

REPRESENTING DEVELOPMENT COSTS OF APPLICATION SOFTWARE IN FINANCIAL STATEMENTS: A STUDY ON HOW BULGARIAN ACCOUNTING CULTURE NEEDS TO BE CHANGED

Accounting

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The costs of software development are a relatively unknown category for our accounting legislation. Despite the rapid development of the software industry in our country, the problems of accounting concerning this kind of assets remain unresolved. In this paper, we evaluate accounting practices for application software expenditures. International and national accounting standards require incurring certain costs and capitalizing others. We suggest a methodology for applying current accounting practice on application software for the purposes of annual reports.

Key words: application software, IFRS 38, intangible assets, R&D expenditures.

The investments of considerable human, technical and financial resources in the development of computer programs, the growing role of computer programs in the development of the European market, the differences in the mode and means of protection for computer programs lead to the need for European countries to update their legislation as to the proper presentation of these objects in the annual accounting report.

Essentially, the costs of software development are a relatively unknown category in our accounting practices despite the rapid development of computer industry in our country. We can identify several reasons leading to problems in the accounting treatment of costs in particular, and software as a whole in companies.

Firstly, as a result of the activities of companies in the sector, special type of assets originate, namely – ownership of intellectual property which bring the economic benefit to their creators only in cases in which those rights are subject to legal protection. For this type of asset, the contractual protection provided as an alternative in IAS 38 is not applicable.

Secondly, statistics show that for the period 2006–2009 the percentage of costs of development of Internet and communication technologies as a share of the GDP increases not only in Europe (being the highest in Scandinavia and Britain) but in Japan and the USA, too.¹

Last but not least important, these assets can easily become the subject of criminal offenses, including the use and extraction of economic benefits without legal warrants. In 2009, the share of unlicensed software used in Bulgaria decreased by 1 percentage point,

¹ Eurostat: <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&plugin=1&language=en&pcode=tsir090>

reaching 67 %, and losses to the software industry due to piracy in the country amounted to 115 million USD (compared with 139 million USD in 2008).²

The objective of this paper is to outline the problems in accounting treatment of the process of creating software in Bulgarian companies of the IT sector in order to propose a proper methodology for recognition, reporting and cost-sharing in the cost price of the acquired asset.

The discussion over the issues raised in this article makes it necessary to do a short legal review of the current legislation in this regard in Bulgaria. At present, rights relating to ownership and assignment of computer programs by their creators to third parties (consumers) are regulated by the Copyright and Related Rights Act (CRRA). The form in which this transfer is carried out is treated under the general legal regime as a commercial transaction (licensing agreement) under the Commerce Act. Patents and Registration of Utility Models Act (PRUMA) provides guidance regarding licensing – subject, types of licenses, action towards third parties. Accounting treatment of acquisitions and transactions with application software should be made in Compliance with the principles and rules laid down in the Accounting Act, International Financial Reporting Standards or National Financial Reporting Standards.³

I made an empirical study of the annual financial statements of 66 Bulgarian software companies, most audited in connection with my dissertation work. It shows, in the most general sense, that both the costs of creating and the end product itself - the software are treated for accounting purposes ambiguously.⁴ In other words, the rules and regulations in the cited Acts and Regulations are interpreted and implemented differently in different companies.

But in order to be clarified and accordingly understood the existing difficulties in the practical application of legislation on the accounting treatment of costs of development of application software, the terms ‘software’ and ‘application software’ should be defined. Similar definition is missing in the Bulgarian legislation. In the CRRA, the term ‘computer program’ is found but its content is not clearly explained. In IAS 38 and NAS 38, the general term ‘computer software’ is used, but there is no definition of this term. As applicable in this case we could accept the legal definition of ‘software’ given in Directive 91/250 of the EU on protection of computer programs in member-states of the Union and defining as such those computer programs which are protected by copyright. The main problem here is not the presence or absence of a written legal definition, but the attributed to it in the context of the law content. In other words, the inclusion or exclusion of a computer program from a group of software of the company predetermines to a large extent the opportunity to derive economic benefits in the future by the incurred on the occasion of its development costs and the recognition of the incurred costs as costs forming a fixed asset.

The term ‘software’ is quite broad and it appears in many forms in practice: there is software in mobile phones, automobiles, industrial equipment, etc. In this study software is seen only as computer software which is designed for data processing by a personal computer.

From a theoretical point of view in the narrow sense, ‘computer software’ includes all programs used to manage an electronic-and-computing machine. The IEEE (Institute of Electrical and Electronics Engineers) defines the term ‘software’ in a broad sense as a set of computer programs, procedures and rules and connected with them documentation, data and

² According to research published by the Bulgarian Industrial Association.

³ On 01.01.2003 with a decree of the Council of Ministers International Accounting Standards were adopted in Bulgaria. The Accounting Act says that small and medium enterprises can choose as a basis for accounting either international or national accounting standards. Large companies can only apply IAS.

⁴ The latter falls outside the scope of this report.

services relating to the functioning of the system.⁵ Therefore, in the broad definition, software covers also those additional components - documentation and services, which make the program a product which can be sold on the market. That is why in this study we accept the definition of software in a broad sense.

In science and practice different classifications of software are known, in most cases assumed from a technical or economic perspective. From a technical perspective, software is subdivided according to its function generally to system and application software. System or base software, whose main part is the operating system, serves as a link between hardware and application software. The system software provides activities which are common to a computer system and are not connected with specific applications or users. The application software is a set of programs designed to solve certain classes of tasks of users with the help of a computer. The goal is to optimize the efficiency of the user's work. This group includes both finished software packages distributed on the software market and software developed or ordered by consumers themselves.

Standard application software is designed for homogeneous functional areas and use by individuals or organizations and is designed and created to meet their specific needs which can not be solved by other type of software. Characteristic for this type of software is its high price. Standard application software is generally supplied without a source code and that is why they can be implemented by multiple users without significant changes and adaptation.⁶ Hence the desire of the manufacturer should be to produce and sell a large number of copies of the standard program and accordingly, to allocate costs in the development phase on a larger number of calculation units. However, since fixed costs of production mainly concern the development of the original program (first copy costs), and variable costs incurred subsequently to create copies and the accompanying documentation are relatively low, eventually, the production of standard software features a low cost price per unit.

Standard application software comprises two main types of programs - subject and not subject to subsequent changes application programs. The first comprise those used by user in the way they are developed without the possibility for further modification. These include programs such as the MS Office package, most accounting programs and others. Subject to change standard software is those programs which, despite the high degree of standardization, can be later modified to meet specific individual needs of the user. For this purpose, they are built on a modular basis and are known in contemporary practice as 'an integrated information system built on a modular basis'. These include banking, insurance and information systems.

Individual application software (software by order), unlike the standard one, is aligned to the special requirements of a certain buyer or a very limited range of buyers. The development of an individual program is necessary in cases when a standard application program which can do the technical data processing to solve particular tasks is not available on the market. Creating such a program is based on an order contract.

Due to the limitations in the volume of this report, we will focus on issues related to accounting reports on costs of developing standard application software.

The regulations concerning the recognition, reporting and disclosure of costs associated with the creation of intangible assets, including software, are contained primarily in IAS 38 and NAS 38 Intangible Assets (hereinafter called 'standards' for short). The same standards, whose content is similar, regulate the procedure for recognition and evaluation of internally generated intangible assets arising as a result of conducted research and development in the company. This requires a brief overview of the basic and specific criteria for recognition of intangible assets.

⁵ <http://www.computer-dictionary-online.org/index.asp?q=software>

⁶ Köhler/Benzel/Trautmann, Bilanzierung von ERP-Software, 2002, p. 926

Under the general **asset definition** in the conceptual framework, assets are resources expected to yield *future benefits* that are *controlled* by the entity as a result of a past transaction. Assets are recognised if: (a) it is probable the future economic benefits attributable to the asset will flow to the enterprise; and (b) the cost of the asset can be measured reliably (International Accounting Standards Board (IASB) Framework). **Control** means the power to obtain the future economic benefits flowing from the underlying resource and to restrict the access of others to the benefits (IASB Framework). **Control** normally stems from legal rights. However, according to paragraph 13, legal rights are not a necessary condition for control because “an entity may be able to control the future economic benefits in some other way”. IAS 38/NAS 38 *Intangible Assets* narrows the asset definition for intangible assets. An ‘intangible asset’ is an *identifiable* non-monetary asset without physical substance.

‘Identifiable’ means:

- (a) Separable, that is, capable of being separated or divided from the entity and sold, transferred, licensed, rented or exchanged, either individually or together with a related contract, asset or liability; or
- (b) Arises from contractual or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations.

The definition of an intangible asset requires it to be identifiable in order to be separated from goodwill. In a merger or acquisition context, the difference between the amount the acquiring company pays for the acquired company and the book value of the acquired company’s assets would be recorded on the acquiring company’s balance sheet as goodwill.

In the realm of accounting treatment of intangibles, however, a further distinction exists between treatment of internally generated intangibles and purchased intangibles.

Purchased intangibles are capitalized and placed on a company’s balance sheet. Internally generated intangible assets must be out of the ‘research phase’ and into the ‘development phase’ and then pass six additional tests (IAS 38/NAS 38):

- (a) The technical feasibility of completing the intangible asset so that it will be available for use or sale;
- (b) Its intention to complete the intangible asset and use or sell it;
- (c) Its ability to use or sell the intangible asset;
- (d) How the intangible asset will generate probable future economic benefits. Among other things, the entity must demonstrate the existence of a market for the output of the intangible asset, or the intangible asset itself or, if it is to be used internally, the usefulness of the intangible asset;
- (e) The availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset; and
- (f) Its ability to measure reliably the expenditure attributable to the intangible asset during its development.⁷

In general, standard software satisfies the general criteria for recognition. Its value is equal to the manufacturer's cost; it bears future economic benefits to the enterprise as it produces it in order to generate revenue by selling the rights to its use on an active market.

In accounting standards there is an assumption that intangible assets are created in two phases: the research phase and the development phase. Standards provide definitions for these two phases:

⁷ IAS 38, par.57, NAS 38, par. 3.3.

'Development is the application of research findings or other knowledge to a plan or design for the production of new or substantially improved materials, devices, products, processes, systems or services prior to commencement of commercial production or use.'

'Research is original and planned investigation undertaken in order to obtain new scientific or technical knowledge and understanding.'

Standards have adopted the principle that costs incurred for software development in the so-called 'research phase' are not in one way only linked to a specific purpose in terms of accounting and therefore, their inclusion in the value of a future intangible asset is prohibited, i.e. these costs can not be capitalized and should obligatory be recognized as current for the period. From a certain moment, which standards define as 'technical feasibility of completing the intangible asset' and that marks the beginning of the second phase of the creation of the asset (called the 'development phase'), the costs incurred can be capitalized. This term has been introduced because the distinction of the two phases based only on definitions is practically difficult. On the other hand, the criterion 'technical feasibility' itself is also difficult to be applied in practice. This gives the accountants in particular, and the reporting entity as a whole, relative freedom for its use.

Used by the standards, the criterion 'technical feasibility' leads to two major problems in accounting practice:

- Different interpretations of the criterion of technical feasibility result to that that capitalization of costs in the value of software is done in different ways in the accounts of various companies. Using different approaches leads to breaches of requirements with the basic accounting principle⁹ 'comparability', according to which information in the report should be possible to be used in comparisons of financial statements between separate companies in the sector.
- The possible non-recognition of costs of software development with reference to the criterion 'technical feasibility' leads to breaking the principle 'materiality' and 'match of revenues and expenses', which is expressed in the fact that investors are not provided key information about certain assets.

These two given shortcomings can be supported by examples:¹⁰

1. The Bulgarian company 'Contrax' is a company producing standard software for the financial sector. The company applies IFRS and capitalizes costs of software development upon reaching technical feasibility to project completion. Here is what it states in the notes to its annual financial statement.

Capitalized Software

Capitalized software development costs include personnel costs of the software development team, directly related third-party expenditures and an appropriate portion of relevant overhead. Capitalization of such costs begins upon establishment of technological feasibility and ends when the resulting product is available for general release in accordance with International Accounting Standard (IAS) No. 38, *Intangible Assets*. All costs incurred to establish the technological feasibility of software products are classified as research and are expensed as incurred. **Expenditures that enhance and extend the benefits**

⁸ See definitions to IAS 38 and NAS 38.

⁹ Accounting principles are regulated in the Conceptual Framework to IAS and in the Accounting Act. Compliance with them ensures the achievement of the main objective of the annual accounting report, namely the true and fair view of the financial position, cash flows, activities and financial performance of the reporting entity.

¹⁰ Only two examples are cited in order to demonstrate different accounting practices for reporting similar processes and objects.

of computer software available for sale beyond their original specifications and lives are recognized as a capital improvement and added to the original costs of the software. Capitalized costs are amortized over a 3-year period and reported at the lower of non-amortized cost or net realizable value.

2. The Swiss company ‘Day’ develops and distributes standard application software in the sphere of Content Management. The company applies IFRS and should capitalize costs of software development upon reaching technical feasibility to project completion:

Development costs incurred in the research and development of new software products to be sold or otherwise marketed are expensed as incurred until technological feasibility in the form of a working model has been established at which time such costs are capitalized, subject to recoverability. Products are made available for limited release, concurrent with the achievement of technological feasibility. **Accordingly, software development costs incurred subsequent to the establishment of technological feasibility have not been significant, and the Company has not capitalized any software development costs to date.**

Further, standards provide guidance which costs may be capitalized and which are not subject to recognition of the value of the intangible asset.

The cost price of an internally generated intangible asset includes all directly associated costs necessary for the creation, production and preparation of an asset in order to be brought to a condition to function in the way intended by management. Examples of directly associated costs are:

- a) costs of materials and services used or consumed in the creation of an intangible asset;
- b) costs of employee benefits (as defined in IAS 19 *Employee Benefits*) arising from the creation of an intangible asset;
- c) fees for registration of legal rights; and
- d) amortization of patents and licenses which are used to create the intangible asset.¹¹

The standard adds that the cost of sales, personnel training for working with the asset, initial operating losses and certain others are not part of its cost price.¹²

In terms of standard software the rule set out in paragraph 60 of IAS 38 can be applied. Subsequent development costs, as in this case are upgrade and update or customizing, are subject to capitalizing only if as a result of these costs, there is certainty that the probable future economic benefits will exceed the estimated ones before that, and these costs are subject to a reliable evaluation, so they should be added to the carrying value of the asset. Many software companies in Bulgaria refer to this paragraph and include all these costs on their balance sheets. This, however, is inadequate treatment, because until 2004 there was a specified rule in SIC 6.4 *Costs of Modifying Existing Software*, which, after the supersession of SIC 6, was included in the text of IAS 16 Property, Plant and Equipment. It says that costs incurred to restore and preserve the initial capacity of the asset shall be recognized as current for the period. In other words, these are the updates. They should be reported as current costs, while upgrades should be capitalized.

¹¹ IAS 38.66

¹² There again in par. 67

The problems presented in this way, concerning accounting treatment of costs of developing application software derive not mainly from ignorance of the legal framework but from its incorrect application in companies in the sector.

Each of the presented problems results in preparing a financial statement that gives a distorted picture to external users of the financial position and financial results of the company. For example, improper capitalization of costs leads to subsequent unjustified increase in the carrying value of assets in the share of non-current assets and, at the same time, to incorrect presentation of cash flows from investment activities. Also, non-inclusion of the listed expenses in the Profit and loss statement for the period leads to unduly increase of the financial results. Improper allocation of costs for research and especially of costs of development is reflected in the misstatement of assets on the balance sheet on one side and distort financial results on the other, and so on. The outlined in this way problems lead to some conclusions.

In order to achieve true and fair presentation of objects, transactions and events in the annual financial report, which is a basic accounting principle, a change in managerial and accounting culture in Bulgarian entities is needed. To develop a reliable methodology for reporting, firstly, the management should, above all, clearly distinguish the phases in the development of a software product and properly to bind them to the phases of research and development which are laid down in accounting standards. In other words, the costs incurred after the preliminary stage of the project – in the ‘development of internal project’ phase and meeting the criteria for an asset should be capitalized. From the point of view of the development of software process, those are the costs after the ‘design’ stage, finishing with the creation of a detailed design of the program. Costs of the programming and final testing of software, which have been incurred after that, should be capitalized. Hence the presentation of costs in the annual financial report is similar. It is possible that upon the balance sheet date the project might not have been completed; then the already capitalized costs should be shown as assets in the acquisition stage. Of course, this should be done only if the intention of the management that project will be completed and revenue from it will be implemented is demonstrated. If the project is completed but not yet patented, it should be presented as a „product of development activities” on the balance sheet.

Unfortunately, in Bulgaria accounting still represents an inert applying of learned accounting practices dating decades ago. Despite the rapid development of the sector, entities largely do not apply the rules for capitalization of costs. They report them as current costs, which does not correspond to the overviewed legislation. Reports also lack further clarification regarding this vicious practice. Next, as illustrated above, one of the main components of the software cost price is the labour costs of the personnel. Its proper definition and inclusion is especially difficult if the employees work on more projects at the same time. Bulgarian companies still have not found a consistent solution to this problem. Of course, there are exceptions but this, unfortunately, is not the mass case. It is high time for the professional community to realize that accounting is above all a principle understanding of the economic essence of transactions, objects, events and their logical interpretation in correlation with the rules and approaches laid down in legislation. In Bulgaria, current accounting reports, debits and credits have become a cult of accountants and seem to have turned into an end in itself, pushing aside the used for centuries accounting principles such as the truthfulness and reliability of the financial picture, i.e. the entity's financial statement. It is time the accounting profession dropped its pure reporting function and took the place which law and economic reality gives to it, namely becoming part of the entity's management.