting policy appeared in the notes on the accounts of 5,848 business entities, which is 71% of the involved enterprises.
- It is compulsory for the entrepreneur to introduce the system of rules applied for the elaboration of the statement, its major properties, the applied appreciation procedures and method and frequency of depreciation determined in the scope of the accounting policy.
 - Appreciation procedures appeared in 2,328 notes on the accounts, which means a 28% share.
 - The method of depreciation was introduced by the business entities in 40% of the notes and only 6% declared the frequency of accounting depreciation at the company.
- The notes on the accounts shall introduce the recommendation of utilising after-tax profit, which can be found in 508 of the analysed 8,226 notes on the accounts; this is 6% of the sample.
- Cash-flow statement concerning the previous and current year and including the factors, which affect the change of financial assets (prepared according to the annex of the Accounting Act) (Table 4). According to the Accounting Act, a cash-flow statement shall be prepared only by business entities for which it is compulsory to prepare annual statements. As seen in the table, only 189 of the 8,226 notes on the accounts include a cash-flow statement (2.3%). Table 1 indicated that 9% of the enterprises (738) prepared annual statements, which have cash-flow statement as a compulsory part. This means, that 6-7% of the business entities preparing

annual statements did not have a cash-flow statement, however it would have been compulsory for them.

Table 3: Appearance of the elements belonging to the general part in the case of the analysed notes on the accounts (pcs.)

Searched term	Total		Type of statement					
			Not specified		Simplified annual statement		Annual statement	
Analysed companies	8 226	100%	1 056	100%	6 432	100%	738	100%
Accounting policy	5 848	71%	644	61%	4 721	73%	483	65%
Appreciation procedures	2 328	28%	225	21%	1 926	30%	177	24%
Accounting of depreciation	3 294	40%	333	32%	2 648	41%	313	42%
Frequency of accounting depreciation	457	6%	99	9%	330	5%	28	4%
Utilisation of after-tax profit	508	6%	45	4%	416	6%	47	6%

Source: own analysis

Table 4: Appearance of the cash-flow statement in the analysed notes on the accounts (pcs.)

Type of statement	Cash flow statement		
	Yes	No	Total
Not specified	1 044	12	1 056
Simplified annual statement	6 331	101	6 432
Annual statement	662	76	738
Total	8 037	189	8 226

Source: own analysis

4. Conclusions

As Act C of 2000 on Accounting specifies, „It is indispensable for the functioning of market economy, that objective information is available about the wealth, financial and income situation of enterprises, non-profit organizations and other business entities in order to support the decision-making of market actors.” The notes on the accounts being a part of the annual statement, serves this purpose. According to the above, it can be established that the information content of the notes on the accounts would be crucial for the complex understanding of the annual statements for different market players and stakeholders as its users. For the successful operation of a business entity, awareness is a key factor, while information, knowledge and rapidity are also important in terms of decision-making. Decision-making based on

inadequate knowledge further increases economic risks that are already high. However, annual statements should help reduce risks through more established decision-making, because notes on the accounts, which are equipped with the required information, would ensure the proper level of familiarity of market players. In the case of the analysed 8,226 notes on the accounts, it can be established that there were deficiencies in terms of the legal requirements concerning of their general parts. General information indicated by the analysed business entities are not entirely in conformity with the stipulations of the Accounting Act, therefore the obligation of information transfer related to the reliable and realistic image of their operation is not fulfilled in their case.

Acknowledgements



„SUPPORTED BY THE ÚNKP-17-4 NEW NATIONAL EXCELLENCE PROGRAM OF THE MINISTRY OF HUMAN CAPACITIES”

References

1. 2000. évi törvény a számvitelről On-line: <https://uj.jogtar.hu/#doc/db/1/id/A0000100.TV/ts/20161126/> Letöltés dátuma: 2018.03.21.
2. Böcskei E. (2014): A számviteli politika előtérbe kerülése – a belső számvitel információtartalma, mint a vezetői számvitel alapja, Controller Info, II. évfolyam 2. sz./2014, pp. 38-43.
3. Feinerer I., Hornik K., Meyer D. (2008) Text mining infrastructure in R. Journal of Statistical Software, 25(5):1–54, March 2008. ISSN 1548-7660.
4. Feinerer I. (2008): An introduction to text mining in R. R News, 8(2):19–22, Oct. 2008. On-line: <http://CRAN.R-project.org/doc/Rnews/> Letöltés dátuma: 2018.03.20
5. Filyó J. (2014) A kiegészítő melléklet ellenőrzésének tapasztalatai Számvitel, adó könyvvizsgálat 56. évf. 6. sz. / 2014 pp. 285-286
6. Kántor B. (2016): A kiegészítő melléklet Számviteli tanácsadó VIII. évfolyam 3. szám pp. 2-11.
7. Kerezsi D. (2017): A kiegészítő melléklet szerepe a piaci szereplők tájékoztatásában INTERNATIONAL JOURNAL OF ENGINEERING AND MANAGEMENT SCIENCES / MŰSZAKI ÉS MENEDZSMENT TUDOMÁNYI KÖZLEMÉNYEK 2:(4) pp. 202-222.
8. Kwartler T. (2017): Text Mining in Practice with R. John Wiley and Sons, Ltd. ISBN: 978-1-119-28201-3
9. Munzert S., Rubba C., Meißner P., Nyhuis D. (2014): Automated Data Collection with R: A Practical Guide to Web Scraping and Text Mining. John Wiley and Sons, Ltd. ISBN: 978-1-118-83481-7
10. Musinszki Z. (2016): Pénzügyi mutatókon innen és túl ÉSZAK-MAGYARORSZÁGI STRATÉGIAI FÜZETEK 13:(2) pp. 71-80.
11. Welbers K., Van Atteveldt W., Benoit K. (2017): Text Analysis in R. Communications Methods and Measures, VOL. 11, NO. 4, 245–265, On-line: <https://doi.org/10.1080/19312458.2017.138723> Letöltés dátuma: 2018.03.20