

## NEW MODELS FOR ANALYSING THE FINANCIAL STATEMENTS OF ORGANISATIONS

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### ABSTRACT

*The article under discussion depicts new models for analysing the financial statements of organisations. The relevance of the problem under consideration is due to several factors at once: the rapidly changing needs of internal and external users of reporting, the trend towards unification of accounting standards, the processes of digitalisation and globalisation of the modern economy. The essence of the concept of digital reporting format XBRL, the format of aggregated accounting data showcases as well as the process of transition to these formats are considered in the article. The main advantages of integrating the above mentioned formats into accounting practice and the practice of analysing reports for their users are identified.*

**Key words:** financial statement, organisation, aggregated accounting data showcases, format XBRL, digitalisation, globalisation.

### АННОТАЦИЯ

*В обсуждаемой статье представлены новые модели анализа финансовой отчетности организаций. Актуальность рассматриваемой проблемы обусловлена сразу несколькими факторами: быстро меняющимися потребностями внутренних и внешних пользователей отчетности, тенденцией к унификации стандартов бухгалтерского учета, процессами цифровизации и глобализации современной экономики. В статье рассмотрена сущность понятия формата цифровой отчетности XBRL, формата витрины агрегированных учетных данных, а также процесс перехода к этим форматам. Выявлены основные преимущества внедрения вышеуказанных форматов в практику бухгалтерского учета и практику анализа отчетов для их пользователей.*

**Ключевые слова:** финансовая отчетность, организация, витрины агрегированных учетных данных, формат XBRL, цифровизация, глобализация.

### INTRODUCTION

The shortcomings of the modern financial reporting system and the study of the current state of information disclosure in financial statements indicates the need to develop and apply new formats of data presentation and disclosure, which, in turn,

entails changes in the reporting forms themselves. In our opinion, the process of emergence of new types of reporting can be considered as a response of the accounting system to the changing demands of users.

The country's development in a digitised economy further tightens the requirements for financial reporting due to the spread of new digital technologies and modern business trends. By improving information technologies for processing and forming reporting information, such qualitative characteristics as predictive value, confirmatory value, completeness, absence of errors, verifiability and timeliness can be significantly improved. At the same time the factor of digitalisation will not be able to improve such qualitative characteristics of financial reporting as relevance, materiality, truthful presentation, and timeliness. These characteristics depend on the accountant's professional judgement and competent actions.

In general, digitalisation significantly increases the information value of financial reporting, and in this regard, it is said that it is important to improve approaches to the formation of financial reporting in the new conditions. As an indicator of improvement, many researchers suggest the possibility of customising the user menu for each indicator in the digital form of reporting [1]. This will allow access to additional information related to determining the value of this indicator, including the calculations performed and the possibility of access to the regulatory framework that served as the basis for such calculation.

## **MAIN PART**

The end of the 1990s led to the creation of one of the first digital formats, the XML reporting format, which is still successfully used worldwide today. Despite the digital reporting format, XML format makes it difficult for users to analyse the data due to the lack of an accessible way to visualise it directly from this format, a problem that is solved by processing with the help of certain visualisation software. This format of information presentation is not a set of tables and schemes, but contains the data for report formation and the necessary programme. According to A.E. Kovalev, the beginning of XML format application meant the separation of financial reporting data from the form and the emergence of the structure of accounting data [4].

A vivid representative of digital reporting is the XBRL format, which is considered a new format worldwide, as it is used only by some non-credit financial organisations, but there are certain prospects for application in the commercial sector. Integration of the XBRL format, in which the content of reporting is presented in the form of an array, allows processing of reporting data using a computer. Mandatory reporting in XBRL format for tax authorities, stock exchanges and statistical services

has been practised for several years in the USA and European Union countries. As part of the presentation of financial statements to external users, this format is currently used by such giants as Microsoft, Reuters, Morgan Stanley and others [2].

XBRL (extensible Business Reporting Language) is an international standard of business reporting disclosure, the purpose of which is to regulate the exchange of business and financial information [6]. Each unit of information in the XBRL format is endowed with tags whose meanings are contained in a taxonomy. A taxonomy is a “dictionary” of tags adapted to a national standard. For example, there are taxonomies of IFRS (International Financial Reporting Standards), US GAAP (Generally Accepted Accounting Principles), UK GAAP. Thus, the procedure of XBRL reporting is reduced to assigning tags from the taxonomy to the corresponding accounting data. Transformation of financial statements into this electronic format can be performed using special software or manually, which is practised only by small businesses. At the moment, according to the SEC XBRL Spy research, the most common software developments for translation of reporting into the XBRL format are the following: Rivet, IMetrix, Corefilling, Fujitsu, Simplex, Hitachi [3].

The effectiveness of integrating the XBRL standard into modern accounting practice depends on the possibility of using it to optimise the process of preparation of financial statements for accountants, collection, analysis and processing of reports for external users. The benefits of using the format can be conditionally divided for the following categories of economic entities: preparers of reports, investors and regulators [10].

A significant benefit of switching to the XBRL format for preparers of reports is the actual reduction in the time of its preparation by 15%, which is due to two factors. Firstly, the format in question provides full integration of reporting and accounting, due to which the formation of reporting becomes fully automated. Secondly, organisations can now avoid duplication of data in dozens of forms for different regulators due to full identification of data [9].

Due to the translation of reporting into the XBRL format, investors can most effectively and easily analyse the financial condition of an organisation. This advantage is associated with the fact of increased compatibility of reports of different companies: XBRL format makes it possible to process both numerical and textual information, which allows investors to compare the reporting indicators of several organisations [5].

In our opinion, the use of XBRL format for the commercial sector will avoid repeated generation of financial statements for different groups of users with different requirements to information presentation. At present, due to limited technical

capabilities and time, the business entity submits a compulsory copy of financial statements to the tax authority, as well as to its investors, owners, statistical authorities and other users. In this regard, the reporting is uninformative and irrelevant for many users.

In the conditions of development of the digital economy within the framework of application of the XBRL format it will be possible to form the desired and necessary form of reporting for users, having set up in advance in the accounting system a set of key indicators for each group of interested parties. In this way, a differentiated approach to the presentation of information to different users will be ensured. On the one hand, this will ensure confidentiality of information, on the other hand, it will eliminate the redundancy of indicators for some groups of users, and for others it will ensure the formality of data. Thus, the application of a differentiated approach to the presentation of information will make it possible to limit access to insider information. The current presentation format of financial statements and its future presentation format

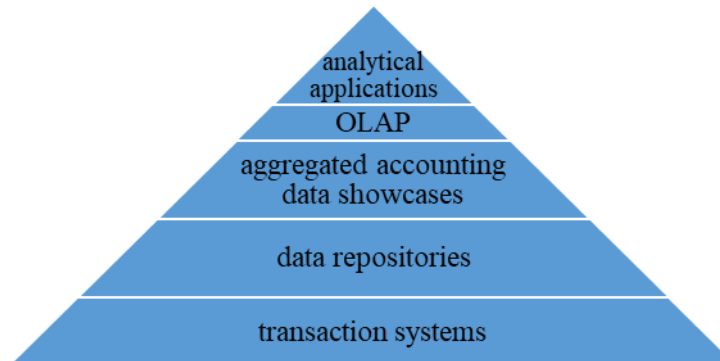
Sufficiently detailed financial statements will be submitted to the State Information Resource of Accounting (Financial) Statements (SIRAS). To reduce the labour intensity of the accounting process, the detailing of information for different groups of users can be carried out by levels of aggregation. For example, the item “Inventories” in the context of types of tangible assets is unlikely to be useful for tax authorities, but for investors, the owner and top management of the company can be essential information for decision-making. For such users of financial statements as counterparties and tax authorities, information on fixed assets in aggregated form will be sufficient, while for investors it will matter what objects are included in fixed assets and what their physical and moral depreciation is.

Marina Durovic, Ana Rep and Nikolina Dechman note that information is considered useful if it is relevant to the decision maker. Financial reports presented in XBRL format contain interactive tags and allow the user or decision maker to easily find relevant information [7]. Thus, the ad hoc disaggregation of financial statements for specific groups of users will maximise the impact of their decision making.

The next stage in the development of accounting reporting is the form of an aggregated accounting data mart (AADM). The concept of data mart was developed by Forrester Research in 1991. Nowadays, data mart is an integral part of decision support systems (DSS) and BI (Business Intelligence) in modern large companies.

In its original version, data mart is a set of thematic databases containing information related to certain aspects of an organisation's business. The peculiarity of the accounting data mart transferred as reporting (accounting data) is that it should

not be highly specialised. Its difference from the repository will consist in aggregation of all accounting information, aggregation of data to the level beyond which they cease to be classified as trade secrets.



**Fig.1. Reporting data as a development of the fourth generation of accounting reporting**

As a result, at the fourth stage of development, reporting will be an integral element of the analytical pyramid of economic information already nowadays used to improve the validity of managerial decisions.

In this pyramid (Fig. 1) the level of the analytical pyramid, following AADM, is occupied by OLAP-systems. OLAP-systems provide solution of many analytical tasks, for example, analysis of key performance indicators, marketing, financial and economic analysis, scenario analysis, modelling, forecasting, etc. The peculiarity of OLAP-systems consists in multidimensional data storage. This gives the user the opportunity to build operational non-regulated queries to the data of AADM, using a number of analytical directions. The OLAP user operates with familiar economic categories and concepts, which greatly simplifies the work with data. AADM together with OLAP form a multidimensional model of financial reporting.

When using a multidimensional model of financial reporting, the traditional approach of forming reports in accordance with the ideas about information requests of groups of users of reporting information differing in specific information requests loses its relevance. The history of recent financial crises shows that in order to obtain reliable conclusions it is necessary to study the organisation from a variety of angles. In this respect, information segregation poses a significant threat. In addition, “...the current business climate is so dynamic that corporate users now recognise their information requests from 3-6 months ago as irrelevant...” [8].

It is probably worth paying attention to the general permissive principle of providing financial information when forming the AADM: “Everything that is not prohibited is allowed”, instead of the current permissive principle. It is expected that the amount of information included in the AADM will be much larger than what is currently presented in the reports. This volume of information will allow the user to

assess the financial position and financial and economic activities of the organisation from different angles. The construction of AADM is based on the division of all available accounting information into that which is a commercial secret and information that should be made available to a wide range of interested users.

At this point in time, the XBRL framework is actively developing a means of communicating multidimensional data, but ultimately this is not necessary. If the accounting information system is to be highly organised on the basis of a multidimensional data model, there is no need for its intermediate conversion to XBRL format only at the data transfer stage. It is much easier and more logical not to convert data from a multidimensional database structure to XBRL, transfer it in XBRL format and then do the reverse conversion to a multidimensional database structure, but immediately provide the end user with access to aggregated accounting data.

The structure and basic aggregates used in AADM should be standardised in the same way as XBRL taxonomies are now formed, but not within the framework of the activities of one specialised international consortium alone, but with the active participation of the International Accounting Standards Committee. At least the basic data set of the AADM should be standardised within the framework of international and national standards. It is assumed that the structure of the AADM will remain unchanged over a relatively long time horizon. The very process of forming the AADM for the reporting period of a particular economic entity will be an automated standardised algorithm, hence, the quality of information contained in the AADM will be determined mainly by the work of the system of registration of facts of economic life at the levels of transactional systems and data warehouses. Therefore, the international standardisation process in accounting will return to its original task of developing the accounting mechanism (IAS), instead of the currently implemented task of reporting (IFRS).

The use of a multidimensional data model assumes that the data set included in the SAI will be stable and will not change over long periods of time. This should eliminate the current practice of constant changes in reporting.

## **CONCLUSION**

The application of new information technologies, including in the field of accounting, exacerbates the need to address the issue of commercial secrecy as the most important parity between the interests of society and the economic entity, taking into account new conditions.

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