EXTENSIBLE BUSINESS REPORTING LANGUAGE (XBRL): A VALUABLE INSTRUMENT FOR THE DEVELOPMENT OF DIGITAL FINANCIAL REPORTING IN THE REPUBLIC OF BULGARIA

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Abstract: The article presents the new opportunities faced by the organisation of accounting systems of Bulgarian enterprises and one of the guidelines – eXtensible Business Reporting Language (XBRL) – being a product of the information and communication technologies in the interest of digital financial reporting of enterprises. The research subject matter covers the essence, features and applicable field of XBRL in financial reporting. The purpose of processing is to present and summarize the functions and opportunities of XBRL as an international standard for digital business reporting and on these grounds to reason the need of its application in the Bulgarian enterprises as an effective instrument for the creation and summary of accounting information, being used by its users when making decisions that are purposeful from economic point of view.

XBRL as a manner of actions, means, method via which we influence the objects of accounting, in order to achieve the creation of high quality financial statements that contain comparable and comparable accounting information within the present research work is bound with the subjects that are directly interested in the qualitative and quantitative features of this information. We have analysed the connection and impact of XBRL onto those who create the financial statements, as well as onto the investors, creditors, regulatory bodies and academic fields.

We performed literature overview of the evaluations made by the various groups of subjects as a result of applying XBRL. Based on this, we have outlined the field of application of XBRL in Bulgarian enterprises. We have systematized proposals for making popular and using widely XBRL in the accounting systems of the Bulgarian enterprises in order to accelerate the digitalization processes, hence all the stakeholders taking advantage progressively.

Keywords: XBRL, digital financial reporting, information users, accounting

1. INTRODUCTION

The eXtensible Business Reporting Language, XBRL generally speaking is a computer language for exchange of financial-accounting and business information, presented in understandable and standardized manner to its users.

The genesis of XBRL originates from the ideas and views of the certified public accountant (CPA) from the USA – Charles Hoffman, who elaborated models of financial statements and audit schedules, while using the programming language XML. Hoffman discovered the huge potential of using XML in financial reporting and managed to defend the thesis that there is ever-growing need of creating global open protocol for digital financial reporting. As a result, in August 1999 the American Institute of Certified Public Accountants (AICPA) and 12 international companies (figure 1) incorporated the Management Committee of XBRL whose main objective was to ensure comparability and consensus between the participants in order to promote accepting and applying XBRL globally.

Fig. 1. Members of the Initial XFRML Steering Committee, August, 1999

Arthur Andersen LLP		FRx Software corporation
Deloitte &Touche LLP		Great Plains
E-content Company	**The AICPA**	KPMG LLP
Ernst & Young LLP		Microsoft Corporation
Free EDGAR.com		PricewaterhouseCoopers LLP
Inc.		The Woodburn Group

From 1999 until present days, the XBRL organization and the extensible language created by it for business reporting have been developing from technological, as well as from content point of view. In July 2000 the specification of **XBRL, version 1.0.** was officially published. It was built on the grounds of **Document type definitions (DTDs)**, being a comprehensive set of technical declarations for marking that comprise the types of documents in the marking computer language XML. DTDs defines the structure and valid building elements (blocks) of each and every XML document.

In December 2001, the specification of **XBRL, version 2.0**. was published. Just like its authors say, the creation of version 2.0 was motivated by two main factors. The first factor is the implemented new technology that is accessible in the pattern of **XBRL Schema** and **XML Linking**, which replaces the **Document type definitions (DTDs)** technology. The second factor is the accumulated experience in practical application, showing that version 1.0 is in need of improvements via the introduction of more flexible metadata, as well as the creation of means and approaches for easier adaptation of metadata.

Version 2.1. of XBRL that is up-to-date and effective nowadays, was officially published in December 2003. Within it, some ambiguous models have been optimized and eliminated within the contents of the previous version. Numerous modifications, supplementations and updates have been performed in XBRL on the grounds of the accumulated experience, as well as thanks to the publication of **XBRL General Ledger Taxonomy**. In view of its contents, changes were made in both structurally-defining components - **XBRL Instances** and in **XBRL Taxonomy**, which would be reviewed and described in detail in the present paper. Throughout the years, modifications and supplementations of this version were performed because of established insignificant technical and print errors on one hand, and on the other more significant side – because of the elaboration of new additional XBRL modules. In general, the concept of XBRL that is embedded in version 2.1. remains unchanged and is operational at present.

2. XBRL – THE TECHNOLOGICAL ASPECT THAT MATTERS TO FINANCIAL REPORTING

In order to explain XBRL clearly and understandably, we should explain the computer languages HTML and XML most generally. XBRL, HTML and XML are called the marking computer languages. These are not used for creating software applications, but are used for formatting and structuring data within documents, as well as in order to explain the meaning of these data when these are used by the computer systems. To put it otherwise, the marking language should add the so-called "tags" (markers or stickers) to the individual elements of the structured data within a particular document. These tags are two types:

☑ **HTML tags**, which show how are data supposed to be formatted and be presented to the user. It is applicable when presenting the webpages.

☑ **XML tags** that add metadata (information about data themselves) to the document and define the meaning and function of a particular element within the document. XML makes it possible for the users to define the tags themselves. When the user creates XML documents, he or she would define tags while following certain rules in order to ensure that the software application would recognize accurately and would check the XML document.

From technological point of view, the XBRL foundation includes *XBRL Specification 2.1.* (published in 2003). It describes and explains the following generally accepted building elements of the XBRL framework: facts, concepts, document templates and taxonomies. In view of their functionality, the elements are grouped into **two building blocks - XBRL Instances and XBRL Taxonomies**. Via the **XBRL framework** we define the rules, order and dependencies whereas a particular "fact" found within the building block of "document templates" should be recognized as value and to communicate with strictly defined "concept" for reporting the "taxonomies" by the building block. Hence we draw the logical conclusion that the building block of document templates (XBRL Instances) contains the facts that are object of reporting, whereas the building block of taxonomies (XBRL Taxonomies) includes the definitions and the precise contents of concepts via which we reliably and effectively find, extract and interpret these facts. In the circumstances of XBRL, "concept" is a particular reported term. Each and every term consists of particular appellation and type. The type defines the data features (numbers, letters, symbols) which are admissible and allowed for the facts measured and registered by the particular concept.

Each and every individual position in the XBRL statement that contains financial and/or non-financial information is "closed" by a pair of XBRL tags (markers) who describe the contents and features of the particular element. These markers provide semantic information about the statements of the enterprises that is readable and understandable, to people as well as to computer systems.

Each and every accounting software that is compatible with XBRL, has the functional capacities that make it possible to generate financial statements in various formats satisfying the government bodies, creditors (banks), investors, corporate management and others. Figure 2 illustrates and exemplary fragment of the XBRL file:

Fig 2. Fragment of root file xbrl.xml

```
<testcases name="XBRL 2.1 Tests" contributor ="Joe Tester" company="Test & Co." date="10/23/2003">
  <testcase uri="Common/instance/301-idScope.xml"/>
  <testcase uri="Common/instance/302-context.xml"/>
  <testcase uri="Common/instance/303-periodType.xml"/>
  <!-- *** Additional test cases -->
  <testcase uri="Common/schema/105-balance.xml"/>
</testcases>
```

XBRL, being a hierarchical and open system, makes it possible to expand the taxonomies, in conformity with the particular national or international requirements towards the financial or integrated reporting.

The positive side of marking languages is about them being flexible and independent from the computer programming platforms, as well as the language in which we program. The document templates (forms) result from the interaction of financial and non-financial database, XBRL software applications and the XBRL taxonomy, formed under the impact of:

- ☑ International accounting standards.
- ☑ Regional accounting standards and regulations.
- ☑ National regulatory requirements and accounting standards.
- ☑ Branch standards /standards, specific for each and every economic sector/.
- ☑ Corporate standards and policies.

From accounting point of view, XBRL is a marking language based on XML, which has specialized application in financial reporting of Bulgarian enterprises. XBRL technology is continuously progressing (Hsieh and Bedard, 2018) and could be defined as a standardized digital instrument that prepares, presents, publishes, extracts and exchanges financial and non-financial information from enterprises' statements. Thus, for example, the accountants of the enterprises that are preparing their statements in the Republic of Bulgaria could prepare a full set of financial or integrated statements that include:

- ☑ Statement of financial position (balance sheet).
- ☑ Statement of comprehensive income (statement of revenues and expenses).
- ☑ Cash flow statement.
- ☑ Statement of equity.
- ☑ Explanatory notes.
- ☑ Annual activity report.
- ☑ Declaration of corporate management.
- ☑ Non-financial declaration.
- ☑ Report on payments towards governments.
- ☑ Independent auditor's report.

3. MAIN PURPOSES, MANAGEMENT AND ORGANISATIONAL STRUCTURE OF XBRL INTERNATIONAL

Elaboration and development of the XBRL standard is being managed by the non-governmental organization **XBRL International**, which as of its incorporation until present days is after goals among which the ones of significance for the present research are the following:

- ☑ Improvement of accountancy and transparency of the results from enterprise operations.
- ☑ Procurement of global standard for reporting enterprises' activity via open data exchange.

The activity of XBRL International is about the elaboration and provision of access to the technical standards (specifications) of XBRL. XBRL International unites more than 600 members that include individual enterprises (**individual participants),** as well as associations that represent the interests of individual organizations and of enterprises of the particular countries (**XBRL jurisdictions**) in their relations with XBRL International. As an individual group of members we have outlined the **sustainable partnerships** that refer to the organizations who are ready to take up a responsible financial and strategic role in advancing XBRL via the provision of support at corporate, technical and educational level.

The factors of the highest significance to the development and establishment of XBRL are the jurisdictions of the individual states which unite the regulatory bodies and other participants, interested in implementing the XBRL standard in the particular country. The following 19 countries take part in XBRL International as constant jurisdictions: Belgium, Belarus, Great Britain, Germany, Denmark, India, Italy, Spain, China, Korea, the

Netherlands, the United Arab Emirates, Russia, the USA, France, Finland, Sweden, South African Republic and Japan, as well as a single supra-national jurisdiction – XBRL Europe and one temporary jurisdiction – Switzerland.
The International Board of Directors of XBRL performs the functions and tasks of the main management body of the non-governmental organization in conformity with the Common corporate law of the State of Delaware, the USA. The Board of Directors consists of 11 people – managers and experts with extensive international experience in reporting for financial, business and regulatory purposes, as well as in accounting and the accounting standards. Via its operations, the Board of Directors supports the organization XBRL International when performing its strategic goals, defines the global trends of the XBRL development, elaborates long-term strategies for organizational growth and sustainable development.

4. DISSEMINATION AND APPLICATION OF XBRL

From economic point of view, the suppling of XBRL as software product is defined by the software developers. As of July 2022, XBRL International officially published at its webpage 68 software products, software instruments and services for digitalization via XBRL, being offered officially by not more than 30 companies globally. Meanwhile, as a fundamental element of market mechanism we have the demand for XBRL-compatible software applications. In particular countries, the use of XBRL is mandatory for certain categories of enterprises that suggests to certain degree mandatory minimum demand for XBRL. In other countries, the application of XBRL is performed in voluntary manner – upon manager's discretion of each and every enterprise or organization. The prevailing trend from international point of view shows that the application of XBRL in the digital financial reporting from predominantly voluntary becomes more and more mandatory, since ever increasing number of countries necessitate the regulatory application of the XBRL taxonomy for the enterprises whose shares are being publicly traded on the equity markets. With this measure, the regulatory bodies are striving for ensuring and procuring for the shareholders, investors and all the other stakeholders financial-accounting transparency and facilitated access to the business information about the particular categories of enterprises. The examples in this light are the regulatory bodies of the USA and Japan, which introduced the mandatory presentation of digital financial statements in XBRL format of the joint-stock companies whose shares are being publicly traded at the stock exchange. Additionally, the European Commission prescribes for all the companies that are registered at the stock exchange to prepare their annual financial statements for the financial years that start on or after the 1st of January 2020 in the XBRL-based European single electronic format (ESEF), elaborated by the European Securities and Markets Authority (ESMA). Because of the COVID-19 pandemics, the initial implementation of ESEF was postponed for a year and its effective implementation started on the 1st of January 2021. One of the main features of the ESEF taxonomy is that it was built and is based mainly on the IFRS taxonomy. Convergence and compatibility between both taxonomies has been achieved to great extent. As a result of this significant regulatory measure, the digital financial reporting for the Bulgarian enterprises is not just wishful thinking and perspective, but turned into present. The benefits and hindrances faced by the initial mandatory application of ESEF in the EU are about to be empirically observed and researched. The earliest results are expected as of the end of 2022, after the end of the process of preparing, auditing and publishing the financial statements for 2021. As the time of mandatory application of the ESEF taxonomy in the EU is just ahead of us, it remains to be seen to what XBRL adoption will affect the financial performance of the EU enterprises and in particular whether the perceived long-term benefits will outweigh possible short-term difficulties (Đurović et al., 2021).

5. XBRL SUBJECTS

The subjects or users of financial and non-financial information created with the assistance of software applications that use XBRL should be outlined in two main groups, in view of enterprise's threshold – internal and external.

The following belong to the internal user group:
- ☑ The management.
- ☑ Accountants.
- ☑ Auditors.

The independent group of users of financial-accounting information covers a broad scope of stakeholders, among whom:
- ☑ Regulatory bodies.
- ☑ Standardization bodies in accounting and financial audit.
- ☑ Investors.
- ☑ Creditors.
- ☑ Analysts.
- ☑ Teachers, academicians, scientific researchers.

In turn, each and every information user has his or her features and in stricter manner is interested in receiving high-quality financial-accounting information by the enterprise whose financial statements he or she analyses. Hence each and every of the enlisted users could be researched individually, as an independent sub-group of subjects of the XBRL statements.

Fig 3. Participants in the XBRL system

Heads of enterprises	XBRL participants	Standard Setters
		Authorities
		Auditors
Accountants		Investors
		Creditors
		External financial analysts
Internal Auditors		Business partners
		Teachers, academicians and researchers

6. XBRL ADOPTION IN BULGARIAN ENTERPRISES: PRESENT AND FUTURE

Digital accounting with XBRL in Bulgarian enterprises happens at slower pace even though the benefits from the technological innovations are significant, for the accounting process, as well as for the comprehensive corporate management. It is necessary to clarify to potential users that XBRL does not change the basics of the financial accounting concept, but only the ways of disclosing information and the extent of disclosure. (Marinova, Atanasov, 2012).

It is a fact that in nowadays' digital era modern informational technologies make it possible to generate wide-scope information of huge volume, as well as its rapid transfer to great distances. Yet the fundamental issue is that while taking advantage of these opportunities, we should achieve effective management of the complicated information processes that are going on within the companies (Petrova, 2018). The application of XBRL-compatible software in the financial-accounting operations of enterprises optimizes and significantly facilitates the processes for preparing the financial statements, as well as the extraction, exchange and analysis of data from the financial statements. The acceptance of the XBRL technology has widespread benefits from the accountants, managers, investors and creditors, the regulatory bodies. The application of XBRL by enterprises allows them to prepare their annual financial statements once and in one place, and then all interested users ... to use this information (Маврудиев, 2011).

XBRL could potentially enable preparers to save costs in producing and distributing financial information, removing manual data re-entry and reducing errors (Avallone et al., 2016). The information from the primary accounting documents should be entered just once in the computer system and then be used on numerous occasions by various subjects and for different purposes. We optimize the accounting work – the centre of gravity in the accounting work is shifting from the mainly technical skills to analytical functions with much higher added value for the comprehensive enterprise management. The access to analytical information is facilitated, as well as to the applicable accounting standards that have been applied for the creation of this information (Müller-Wickop et al., 2013). The extraction and analysis of financial and non-financial indicators from the XBRL statements are turned into automated processes. The users of financial statements could analyse effectively and efficiently the information about the financial results and the financial position of the enterprise reviewed by them. Therefore, through the use of XBRL mitigates information risk and improves the information environment. (Tawiah, Borgi, 2022).

7. CONCLUSION

In order to make possible the widespread usage of XBRL in financial reporting of Bulgarian enterprises we should resolve several issues. Firstly, we should create more taxonomies in order to satisfy the various requirements towards preparing the financial statements. Secondly, the regulators should promote the use of XBRL when preparing and publishing the financial statements. With the assistance of regulators, the XBRL could be rapidly accepted. Thirdly, we should elaborate software with activated XBRL that is easier for the user. Many preparers and users of financial statements are not very well technically prepared and the softwares with numerous menus and commands hinder their job. In many cases, we proceed to changing this type of software applications with others that are tailored to the user. The effective implementation of XBRL in the process of financial reporting should be greatly based on easy to use and accessible XBRL applications. Thus, the accounting personnel would naturally accelerate the processes of XBRL dissemination. If these problems are not solved, for sure we would see that XBRL would be broadly used by all the categories of enterprises in the near future.

REFERENCES

Avallone, F., Ramassa, P., & Roncagliolo, E. (2016). The pros and cons of XBRL adoption in Italy: A field study, Lecture Notes in Information Systems and Organisation, vol. 14, 157–170.

Đurović, M., Rep, A., & Dečman, N. (2021). Towards Full Digitization of the Financial Reporting Overview of the Financial Reporting Languages, 12th International Odyssey Conference on Economics and Business, Croatia, 55-69.

ESMA. (2022). ESEF Reporting Manual, Preparation of Annual Financial Reports in ESEF format, https://www.esma.europa.eu/

Extensible Business Reporting Language (XBRL) 2.0 Specification, 2001 http://www.xbrl.org/tr/2001/xbrl-2001-12-14.doc

Hsieh, T., & Bedard, C. (2018). Impact of XBRL on Voluntary Adopters' Financial Reporting Quality and Cost of Equity Capital. Journal of Emerging Technologies in Accounting, 15(2), 45-65.

Marinova, R., & Atanasov, A. (2012). The Application of the New XBRL Electronic Reporting Format as a Prerequisite for Sustainable Development, Governance And Sustainable Development, Bulgaria

Müller-Wickop, N., Schultz, M., & Nüttgens, M. (2013). Modeling Concepts for Process Audits – An Empirically Grounded Extension of BPMN, in Proceedings of the 21st European Conference on Information Systems (ECIS 2013) in Utrecht, Netherlands.

Petrova, D. (2018). Accounting in the Context of Global Corporate Management – Contemporary Requirements and Problems, Knowledge – International Journal, Vol.23.1, IKM – Skopje, North Macedonia, 295.

Tawiah, V., & Borgi, H. (2022). Impact of XBRL adoption on financial reporting quality: A global evidence, Accounting Research Journal, 16, https://doi.org/10.1108/ARJ-01-2022-0002

XBRL Educational Resource Center At Bryant University. What is the History of XBRL? http://xbrleducation.com/edu/history.htm

XBRL International, http://www.xbrl.org/

Маврудиев, Х. (2011). Използване на единен електронен формат при публикуване на годишните финансови отчети, УИ Стопанство, София, България, 159.