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ARTICLES

DEVELOPMENT AS AN IMPLEMENTATION METHODOLOGY OF REAL ESTATE PROJECTS

Prof. Dr Ec. Sc. Sergey Maximov

Real estate development issues, its interpretation, relevance and content are increasingly the subject of attention of Russian experts - economists and lawyers. The works devoted to the description of this phenomenon and its core content\(^1\) are gradually replaced by works with more in-depth analysis: highlighting distinguishing features of “real estate development” approach to investment and construction projects, determining the effectiveness of developer’s activity, and the core of its specific aspects\(^2\).

However, the idea of real estate development as a special way for implementing investment and construction projects is still underdeveloped: there are no papers determining the meaning and scope of the developer’s approach to the implementation of investment and construction projects; developer’s functions are not clearly distinguished from the functions of other project participants such as “investor”, “project manager”, “customer”, etc. This is how the author defines the meaning of “development”: “development is a form of integrated management process of investment and construction industry, in which the company-developer performs the functions of several market subjects in terms of classical approach to the organization of processes. Developer companies at the same time can be a customer- investor, for example, a designer and a contractor (or a subcontractor) - a list of functions is determined by the specific features of the project, as well as by the company’s capabilities. In practice, the use of real estate development scheme involves a number of specific management measures to optimize the project implementator’s internal costs and obtain synergies through his multi-functional nature \(\ast\). This approach is not indisputable and needs more precise definition. Thus, the author defines development as a form of organizing investment and construction projects, which, in our opinion, is permissible, but does not accurately reflect the meaning of development, since the form is still something external to the content. Second, as is evident from the above quotation, the developer is a subject that brings together a number of other participants, such as investors, customers, etc., and this is his hallmark. Finally, the meaning of the developer is reduced by the author to costs optimization and incomprehensible wording - “obtaining synergies through his multifunctionality.”

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In our view, this definition does not accurately reflect developer’s role in the real estate development projects, because it implies that by his activities the developer replaces the functions of other participants. In reality, however, he does not. A company or entrepreneur organizing the process of real estate development can, undoubtedly, act as an investor, but it only means that they appear in two economic status - as an investor and as a developer. The same can be said of other possible combinations: developer-contractor, developer-project manager, etc.

To reduce the developer’s task to costs optimization is also inaccurate. The meaning of development as a process of real estate development in the economic sense is to create an object with a greater value than the cost of the developed object and the development costs, that is to create added value. The added value is achieved through maximizing the value of the created object and minimizing the costs for its creation. It is due to this new value, an investor and developer get their income. The question is to reveal the developer’s role and function, due to which increment of value but not just cost reduction occurs.

Another point of view, which is formulated in the monograph by M. A. Fedotova, T. V. Tazihina and A. A. Bakulina is more appropriate. They define development as “a method of organizing the investment process that involves the arrangement of financing and implementing the real estate development project on time and within the appropriate limits for the purpose of commercial gain.” However, in this definition not all essential aspects of the developer’s activity are reflected, for example, such an important function as the choice of the most efficient design, the point from which real estate development, in fact, begins, is not mentioned. Similar point of view is taken by Yu. A. Bakrunov defining real estate development as a way to organize the investment and construction activity, however, attributing it only to income-generating real estate. The authors of the most in-depth textbook on the subject published in today’s Russia, also see development efficiency in reducing costs, noting that thanks to the real estate development “system,” the following results can be obtained: “Reduction in the duration of construction -7-25%, laboriousness of building -5 15%, construction costs reduction - 10-20%.”

Definition of the real estate development as a particular mode of implementation of the projects of real estate development seems to the author of this article to be mostly justified, at the same time revealing another aspect of this multi-faceted phenomenon and adding to the definition given in our earlier papers by pointing out that development - is a certain way, technology aimed to increase development projects effectiveness that can not be only reduced to lowering costs.

Short aphoristic definition of development as a means of real estate development implementation has been given by us in one of the works in this way: an ideal option is to choose the best design, implement it in the best way, and thereby ensure the maximum possible increase in property values. We will decipher and elaborate this thesis. We have

already noted that development as an implementation methodology for real estate project development cannot be reduced to the fact that it provides cost savings for the project. The meaning of real estate development is the increase in property value but developer’s qualification and his revenues are determined by his ability to maximize this growth. This predetermines the goal for the project developer: to maximize gains (this allows to ensure the project attractiveness to the investor) and maximize their own share in this growth.

The matter is to identify the sources of this growth and use them effectively.

We list the main ways to achieve these goals.

A basis to maximize the value of the projected object (note that, no matter how long of an ongoing controversy about the nature of value, the value of the created real estate object is actually the price, at which it can be realized in the market or capitalized rent generated by it) is its best matching the demand in the market, matching development to best land use principle. We should bear in mind that the core of this principle is that such a use of land is the best, which maximizes its value. The value of land, as is known, is determined by the rent generated by it. The given value of the land price, following the best use principle provides value added maximization and developer’s income. The best use principle would ensure the optimal combination of the land and the project: finding the best design for a given piece of land or a plot to suit the existing project. Ultimately, the goal is to ensure the identity between the parameters of the project (construction type - residential, commercial, project scale, project category, architectural and planning solutions, etc.) - land - market needs. In this case, between the land plot and a new building created on it, there should be an agreement, both qualitative and quantitative: a newly created combination of factors of production (land and factors unrelated to land) should match land characteristics as an immobile basis for any property. This agreement being reached, the result of combining factors of production is more than the sum of these factors thus providing gains maximized at best use of land.

How to obtain the best option at the initiation of the project? What is the algorithm of its choice? In formulating the principle of its best and most efficient use, the following definition is most often used: the best use is “such a land use option that is legally permissible, physically possible, economically feasible, and leads to the maximum value of the land.” However, this definition has little to say about how to identify the option and what criteria should be taken into account in this case. Referring to a well-known work “Analysis and evaluation of real estate returning interest” by J.Friedman and N.Ordway, who do not limit themselves to general definition and make an emphasis on the fact that in addition to these parameters the best use option must be “sufficiently substantiated” and explain its validity through such parameters as location potential, market demand, legal validity, site resource quality, technological and financial feasibility. As we see, the selection is based on “location potential” and “market demand”, because they are the factors that determine the users demand for a particular

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development of land and, therefore, the factors that determine the profitability of the construction project. We stress the point here that location is of primary importance, since it is, rather than the current demand, strategically guiding the future profitability of the facility and its competitive advantages. We mean the economic position, which is defined as the location of the land, the nature of its current and future environment, access to potential purchasers. It is the analysis of the economic location of the land and its potential that is the starting point for selecting the type of development, since they together with the market demand determine the yield generated by the property. Among other factors affecting the profitability of the development product, is the land resource potential (the “potential of the spot”, as some Russian developers have expressed) that determines the possible volumes of finished products (housing units, areas of commercial premises), which can be created with the legal restrictions on the land. An essential factor is a “competitive differential”, which is a distinct advantage of the land to others at any variation of development. As such, there may be the location of commercial facility at the intersection of major highways in the city, expanded parking, etc.

The task of the developer is to determine most accurately and fully the best land use, and on this basis - the project parameters: its scope, type of development, and its class. It is here we can appropriately apply the synergy concept, which is achieved through the optimal investment volumes (investment scale) and their form (variation of development) combining unrelated to land factors with land factors, and is expressed in maximizing the value of the land determined by the capitalization of rent brought by it or maximizing the present value of the created construction project.

Another activity of the developer, ensuring value maximization created by the construction project is to achieve the quality that corresponds to the object class or views of its potential users. Thus, quality serves as a comprehensive description, which includes the quality of architectural and design solutions, materials, technology, works, which together ensure object compliance with the user’s requirements. The focus on achieving the required quality is to be reflected in the design assignment, selection and terms of contractors engagement and ensured throughout the project life, as well as through the project control and financing.

Alternative choice of building an object, which meets the best use criteria, and ensuring the required quality of the created object maximize the value of real estate development, i.e. property resulting from the project. However, maximization of value alone does not mean achieving developer’s objectives - to maximize income, which is a part of the newly created value - the difference between the cost (actually, price) of the created facility and the costs to create it.

Consequently, the second group of tasks solved in the course of developing the project is minimizing project costs, including the costs associated with the use of debt capital (cost of capital).

To find the ways to reduce costs, it is useful to view the project as a process unfolding over time using scarce materials, labor, financial and information resources. Therefore, the task is, first, to reduce the time of the project implementation, and, secondly, the resources used, which must be assessed also in terms of the possible loss of benefits of their alternative use.
Solving these problems can be achieved by the developer through a series of activities, including the key ones:

1. Efficient organization of the project approval process with government agencies that requires professional project presentation to matching bodies, upholding the parameters of the project, which allows to reduce the time of the project implementation and, at the same time, increase its commercial appeal, for example, by increasing its tallness, building areas, reducing the administrative burden on the project.

It should be noted that building permits are among the most complex problems in the real estate development projects. Currently, the building permit must pass 51 procedures, and total deadlines to obtain a permit in Russia are on average 423 days8.

2. Effective organization of work with contractors, involving subcontractors with prices and time minimization of projects implementation with contract bidding, effective customer control with the assistance of engineering firms, the use of financial tools to encourage contractors enable to reduce construction time, improve quality of work, reduce costs and thereby increase the project added value.

An important tool to increase the effectiveness of construction project management is the use of professional project managers with the knowledge of building technologies and able to take on the role of technical project managers (directors), including the use of contractors, control over their work, acceptance of work, etc.

3. The effective organization of financing the project means the formation of low-cost, reliable, dynamically growing portfolio of financing involving the combination of various sources of financing and changes in the relationship between them as the project develops. The funding portfolio should provide in the first place the liquidity of the project, i.e. developer’s ability in all phases of the project to meet his obligations (for example, to contractors), and second, to maximize return on equity, i.e. such a use of external financing, on such a scale and in such terms that maximize the effectiveness of equity capital due to the positive financial leverage.

The sources of funds for real estate development projects are developer’s equity capital, direct investors’ means, borrowed current assets (including banking credits, means of financial institutes such as unit investment trusts), obtained funds (including obtained funds by the agreements of equity participation), increase of the share capital (including through IPO).

Each of these sources has its advantages and disadvantages, its scope and application and the most appropriate application period to the extent of the project. So, real estate developer’s own means, which as a rule, make up a smaller share of the total funding for the project, can be expediently used in the early stages of its life cycle: design and project. The main source of funding for the project during the construction phase are borrowed funds and funds of direct investors with the increased share of the latter upon completion of the project. The developer should be able to combine these sources as the project develops, avoiding over-reliance on project funding from a single source and minimizing the fees to raise funds.

4. Effective sales (renting) of the created object with specialized brokerage firms, an increase of sales capacity through the use of different ways of organizing sales: online, using social networks, field sales and other forms of promoting created goods.

Importantly for the effective organization of the project in general, and to minimize the use of paid financial resources, is the selection of early pre-sales of the object (in one legal form or another), and the use of a flexible pricing policy providing discounts, installment plans to raise funds of the future users.

Concluding the review, allowing to determine real estate development as a special way of development projects implementation, we present the summary of the previous analysis as a following figure (see Figure 1). It suggests, the developer aims to maximize his own revenue (including him as an investor.) The source of this income is the value added created during the project as the difference between the value of the object created under development and the project costs. Consequently, developer activities should be aimed at maximizing the value of the object and costs minimization. Main directions and solutions to these problems have been presented above.

Summarizing the analysis of the main aspects of the “real estate development” concept made in the present, previous and mentioned above articles, we state them again. The “real estate development” concept reflects three interrelated aspects of the phenomenon addressing three key issues related to the development of the real estate as one of the key processes in the property market: first, development is a process of qualitative transformation of the material properties (WHAT), and secondly, it is a professional activity in the property market, the object of which is to initiate the process and organization of development (WHO), and third, it is a certain way of implementing development projects providing maximization of the created added value (HOW). Graphically, their relationship is represented in Fig. 2.

Among other components, real estate development is an indispensible element of any property market and its qualities influence, to a large extent, the prospects of the Russian market.

**Literature**


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9 Such an important issue as the acquisition of land or rights to its construction whose costs are a considerable part of the development is outside of this article. It requires special treatment and the author intends to dedicate to it a special article.
Fig. 1. Developer’s goals and objectives when implementing development projects

Fig. 2. Three aspects of the concept “development”

DEVELOPMENT AS AN IMPLEMENTATION METHODOLOGY OF REAL ESTATE PROJECTS

Prof. Dr Ec. Sc. Sergey Maximov

Abstract

The article considers some features of development as a real estate projects implementation methodology and techniques improving the projects development performance.

Keywords: development, value-added, best use, costs, project financing.

UDC 330.322.12; BBK. 65.2/4
IMPLEMENTATION OF PROGRAMMING LANGUAGES ON THE PLATFORM .NET IN DEVELOPING SOFTWARE APPLICATIONS

Assoc. Prof. Dr. Vladimir Sulov, PhD

Introduction

The platform.NET (pronounced “dot net”) is an integrated strategy and a range of products of the company Microsoft, including environment for implementation of programs, specialized servers, development tools and programming languages.

.NET is announced as a new initiative in the year 2000. To this point Microsoft possesses the main market share for development tools as a whole. One of the main objectives of the initiative is to take up more active positions especially in web development capabilities.

According to Microsoft, .NET is a strategy for connecting information, people, systems and devices through software and embraces everything that the business needs in order to develop and implement integrated information architecture: servers for hosting services; development tools; applications which make use of them.

Some of the basic characteristics of the initiative .NET are the following:

• It is a new platform for developing modern, object oriented applications in plenty of programming languages;
• It provides a class library which is independent of languages;
• It allows initiation of web services;
• It guarantees access to allocated data.

The characteristics exposed correspond to the new development trends such as allocation, components, software services and redirection to web. As a result of the provided possibilities .NET is affirmed as one of the most widely used platforms for software development.

The variety of technologies and devices of the platform.NET and their efficient use in practice requires familiarity with its set of tools.

On this basis, the objective of this article is to introduce briefly and compare programming languages, supported by the platform.NET, and draw conclusions concerning its viability in developing different types of software applications.

Nature of the platform .NET

The platform .NET consists of a multitude of different technologies and products: .NET framework, specialized servers, development tools, development languages and hardware (client) devices. The supported types of applications and their distinguishing characteristics are closely connected with the abilities of .NET framework, which is at the core of the platform .NET.

.NET framework is a component of Windows, which provides a programming model and environment for code implementation and monitors applications performance.

The .NET applications consist of the so called “managed code” (“managed code”). After writing them in high-level programming language, they are transliterated to an intermediate code (in intermediate language, called MSIL – Microsoft Intermediate Language), which is stored in a pseudo-executable file. The intermediate code cannot be executed directly from the processor. If an attempt arises to start a pseudo-executable file, it is compiled to a machine code, and an additional code is added, which supervises (manages); hence, it gets its term “managed code”.

As a main advantage of code managing, one can specify the opportunity for better protection from illegal activities of the program fulfilled and safeguarding against memory loss. However, at the same time, this leads to a lag in the speed of program implementation.

.NET framework supports several types of applications, focused on developing applications for Windows, mobile devices and Internet. The applications for Windows may be console (in text regime), with graphic interface, libraries, drivers and services. Mobile devices applications are designed for cell phones and tablets. For Internet ASP.NET web applications and web services can be developed.

The variety of application types which is supported by the platform .NET, is complemented by their contingent scale, application domain and other factors. All this determines the necessity for the appropriate choice of programming language in every single case.

.NET programming languages

The platform .NET is designed in a way that it supports a wide range of programming languages. In theory, every high-level language can be compiled to MSIL (viewed above). The Microsoft company, in its official capacity, has implemented supports and offers by means of Visual Studio .NET and the compilers for .NET the next programming languages:

- C/C++;
- C# (pronounced “sharp”);
- BASIC (also called Visual BASIC. .NET in order to differentiate clearly from the traditional BASIC);
- F# (pronounced “F sharp”).

The term framework is translated into Bulgarian specialized literature in many different ways – as “frame”, “environment”, “platform”. The present article prefers for clarity to use it in its English variant.
Till 2005 inclusive a language named J# (pronounced “J sharp”), based on Java, was offered but because of lack of developers’ interest its support is terminated.

A study on the most widely spread programming languages\(^5\) (see table 1) shows that the programming languages, supported by the platform .NET, are among the most popular ones in practice (positions 1, 4, 5, 10 and 16). This necessitates the developers’ familiarity with the characteristic features of the languages and technologies offered.

\textbf{Table 1}

\begin{table}[h]
\begin{tabular}{|c|c|c|}
\hline
\textbf{Position} & \textbf{Programming language} & \textbf{Popularity of language (at total sum of languages 100\%)} \\
\hline
1 & C & 18.3\% \\
2 & Java & 17.3\% \\
3 & Objective-C & 11.3\% \\
4 & C++ & 6.9\% \\
5 & C# & 6.5\% \\
6 & PHP & 4.2\% \\
7 & (V)I(sual) BASIC & 2.8\% \\
8 & Python & 2.2\% \\
9 & JavaScript & 1.9\% \\
10 & Visual BASIC .NET & 1.8\% \\
\cdots & \cdots & \cdots \\
16 & F# & 0.6\% \\
\hline
\end{tabular}
\end{table}

Every language mentioned above can be used to develop all types of applications, inherent to the platform .NET, but there are some specifics in choosing the programming language for every particular task.

\( ^5 \) The study encompasses more than 200 programming languages.

The most important difference between the programming languages, implemented by Microsoft, is that only C and C++ support compilation to unmanaged machine code. Although these characteristics make languages appropriate for development of system software or software with specific high demands, most authors think that this does not diminish their significance and capabilities when developing any kind of software, including application with modern user interface\(^7\) and mobile applications\(^8\).

To a great extent the language C is a subdivision of C++, i.e. every program in C is, in fact, a program in C++. On the other hand, not every program that is written in C++, uses its extended capabilities (mainly object oriented programming). The largest part of the programs written in C++, in fact use only the subdivision of capabilities, which are common for C and C++, on account of which we can say that these programs are written in C. For this reason, in the present article the two languages will be viewed together under the symbol C/C++.

Except for being the only option for developing classical applications compiled in advance, the language C/C++ retains the support of libraries Microsoft Foundation Classes (MFC) and Active Template Library (ATL). On this account, the core characteristic capabilities, which C/C++ gives are:

- An opportunity to write managed and unmanaged code, as well as combined applications (i.e. simultaneously managed and unmanaged code in the same application);
- Direct access to Windows resources and respectively a complete support of Win32 API (Application Programming Interface, i.e. the functions of the operating system itself), including structures, functions, messages, etc.
- Supports the development of specific types of applications such as drivers, dynamic and static libraries, system services;
- A powerful language with potential for object oriented programming (only for C++, including patterns, multiple inheritance), indices;
- Optimizing compiler and others

We think that the exposed characteristics of the language make it appropriate for Windows applications, which require high speed and/or direct access to the functions of the operating system (OS). The C/C++ resources for creating combined applications from managed and unmanaged code allow quick interface design for specific applications by means of managed code, while particular parts of the code, which need higher performance speed and/or direct access to Win32 API, should be fulfilled compiled in advance and unmanaged.

The analyses of C# and BASIC come to the conclusion that there exists “a co-evolution … which minimizes the differences between the two languages”\(^9\). To a large extent they are similar in reference to the core capabilities they afford\(^10\):

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• Generate (only) intermediate and subsequently managed code;
• Efficient support of .NET platform;
• easier syntax;
• quicker design of interface and lighter use of Windows facilities.

The above mentioned makes these programming languages appropriate for relatively smaller and peculiar Windows applications, which do not require very high performance speed and do not have large calculations and business logic. Of course, they might help create more sizeable applications if restrictions concerning speed are not significant or if the processing is done on different machines by technologies of the type client-server.

With reorientation to Internet the basic use of the above mentioned languages is, indeed, in developing web applications.

Still, these three programming languages have their differences, too. Some of them will be reviewed in brief.

C# is based on the syntax of C/C++ and one can say, is a link between the traditional C++/Visual C++ and the efficiency of Visual BASIC. According to its potential, it is the most powerful language, optimized for the platform .NET.

Visual BASIC .NET is based on the traditional syntax of BASIC, with unique characteristics such as initialization of variables, non defined variables, implicit public access, etc.

The language F# has facilities that are analogous of C# and Visual BASIC, but its peculiar functional characteristics make it applicable mainly if

there is a need for more complicated mathematical calculations, recursion, algorithmically complex analyses of a large scale of data.11 These peculiarities together with its hard syntax determine F# small scale of spread, mainly for specific parts of applications.

On the basis of a large number of published tests and studies12, as well as the above explored main characteristics of the programming languages on the platform .NET and opinions of its analysts, a brief generalizing comparison between them is drawn in table 2.

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The process of developing different types of software applications, as well as the applications themselves, has specific requirements concerning programming means and languages. Unfortunately, it is quite common for developers companies to use languages which their experts know well from previous projects, though, they are not appropriate for this particular case. This brings about inefficiency in applications development and functioning. The available research as regards programming languages lay down their basic characteristics, facilities, syntax and in some case – advantages, but they do not give the right idea about their most appropriate use. To get over this problem, we think, it is advisable to define the basic types of applications, their characteristics and requirements because they are determinant when choosing the proper programming language.

**Types of applications and selection of programming language**

On the basis of the implemented technologies all types of applications that are supported by the platform .NET were exposed in the presentation laid above. On the other hand, we suggest that the software applications should be classified in several main groups, according to the combination of two of their most significant

### Table 2

**A comparison between programming languages in the platform .NET**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>C/C++</th>
<th>C#</th>
<th>BASIC</th>
<th>F#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managed code generation</td>
<td>Yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Unmanaged code generation</td>
<td>Yes</td>
<td>no</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>Combined code generation</td>
<td>Yes</td>
<td>no</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>Support of Win32 API</td>
<td>Total</td>
<td>partial</td>
<td>partial</td>
<td>partial</td>
</tr>
<tr>
<td>Development of web applications</td>
<td>No</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Code execution speed</td>
<td>Excellent</td>
<td>good</td>
<td>good</td>
<td>good</td>
</tr>
<tr>
<td>Development speed</td>
<td>Very good</td>
<td>excellent</td>
<td>excellent</td>
<td>Very good</td>
</tr>
<tr>
<td>Syntax–base</td>
<td>C/C++</td>
<td>C/C++</td>
<td>BASIC</td>
<td>ML/Lisp</td>
</tr>
<tr>
<td>Object-oriented facilities</td>
<td>excellent (only C++)</td>
<td>Very good</td>
<td>good</td>
<td>good</td>
</tr>
<tr>
<td>Functional programming</td>
<td>No</td>
<td>no</td>
<td>no</td>
<td>yes</td>
</tr>
</tbody>
</table>
characteristics: whether they are local (also called “desktop”) or web and whether they are relatively complex or simple. In this way we can define four types of applications:

- simple local applications;
- complex local applications;
- simple web applications;
- complex web applications.

Although it is difficult to differentiate accurately between relatively more complex and more simple applications, it is assumed traditionally that applications having more than 100 000 lines of code and/or inclusive of complicated calculations, hard to develop and implement algorithms, etc. are considered “complex.” On the other hand, applications having fewer lines of code and/or more elementary logic are considered “simple.”

The simple local applications have limited functional scope, more elementary logic, predominantly using read-only libraries, and/or external servers, and implemented on the local computer. A typical example for simple local applications are the so called prototypes in which before signing the real contract with a certain client a demonstrative version with limited functionality and interface is developed in short terms. The purpose of this is to obtain the client’s approval and feedback at the earliest possible stage. Other similar applications are the client-server type, in which the complicated data processing and data storage are not performed on the local computer but the task is done by the centralized server. The local applications provide the required interface for data access (e.g. in a network warehouse or accounting software). It can be concluded that the simple local applications (particularly the prototypes) require a programming language which allows quick development even though the code received is not the optimal one as regards the speed of performance.

On the other hand, the complex local applications are applications which have a huge code base, a wide range of functional tools, implementing sophisticated algorithms, elaborate calculations, performed on the local computer. Typical examples of such applications are the operating systems, themselves, the office software suite (e.g. Microsoft Office), the graphic editors (e.g. Corel DRAW, Adobe Photoshop), the software for video processing (e.g. Adobe Premiere, Avid), processing environments (e.g. Visual Studio), the data basis management systems (e.g. Oracle), more sophisticated games, etc. Applications such as drivers and system services fall into this category, too. The complex local applications require first and foremost high code performance, full access to operation system tools, including the lower levels.

Even the considerable redirection towards web development, one can still affirm that web applications as a whole are relatively more elementary from the local applications. Therefore, their division into simple and complex is provisional to a certain

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extent. Their main characteristic is that they are implemented remotely through the web server mediation.

The specific nature of languages used for description of web pages, which are text-based and have more limited functionality, is conductive to some traditional difficulties mainly in fulfilling interaction with clients. That is why when developing all types of web applications, it is necessary for the languages and tools used for programming to facilitate and speed the interface design to the highest degree.

One can assume that simple web applications, similar to simple local applications, have more elementary logic, too. Their function, as well, is rather in the dynamic generation of web pages and input and output of information (e.g. in/out of data base), but without any considerable processing of it (such as a company site with representative functions, electronic shop, etc.).

**The complex web applications** functionally are close to the local applications, because they implement business logic and computations at higher degree but offer web interface to their tools. Examples for such applications are the systems for sales analyses and customer behavior in an electronic shop, web based data systems in companies, web based systems for support of decision making, etc. The complex web applications usually need more powerful and flexible language and if possible, higher speed of code performance.

In compliance with the basic characteristics of programming languages (see table 2) and the specified requirements of developing different types of applications, in table 3 we suggest the most appropriate versions for a programming language choice. Despite the fact that the present study is directed to the platform .NET, alternative technologies and languages which might successfully be used for the respective types of applications are included as guidelines.

<table>
<thead>
<tr>
<th>Application type</th>
<th>Main requirements</th>
<th>Appropriate .NET language(s)</th>
<th>Other appropriate languages/technologies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple local application</td>
<td>Quick development</td>
<td>C#, BASIC</td>
<td>Delphi (more rarely Java)</td>
</tr>
<tr>
<td>Complex local application</td>
<td>High code speed, access to OS tools</td>
<td>C/C++</td>
<td>C++ (other compilers)</td>
</tr>
<tr>
<td>Simple web application</td>
<td>Easy development of interface</td>
<td>C#, BASIC</td>
<td>PHP</td>
</tr>
<tr>
<td>Complex web application</td>
<td>Easy development of interface, relatively more powerful language</td>
<td>C# (more rarely BASIC)</td>
<td>Java (more rarely PHP)</td>
</tr>
</tbody>
</table>
The languages C# and BASIC can be used for relatively simpler local applications after the developer chooses the preferred syntax. These languages provide the required development speed.

For the time being there is no real alternative for the development of complex local applications, where the language C/C++ is the most appropriate and widely used one, because of its speed of generated code and the access facilities to the operation system.

Since web applications cannot be developed using C/C++, in this case the possible options are the languages C# and BASIC. They both allow easy development of user interface. C# may be preferred for more complicated web applications because it is more powerful particularly in the domain of object-oriented facilities.

The language F# is not shown in table 3 because its characteristics have already been reviewed. It is considered not appropriate enough for developing whole applications, but for separate modules which might take advantage of its peculiar tools, instead.

The increasingly wider spread of mobile devices and applications for them should be noted as a topical trend which in the near future may cause a breakthrough in the use of programming languages. For the time being Microsoft development tools can only be used for Windows mobile devices which on their behalf have a very small share\(^4\), to influence the use of programming languages.

**In conclusion**, it should be highlighted that the choice and use of an appropriate programming language is of fundamental importance in developing software applications. The analysis of the basic programming languages of the platform .NET points out that they provide variable features and tools, which at some aspects are similar whereas differ significantly at others. This implies that one cannot project the best, all-purpose programming language but look for their feasibility as regards the specific requirements.

On that account, the suggested here classification of applications as regards their function and complexity determines the foundation of a technique for appropriate programming language selection. The right choice of a programming language helps the companies – developers of software as it lays the foundations for raising efficiency of software development process and enhances the quality of the end-product. The conclusions drawn can also be applied in the process of training students, as well as experts in practice.

IMPLEMENTATION OF PROGRAMMING LANGUAGES ON THE PLATFORM.NET IN DEVELOPING SOFTWARE APPLICATIONS

Assoc. Prof. Dr. Vladimir Sulov, PhD

Abstracts

The platform .NET is an integrated strategy and a range of products of the company Microsoft, which includes an environment for software programming, specialized servers, development tools and languages for programming. .NET is proved to be the most widely used platform for developing software all over the world. The purpose of the present article is to briefly introduce and compare programming languages supported by the platform .NET and draw conclusions concerning their viability at developing different types of software applications.

Keywords: software applications, platform .NET, languages for programming.
EDUCATION FRANCHISE – LEGAL ASPECTS

Assoc. Prof. Dr. Margarita Bachvarova

In line with modern social trends reflected in the Higher Education Act (HEA) the right of higher schools to practice educational franchise has been regulated. Thus, legislation created a new projection of academic freedom which finds its lawful expression in the freedom of association, cooperation and joint and innovative operations.

The main purpose of the present article is to analyze the concept of “education franchise” which has found its way in current legislation and define its basic characteristics from a legal point of view. Relevance of the topic is driven by the limited regulatory basis which calls for a theoretical analysis of the concept. Object of study is the legal framework, regulating the education franchise as a social phenomenon. A further object of study is the legal characteristics of education franchise.

To achieve the above objectives, the author will conduct the following research tasks: a) examine the concept “education franchise”; b) try to elicit its legal nature; c) put forward ideas to improve the existing legislative basis;

The methodology of the present study seeks to conduct a scientific analysis on the available sources and regulative basis, by applying the comparative approach, and methods of induction, deduction and formal logic.

The author defends the thesis that the concept of ‘education franchise’ being a subcategory of the generic category ‘franchise’, exhibits certain specific features which require the introduction of a detailed legal basis.

1. Implications of the concept ‘franchise’

To elicit the specific characteristics of the ‘education franchise’ it is necessary to examine the concept of ‘franchise’ as a generic category. In its early beginnings, franchise was defined as “a privilege of public nature officially granted to a person or group by the government”\(^1\) or “permission to perform a particular kind of trade activities”\(^2\). In the legal theory, the concept of franchise is viewed from various aspects but legal norms fail to offer general criteria to clarify the phenomenon, rather they regulate the tax consequences of the business\(^3\). Therefore, to elicit the specific content of the concept ‘franchise’ we need to apply two basic definitions and regard it from an economic and legal point of view.

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2. [http://www.oxforddictionaries.com/definition/english/franchise](http://www.oxforddictionaries.com/definition/english/franchise)
From an economic point of view, franchise is defined as a system of marketing goods or services and/or technologies, which involves close and permanent cooperation between legally and financially independent business entities. The franchisor gives the franchisee the right and assigns the obligation to use and operate the business format and brand in accordance with the franchisor’s business concept.\(^4\)

**From a legal point of view,** franchise is a business transaction conforming to the basic criteria set in the trade legislation. The franchise agreement is the legal format of any trade activity aiming to generate profit.\(^5\)

The education franchise is a contemporary phenomenon which is the subject of specific legislation. Under the current HEA, universities in Bulgaria have the right to open branches in foreign countries and cooperate for the purposes of joint training and education franchise. The concept is further defined under the Higher Education Act (HEA)\(^6\) and its additional provisions; it is formulated as a set of intellectual property rights, including course programs and/or curricula which one university or college offers for the benefit of another against consideration. The above definition is not new to Bulgarian legislation. In fact, it has come about as poor adaptation or inaccurate interpretation of the definition under par. 1, item 10 of the Additional provisions of the Corporate Income Tax Act\(^7\). Such overlapping of legal terms is completely irrelevant due to the specific peculiarities of the educational sphere.

From a practical point of view, franchising is a legal means to conduct or run a business. It is therefore based on principles such as: autonomy of will in negotiations; independence of participants in the franchise system; consideration of relations and supervision by the franchisor. Unlike the economic sphere\(^8\), where franchise is often practiced, in the sphere of education there are specific legal regulations to be considered. These relate to: regulatory requirements for the accreditation of higher education institutions, state intervention in regulation of education\(^9\), funding from the state budget, administrative approach where public policies should be addressed.

### 2. Legal characteristics of education franchise

The following characteristic features of education franchise can be systematized from a legal perspective, using the **comparative-legal approach.**

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\(^4\) [http://franchising.bg/business/franchising_dictionary.html](http://franchising.bg/business/franchising_dictionary.html)


\(^6\) Additional provisions of the Higher Education Act.

\(^7\) Under § 1, item 10 of the Additional Provisions of the Corporate Income Tax Act, “franchise” is defined as a set of industrial or intellectual property rights, which cover brands, brand names, trademarks, logos, models and designs, copy rights, know-how or patents, given by franchisor to the franchisee for the use of an established business format or selling goods and services, against paying an agreed fee.

\(^8\) In some countries, the term educational business is used, particularly for training of children, even though the term is not well established in today’s economic practice. [http://www.entrepreneur.com/educationfranchises/](http://www.entrepreneur.com/educationfranchises/); [http://www.franchising.com/education_franchises/](http://www.franchising.com/education_franchises/), [http://www.kumon.co.uk/franchise-opportunities/index.htm](http://www.kumon.co.uk/franchise-opportunities/index.htm)

\(^9\) Under the Higher Education Act - **Art. 9,** (1) the state realizes control over higher education through the National Assembly and the Council of Ministers.
Firstly, education franchise applies to an area that is not a typical business or economic environment. As we know, higher education has some well-established principles and assets. The academic environment typically features knowledge, experience, creative ideas, innovativeness and a pioneering spirit. The question is still debatable as to what extent this academic environment could be adapted to match a business format framework and leased to another user on a contractual basis. Education franchise is regarded as a form of academic self-governance. Under Art.21 of HEA, higher schools have the right to enter into partnerships with other educational institutions to attain legitimate targets.

Secondly, the education franchise is made possible on the basis of contractual agreements between entities which have a university status. Under Art. 6 of the Higher Education Act, education franchise is defined as a legal independent entity with a specialized scope of activity. Thus for example, it aims at educating and training specialists who would be able to develop and apply the scientific knowledge in all walks of life; improve their qualification and further advancements in science, culture and innovations. Regardless of its type or format, the franchise offers gains for both parties and because of this it is treated as a business operation. In general terms, the franchise agreement is concluded between salesmen and requires an established business format based on industrial property rights. More specifically, the education franchise involves entities which are non-profit organizations from a legal point of view, whose activities are subject to accreditation by the state. In order to place the education franchise on the agenda of the educational institution, it is necessary to redefine the existing legislative basis. At this stage, franchise in higher education is discussed under Art. 21 of the Higher Education Act (HEA) and is seen as a feature of academic autonomy.

Thirdly, participants in education franchise are institutions established by an act of the National Assembly in Bulgaria. Under Art.9 of the Higher Education Act, it is explicitly stated that the National Assembly shall make decisions to establish, transform or close higher schools. It shall determine the state budget subsidy for each public higher school on an annual basis. Also, the state sets out a strategy for development in line with the country’s targets and priorities and determines measures for their fulfilment.

Fourth, education franchise is realized on the basis of contracts signed between higher schools in Bulgaria, and/or foreign universities. Accordingly, relationships with foreign universities are regulated by Bulgarian law unless the certificate of training is issued by the foreign university with which the contract was signed. This serves to show, that education franchise is a form of international cooperation based on the principles of equal partnership and mutual benefit. The subject of contract represents the right to offer an established method and model of training in terms of approved and accredited school curricula. This means, that the franchisee is

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10 This is a common rule applied to all higher schools, regardless of their ownership: public or private.
11 § 4 item. 4 of the Additional Provisions of the Higher Education Act
12 http://education.actualno.com/. Four Bulgarian Universities are participating – Medical Academy - Varna, Sofia Medical University, Varna Open University and Sofia University of National and World Economy, through their Cyprus partner, “Casa College “ in Nicosia, bound by a franchise agreement.
not only granted a share of the methodology of educational and training services / know-how/ of the franchisor but gets a market share of the franchisor.

**Fifth, during the accreditation procedure**, in the self-evaluation report of the National Evaluation and Accreditation Agency (NEAA), disclosure of information on joint projects and contracts and education franchise should be made imperative. This stipulation is explicitly provided for under Art. 29, par. 3 of the rulebook of the National Evaluation and Accreditation Agency /NEAA/. The legal framework appears to be laconic and incomplete. Education franchise contracts for example, are discussed solely as part of the documents for program accreditation. Furthermore, the powers of the accrediting authority regarding these contracts are not defined by the law. It is therefore necessary to set forth due regulations on franchise contracts in higher education and procedures for signing and control over implementation of such contracts. A possible regulatory solution to the problem is to enter similar contracts in a register with the Ministry of Education. Each subsequent amendment to the contract for education franchise should also be subject to registration. We believe that such register will ensure visibility of contracts signed by universities and transparency of information both in academic and in government structures. In addition, such register may be useful in exerting control over contract fulfilment and spending of funds during its implementation.

3. **Summary**

For the proper implementation of legislation, it is essential to specify the rights which a university grants to another party in terms of the education franchise agreement. From the point of view of the commercial and legal theory, the franchise agreement contains the so-called franchise package, embracing a set of industrial and intellectual property rights, trademark, know-how, etc. In its legal nature, the franchise agreement is of mixed character, as it combines the features of a production contract and a license agreement for use of the trademark which governs the relationships between the parties. In a franchise agreement, it is essential for the franchisor to possess industrial or intellectual property rights that are generally subject to registration in the Patent Office. In the absence of such rights, a qualification for nullity of the deal should be applied, in accordance with the provisions of Art. 26 of the Obligations and Contracts Act. This leads to the conclusion that a higher school which meets this theoretical construct is one that has received a positive accreditation and disclosed its franchise contracts during the accreditation procedure in compliance with Art. 29 of the National Evaluation and Accreditation Agency (NEAA).

Another important point to make is that franchisees normally act on their behalf and at their own expense, thus bearing the full risk of the operation. This feature is borrowed from the purchase agreement established in Art. 258 of the Obligations and Contracts Act. By agreeing to operate the franchisor’s business format, the franchisees also agree to use the franchisor trademark on all their products and services. In

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13 Obligations and Contracts Act.
commercial practice the franchise agreement is a consensual and causal legal transaction which is bilaterally binding. Its bilateral or reciprocal character is defined by the joint rights and liabilities of the parties. Also, subject of the franchise agreement could be any organizational, logistic, technological or other support provided to the franchisee by the franchisor. Consequently, the education franchise can be said to share similar or identical characteristics which can serve as a legal criterion to distinguish between this type of contract and other contracts for cooperation among universities. A major difference however is the fact, that under an education franchise agreement, the franchisee is granted the right to use the franchisor’s course programs, know-how, knowledge and expertise in the training of specialists, against a certain fee. The training itself is realized using the franchisee’s efforts, facilities and academic staff (teachers). From a legal point of view, these two types of franchise agreements differ in terms of their subject, purpose, and the rights and obligations of the participants.

With contracts for cooperation or twinning contracts in higher education, the efforts of two or more learning institutions for training students are brought together where each institution has clearly defined responsibilities. Some of these responsibilities may include holding a reception, staff distribution, tuition fees, use of school facilities, etc. The core of such an agreement is basically collaboration between participating universities with a focus on student training, where the efforts of both parties are involved. With education franchise agreements, the rights for industrial or intellectual property are granted to the franchisee by the franchisor on a long-term basis to be used for the preparation and training of specialists at tertiary level. In practical and application aspect however, the scope of individual contracts varies considerably.

The purpose of agreements for cooperation is to improve the quality of education or to enhance the use of resources for one of the parties. Profit distribution also follows a different pattern. In this case, the principle of profit distribution is based on individual participation defined as a percentage as of the date of contract conclusion. With education franchise, it is a common practice for the franchisee to pay a fixed amount of money at the time of contract conclusion and a percentage from annual profit generated.

A major distinction is that the franchisor has the right to exert significant control over the business of the franchisee, preserving its economic and legal independence at the same time. In comparison, contracts for cooperation are based entirely upon the principle of equality and equal treatment of partners.

In view of the above considerations on education franchise we can draw the conclusion that it is necessary to adapt and improve the Bulgarian legislation. On the one hand, it is appropriate to establish a detailed and systematic legal basis with explicit rules that can be applied to all universities. At present, there is no clarity as to the general requirement for a license and trademark ownership which are essential elements of the franchise agreement. There is another debatable issue which focuses on the subject of franchise agreements in higher education. Universities are known to

\[14\] The franchise agreement between Sofia Medical University and CasaCollege in Nicosia, dated December 5th, 2012 is a good case in point. http://newsbg.eu
have a special legal status which calls for specific procedures in the decision making process and signing and implementation of contracts. From this perspective, education franchise can help improve further education services. Regulation of education franchise is a necessary step to be taken by our legal system towards a transnational education, driven by the process of globalization of national economies and creation of European space for higher education.

EDUCATION FRANCHISE – LEGAL ASPECTS

Assoc. Prof. Dr Margarita Bachvarova

Abstracts

The main purpose of this article is to analyze the term education franchise that was introduced to the legislation, and to draw its distinctive characteristics from a legal point of view.

The defended thesis is that the term education franchise is a type of franchising as a generic category, and possesses distinguishing features which call for the implementation of a detailed legal framework.

As a result of the scientific analysis the author assumes the position that the legislation needs to be improved by implementing a detailed legal framework. Consequently, unification is achieved in the enforcement of law and the improvement of the quality of the provided educational services.

Keywords: Franchise, education, right, agreement.
REVENUE RECOGNITION IN THE HOUSING
AND RESORT CONSTRUCTION - ISSUES AND PROSPECTS

Assist. Prof. Ivan Apostolov

Introduction

For decades revenues have been regarded as a key indicator of the financial condition and capabilities of every enterprise. In view of their importance to the owners, managers and other stakeholders, it can be presumed that the accounting standards on their recognition, naturally, have developed in the course of time in such a way as to be clear and coherent for the various transactions, enterprises and states. Regrettably, today’s standards on revenues feature none of these qualities, as a result of which the parties concerned are forced to accept complex economic decisions. Owing to the joint effort of the International Accounting Standards Board (IASB) and the Board of the US Generally Accepted Accounting Principles (GAAP) of the USA (the two Boards for short), which have been working “towards convergence for the past 10 years”\(^1\), and in view of the fact that they jointly dominate accounting on a global scale, “every big change in them will have an enormous effect on the parties concerned – the consumers”\(^2\).

The aim of this article is to reveal a big part of the problems and the conceptual differences in the standards, concerning the technology of determining and recognizing revenues, causing the need to improve, harmonize and replace the existing standards regulating revenue recognition from the contracts for housing and resort construction.\(^3\)

1. Theoretical as well as practical and applied issues of revenue recognition.

The frequently quoted discrepancy between the International Financial Reporting Standards (IFRS) and the Generally Accepted Accounting Principles (GAAP) of the USA, is most evident in the area of revenue recognition. The Generally Accepted Accounting Principles of the USA contain more than 100 explanations and guidelines regarding revenue recognition and profit, which in many cases are industry-specific, and turn out to be contradictory and difficult to grasp.\(^4\)

In their turn, although the International Accounting Standards (IAS) have comparatively few requirements on revenue recognition, the two main standards IAS 11 Construction Contracts, and IAS 18 Revenue, turn out to be difficult to understand

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\(^3\) From the range of contracts under study there have been excluded public procurement contracts.
and apply. They can provide different treatment of similar transactions, because with the one revenue recognition is on the basis of the transfer of risks, benefits and control, while the other is on the basis of the activities or the expenses incurred at a particular moment in time - the date of the Statement of Financial Condition.  

IAS 11 details the accounting of specific deals, and in it “too concisely there are regulated the combined and segmented contracts, the accounting of contractual options and stages, which would lead to difficulties in the application of the standard”.

IAS 18 is a broad-spectrum, somewhat vague document, in short something like guidelines of the kind “how to”. In addition to that, it is composed of a small number of explanations with respect to combinations consisting of many elements – multielement (multicomponent) contracts.

Since both were revised for the last time in 1993 in accordance with the Project for improving comparability, they are among the oldest standards within the entire set of International Financial Reporting Standards.

This necessitated that the two Boards attempt to change the situation, by replacing the existing standards for revenue recognition under construction contracts. For that reason there was initiated a joint project – revenues from contracts with customers (The Project, for short) in order to clarify the principles on their recognition and to develop a generally accepted standard.

Some of the respondents of the project, and its amendment of 2010 questioned the need to replace the existing guidelines on revenue recognition, and in particular the requirements, which seem to be working relatively well in practice and provide useful information on the different kinds of contracts, for which they are intended. The two Boards recognized that it would be possible to improve many of the existing requirements on revenue recognition, without replacing them. Nevertheless, even after the changes in the US principles and the IFRS, those will continue to lead to contradictions and could not ensure a stable framework for solving the issues on revenue recognition in the future. Besides, the replacement of the existing requirements would not lead to achieving the goal of the project, namely the creation of a common, principle-based standard for the revenues for GAAP of the USA and the IFRS, which enterprises would apply consistently in the various industries, jurisdictions and capital markets. That, in turn, is the next, successive step towards the achievement of the main goal – a single, common set of high-quality, global accounting standards.

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8 It is not by accident that here is used the term revised and not amended, since such comprehensive revision of the formulations in the above standards was carried out for the last time in 1993 // http://www.sec.gov/rules/concept/34-42430.htm, (09.2013).
Without any claims on exhaustiveness, there could be drawn the following more important theoretical as well as practical and applied issues from the currently effective standards regulating revenue recognition from the contracts for housing and resort construction, namely:

1. The enterprises run into difficulties in determining within the scope of exactly which accounting standard there falls a particular contract/contractual component for construction, and thence which criteria and when those are met;

2. There is no definition of control, and this leads to confusion along with its comprehensive application with the risks and the benefits, while the Project speaks only about control and gives detailed and clear explanations of what it is and when it is considered as transferred to the customer;

3. The terms “after-sales support” and “subsequent servicing” are not defined with accuracy in the Bulgarian legislation, and in the literature they are used interchangeably. However there should be made a distinction between those, as being thus mentioned in IAS 18, they result in confusion and incorrect treatment;

4. The notions of property developer and construction enterprise are not completely correlatable and each individual case must be considered in itself. This in turn necessitates a correction in the Bulgarian version of IAS 11 Construction Contracts, as well as in NAS 11, of the kind that was made in the Law of the Spatial Planning (LSP) and Ordinance No3 of the Ministry of Regional Development and Public Works in their amendment of 2003;

5. An important question that has been overlooked by the accounting standards and the literature is, precisely on what basis should the allocation of “the fair value of the total received or payable compensation” between the individual contractual components be done;

6. The global financial crisis and the difficulties ensuing from the application of the accounting standards have necessitated the purposeful division of the activity and the construction contracts into separate items in order for the enterprises to be able to cope with the uncertainties and the risks, which the present standards are unable to resolve;

7. Besides the terminological differences, there are also conceptual ones between the national and international variants of the standards discussed here, in determining the scope of the applicable standard, which leads to confusion among practitioners.

It is caused by the fact that “for issues unresolved in the National Financial Reporting

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4. Probably due to the vagueness concerning the role of the property developer and the range of their duties, the legislator excludes them from the circle of the persons participating in construction - Art. 160, Para. 1 and Art. 164, Para. 1 of the LSP.
Standards for Small and Medium-sized Enterprises (NFRSSME) there shall be applied accounting principles and solutions in accordance with the International Financial Reporting Standards.”

8. NFRSSME, regulating the recognition of revenue and expenditure from the activity of construction enterprises, ought to be harmonized with the International Accounting Standards. Although they are based on their international equivalents, it turns out that those differ conceptually. With regard to the used terminology, principles and approaches to revenue recognition, those should be carefully defined and specified so that there is a more uniform understanding of them. The unification of terminology is of crucial importance for every field of activity, since only in this way can there be started its adequate assessment and tracing, as well as the conducting of analyses and outlining of the trends in its development;

9. As regards the international variants of the standards IAS 11 and IAS 18, they should and will be replaced by the New Standard, but we hope this happens only if the terminology, criteria and approaches to revenue recognition from construction contracts (contracts with customers) in its final version have been carefully defined, otherwise its advent will not help improve the accounting.

However, the very idea of creating a single standard for revenue recognition deserves our attention, because that will put an end to the ceaseless wandering among standards, interpretations, clarifications and comments. In this connection we are of the opinion that Interpretation 15 should also be repealed completely, although during the meeting of the two Boards of 19 Mar 2013, there was taken the decision to keep it in its present form. It prepared the advent of the new standard and “patches” part of the “ruptures” in the International Standards, but at the same time it caused also the conceptual differences between them and the NFRSSME. We must not forget that Interpretation 15 refers to their international variants, which is why the national ones ought to be terminologically and conceptually harmonized with their international equivalents, instead of making loose interpretations as well as “mistakes and losses in translation”.

Based on what has been stated so far we can conclude that the difficulties in the application of the currently effective accounting rules and regulations as well as interpretations concerning revenue recognition with all components of construction contracts, require changes - the finding of a solution that is radically new in its sense. Otherwise the risk of historical accumulation, the stacking of omissions and inaccuracies

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16 Annual financial report 2010, Kurortno Stroitelstvo OOD, reference Companies Register with the Registry Agency.
17 The two Boards use the term “contracts with customers” and in this way avoid the difficulty, which Interpretation 15 by the International Financial Reporting Interpretations Committee (IFRIC) introduced.
19 We express the hope that it will be kept only until the moment the new standard is introduced, but not afterwards.
20 In this way there will be achieved one of the objectives in the general provisions of the NFRSSME – “unified application of the adopted international accounting terminology”.
would ultimately lead, and it actually does lead, to unjustified - in terms of time and amount - revenue recognition, which is observed not only in the Bulgarian, but also in the global practice. At present we have at our disposal two overlapping in certain circumstances standards, with a multitude of criteria, whose full application and intertwining turns the process of revenue recognition into a difficult process relying on a largely subjective, but at the same time professionally objective, and - we hope - conscientious judgement.

2. **Comparative analysis of the formulations in the Project and the ones applied by the enterprises under IAS.**

Three years later, with two projects to be discussed, over 1300 letters containing comments and a great number of meetings and information activities, the two Boards are within several weeks of the publication of the new standard on revenue. The main goals of the joint project on revenue recognition are relatively simple – convergence and coordination, and as Leslie Seidman, president of FASB says, “It is important that we have global comparability on the most important line of the statement of every company around the world – that of the revenues”.

We should point out some of the major changes that are expected to occur with the new standard.

1. There is introduced a specific five-stage model of revenue recognition, which is to be applied consistently to the various industries, geographical regions and transactions. It is intuitive and outlines the entire process of the conclusion of the contract/s and their combination or segmentation; it passes through the identification of each individual duty of performance with the particular contract or group of contracts (if those are reported in a group); determining the contractual remuneration, up to the amount the enterprise estimates it is entitled to and will receive; its subsequent allocation to the individual obligations for execution under the contract; and lastly, revenue recognition after the execution of each individual duty of performance, through transferring the control over it to the customer;

2. There are removed the industry-specific guidelines and in this way there is introduced a new approach, more dependent on one’s professional judgement and the contractual clauses and terms. There is introduced a complete model, with its underlying principles and aims. In this way the lawyers and other consultants can play a key role in the drafting of the contracts, in order to specify clearly when and how the reporting entity transfers the control over goods, production and/or services to the customer. The new guidelines will also require that the enterprise uses more approximate estimations than those with the currently effective standards;

3. The interpretations of the new standard with respect to determining the number of the individual obligations for execution in the particular contract are more intuitive and comprehensible. In addition to that it gives thorough guidelines for determining their estimation (the independent selling price), and its setting. As it becomes clear, that void in the currently effective applicable accounting standards has been filled.

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The latter do not give explanations about determining what amount of the negotiated remuneration ought to be allocated to the individual contractual commitments;

4. The key to revenue recognition within the new approach is “the transfer of control” over the promised good or service (not the transfer of the risks and the benefits). This will considerably facilitate the work of practitioners in considering only the transfer of control, in contrast to the way Interpretation 15 introduced the complex and difficult simultaneous execution of the risks, the benefits and the effective control over the production, the goods or the services;

5. The new rules will be applied to all contracts with customers. Unless the contract is one of the exceptions for the applicability of the revenue standard (such as insurance contracts and lease contracts), the guidelines of the Project will be applicable.

Applying the new approach to revenue recognition, construction enterprises will be subject to extended requirements with respect to disclosures. In reality, in many cases revenue recognition will be accelerated, since according to the currently effective standards, when the outcome of a particular construction contract cannot be valued reliably, revenues ought to be recognized only up to the degree of the costs incurred under the contract, which are likely to be reimbursed. In this way the reporting enterprise does not include the variable amounts in the price of the deal, until the uncertainty is overcome. According to the new guidelines, if the promised value of the remuneration under the contract is variable, the enterprise will have to calculate the sum of the remuneration, up to which it will be entitled (either with the help of the “expected value” approach, or that of the “most likely amount”), and to update this estimation towards each reporting date. It is accepted that there is sufficient evidence or experience in support of the conclusion that the recognized revenue will not be subjected to subsequent considerable “reverse expression” (reversal). This estimation is qualitative and encompasses all facts and circumstances connected with this risk of fiscal turnaround, caused by an uncertain future event and by the amount of the recovery, in case that uncertain event occurs. This is just one of the many definitions in the new guidelines, which will require considerable in nature judgements and assessments.

In our opinion this change has two extremely important aspects. The First is that there is already removed the difficulty before practitioners in determining the applicable standard, caused by the definition of construction contract and whether it is existent or not. There is introduced a single requirement, namely the presence of a contract with a customer, and its definition is clear and comprehensible and does not cause ambiguity and erroneous interpretations. Secondly, the accelerated revenue recognition should not be viewed as a possibility for the managers to manage revenues, but rather as improved guidelines for the application of a semblance of the model stage of completion, which - with the observance of the approach, the reduced and intuitive criteria in the Project - would lead to more frequent revenue recognition, reflecting also the actual economic character and the results of the execution of the contracts with customers.

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22 After the introduction of the changes it will not make any difference whether the customer is also an assignor in accordance with the LSP and whether they can or cannot make substantial structural changes over the asset being developed.
A typical example are construction contracts with which there is established the development right of a third party (the so-called “off-plan”). We are of the opinion that the limitation time period for execution of the site to carcassing work is 5 years and the management should very carefully analyze the expected value, or the most likely amount, which will be received (earned), and which will not lead to a subsequent considerable reverse expression (reversal). And such would be the case if the enterprise recognizes revenues in the various reporting periods without taking into consideration the risk of being unable to reach the stage of carcassing work within the indicated time period, after which all that has already been built is acquired - by virtue of the capital gains - by the owner of the land.23;

6. The rules on reporting the operations under long-term contracts have been changed. In their accounting, according to the effective standards, enterprises are to recognize revenues by applying the method percentage of completion, based on reliable estimates. According to the new approach, a contractual obligation will be considered as executed over time only if there are met certain criteria. In this way, the accounting and recognition of revenue will depend on when and how the control over the asset is transferred to the customer according to the terms of the contract;

However, the moment when the accounting of the stage is to be done with the sequential revenue recognition is not expressly specified in the Project, and it is rather debatable, that is, it is not clearly indicated as it was in the definition of IAS 11 – “as at the date of the statement” – 31 Dec of the accounting year.

7. The concepts of the kinds of guarantees and their treatment and accounting are more comprehensible and intuitive. There have been found solutions to the main issues concerning their accounting treatment, and despite the slight imperfections, the standard would contribute to aiding construction enterprises in determining the time and the amount for the recognition of revenue gained from them;

8. The most important of all that has been mentioned so far is that there is eliminated the continuous reference from one standard or explanation to another, and from one interpretation to another. The new standard is more principle-based, allowing the enterprise to have the freedom and the right to conduct grounded approximate estimations, naturally adhering to the requirements on disclosing the technology of their conducting;

9. It should be noted that the presented changes, which are to occur in the accounting of revenue in construction enterprises, will affect with a greater force and, respectively, will introduce to a considerably higher degree improvements in the accounting of multicomponent contracts. This is due to the detailed explanations of the model of the Project, the establishment of the value of every identifiable component and the subsequent recognition of the revenue from it.

The above list lays no claim on exhaustiveness with regard to the expected changes in the rules on revenue recognition. Rather, it is a summary of the most

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23 For the purposes of the article there are not discussed the consequences of the so-called onerous contracts, as well as the non-performance of construction contracts. Those would be the object of a separate, independent study.
important among them, which can be used as a starting point for the comprehension of the new approach, and for assessing the effect of those changes. The enterprises are to perform an appraisal of their current systems and processes in order to identify the changes, which will take place in the accounting of the existing contracts, as well as those, which are yet to be prepared complying with the new approach. Although the two Boards plan to grant enterprises considerable time (headstart) before introducing the requirement on applying the final rules, the time for the analysis and planning of their impact is now.24

3. Testing the effect the expected changes will have in the recognition of revenue from the housing and resort construction.

From a practical standpoint, the substantial and largely positive changes will exert significant influence, because some contracts fall in the category of multicomponent ones. Such are the contracts incorporating the following: designer’s services; delivery and installation of lifts; autoplaforms for underground garages; central air-conditioning systems; systems for the collection and purification of rain water and waste water; pools; different types of CAW, etc.

In this connection we should once again review the formulations of the Project concerning the division or combining of the individual elements (components) of these contracts.

The two Boards point out that a separate duty of performance is a promise to transfer a “separate” good or service to the customer. A good or service is deemed “separate” (separate component), if one of the following conditions is met:

1. The enterprise regularly sells the good or service separately – and it is considered as such when:
   - it has a separate function, and
   - it has a differentiated profit margin;

2. The assignor (the customer according to the Project) can benefit from the good or service itself – independently (i.e. the good or service is an asset in itself, which can be used, consumed, sold for an amount different from that of scrap, held or otherwise utilized in a way that generates economic benefits), or in conjunction with other resources, which are easily accessible for them (are at their disposal). And these are goods or services, which are sold separately (by the enterprise itself or by another enterprise), or resources, which the customer has already acquired (from the enterprise or from other transactions or events).

In other words, the abovementioned components do not conform to the definition of “separate” and are not to be treated individually. What is more, the Project states further that the goods or services promised together (in a package) are not deemed separate even if the individual goods or services in it fulfil independently the conditions to be considered as such. Also, there should be taken into account the expertise of the

construction enterprise, i.e. whether it sells the various goods or services independently, and not be influenced by that of other enterprises for the particular case.

Regardless of these criteria, a good or service that is part of the promised package of goods and services is not considered separate, and therefore the enterprise will account this package as a single duty of performance, if both of the following criteria are met:

1. The goods or services in the package are strongly interrelated in such a way that their transfer to the customer requires of the enterprise the provision of a considerable in nature service on the integration of the goods or services in a combined product, for which the customer has made an agreement;
2. The package of goods or services is considerably modified or personalized in order to meet the requirements of the contract.

Therefore the three kinds of contracts - for an apartment/residential building, summer house and resort complex, and the elements in them are to be treated as independent packages.

The recognition of revenue is carried out through transferring the control to the customer. It in turn is defined as the ability to manage the use of, and to obtain all benefits from, the asset, i.e. the customer should have the actual right to receive essentially all potential cash flows from that asset (incoming cash flows or a decrease in the outgoing ones). In the definition of Control there is included also the ability to prevent other persons from managing, using and receiving benefits from the asset. The latter are the potential cash flows, which can be obtained directly or indirectly in a number of ways, such as:

- the use of the asset to settle liabilities; sale or exchange of the asset; pledging the asset as collateral on a loan, etc.

It turns out that the assignor (whether it is a third party, or the enterprise investor from the same group), possesses the control over the asset being developed (from the considered examples) throughout the entire period of the contract, since they can use the asset to settle debts, to sell it or exchange it for another, to use it as collateral on a loan.

Next, there should be established whether the obligation under the contract is executed continuously or as at given moment (the commissioning). It is executed over time, if it is estimated that at least one of the following two criteria are met at the very conclusion of the contract:

1. Through the execution of the obligation there is created or improved an asset, which the customer controls (for instance, the obligation is executed over time with many of the construction contracts when the customer controls the work in progress (tangible or intangible) resulting from the execution of the enterprise);
2. Upon undertaking the commitment there is not created an asset with an alternative use on the part of the enterprise, if each of the following criteria is met:
   • The customer simultaneously obtains and consumes the benefits with the very execution on the part of the enterprise;
   • Another enterprise should not, to a considerable degree, redo the work that has been completed up to that moment;
• The enterprise has the right to receive its due compensation for what has been done up to that moment and expects to fulfil what has been promised under the contract.

It becomes clear that the very first criterion is met, because the assignor possesses the control throughout the entire period of the contract, which means that the hitherto existing practice of phased accounting and recognition of revenue is preserved. Quite another question is, as at which moment in time (when) the control over the asset is to be considered as transferred to the customer. In this way, according to the new approach, the accounting of the enterprise for the long-term construction contract will depend on when and how the control over the asset is transferred to the customer according to the terms of the contract.

In the notes to the Project (§ BC 91) it is stated that “the assignor has the right to require of the contractor, with most contracts, to make subsequent payments and to approve the erected facilities (or output, or services provided) until that moment, if they fulfil the requirements under the contract. The assignor has the right to obtain control over the work in progress as their option”. In other words, with the considered three examples of construction contracts, in effect the contractual clauses and the annexes to the construction contract, such as the schedule for approving the performed at a given moment work, will play a much greater role in determining the moment as at which (in which) the customer will receive control over the developed asset.

We are of the opinion that the recognition of revenue on the included in the package individual components, will be sequential as at the date of each Act mod. 19, with which they are approved. In view of the factual situation presented here, in order to preserve the principle of comparability, the enterprises with multicomponent contracts are to include in them suitable clauses, in order to continue to draft Act mod. 19, or Statement of Revenue Recognition (as is the practice in certain enterprises), as at 31 Dec of the accounting year. Those have to be bilaterally signed by the assignor (the customer) and the contractor, reflecting only the value and type of the actually incurred costs at the time, on the basis of which there is to be calculated the stage of completion and later on - the revenue recognized.

As regards the cases in which a customer (assignor - third party, external to the group), who has bought “off plan” or under Act mod. 14 a piece of residential property (apartment), whose construction will cover more than one reporting period, as at each date of preparing the financial statement is to draw “internal Act mod. 19”. We believe this is necessary, since that person is de jure under no obligation to accept a given stage or particular construction-assembly works, as it is in the majority of cases. This would be possible for the enterprises applying the NFRSSME, but not for those under IAS, since with the former the construction contract for an apartment is within the scope of AS 11, and in the latter there are no recognition criteria such as risks, benefits and effective control of the kind we find in IAS 18, in whose scope there falls the example given of construction enterprises, which apply the IAS. In this connection, with the latter there still exists the risk of recognizing the revenue of a completed contract.

Conclusion

The project has managed to find solutions to the main issues concerning the accounting treatment of the individual elements and the recognition of revenue from them, under the contracts for housing and resort construction. And despite the “specific economic, political, social and cultural environment characteristic of Bulgaria during the period of transition to market economy, determined by the legal and the tax systems and their impact on financial reporting; by the type and concentration of property, as well as by the scale of public enterprises; by the system of implementation and control over the observance of IAS/IFRS and largely by the reporting motives of the management of the companies in the preparation of the public financial statements”

replacement of the two currently effective standards with a new one is a step forward towards improving the accounting and the elimination of the existing discrepancies, omissions and ambiguities.

REVENUE RECOGNITION IN THE HOUSING AND RESORT CONSTRUCTION - ISSUES AND PROSPECTS

Assist. Prof. Ivan Apostolov

Abstracts

In the present article there are considered the main theoretical as well as practical and applied issues of the recognition of revenue from the contracts for housing and resort construction, leading to the constant wandering between standards, explanations and comments. The difficulties in the application of the current accounting normative base necessitate changes - finding a radically new solution by its sense - a new standard, or else the risk of a historical accumulation of omissions and inaccuracies leads to an unreasonable in terms of time and amount revenue recognition, which is observed not only in the Bulgarian practice. As a next step there are deduced the anticipated changes and is tested the effect those are going to have.

Keywords: IAS 11, IAS 18, revenues, construction, contracts.

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ANALYSIS OF THE STRUCTURE AND DEGREE OF CONCENTRATION OF THE ELECTRICAL ENERGY MARKET IN BULGARIA

Georgy Georgiev, PhD student

Introduction

In recent years, the topic of the monopoly enjoyed by electricity distribution companies has been increasing discussed until peaking in early 2012 with mass protests across the country. Customer dissatisfaction is largely related to the underlying structure of the market and the impossibility for customers to choose their service provider. After the privatization of state-owned electricity distribution companies the so-called natural monopolies were created in certain regions of the country. In the last seven years three electricity distribution companies holding licenses for the supply of electricity to end users have operated in the country.

Pursuant to the requirements of the acquis communautaire the current market principles should be changed. This would result in the separation of power generation and transmission, pricing on the basis of market principles and allowing consumers to choose their electricity supplier. This is guaranteed by the Third Energy Package, which includes Directive № 2009/72/EC concerning common rules for the internal market in electricity. Market liberalization is vital to maintaining and enhancing economic development in Bulgaria. The purpose of this article is to examine the structure of the electricity market in Bulgaria and to determine the concentration and monopoly position of the distribution companies. Subject of the study is also the structure of the electricity market in Bulgaria.

1. Characteristics of electrical energy as a product of the economy

In economics, there is still no clear definition of whether electricity is a commodity or service. According to Pineau and Xiuling and Junmin, electricity is classified either as a commodity or as a service in various international agreements on trade. On the one hand, it can be seen as an intangible commodity that should be consumed immediately after being produced, which renders it one of the main characteristics of services. On the other hand, electricity performs many of the functions of oil or gas that possess undeniable characteristics of goods. The WTO regards electric power

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1 Pineau, P., Electricity Services in the GATS and the FTAA, Vol. 12: Iss. 2, Article 9., Available at: http://digitalcommons.mcmaster.ca/esr/vol12/iss2/9
4 See above.
as a commodity that results from the production of electricity. However, electricity services, including the transmission of electricity, are subject to the General Agreement on Trade in Services\(^5\). After the liberalization of the energy sector and the subsequent opening of the electricity markets to potential foreign suppliers, in many countries there has been a clear trend towards recognition of electricity as a commodity, while the related activities such as transmission, distribution, etc. have been perceived as services. Interestingly, pursuant to the Bulgarian legislation\(^6\) electric power is seen as a commodity on which excise duty is levied.

At the same time, electricity is perceived as a non-differentiable commodity\(^7\), distinguished from other products by the following characteristics:

- seasonality of demand
- high volatility of prices
- inelasticity of demand
- limited ability to transport

Depending on the type of users, differences are observed in the consumption of electricity\(^8\). For example, households increase their electricity consumption mainly in summer and winter. This can be explained by the increasing use of air-conditioning systems. On the other hand, industrial users are characterized by unvaried consumption over the year, with a slight increase only in the summer, when a very little part of the energy consumption is used for heating or cooling.

In countries with liberalized electricity markets, the electricity price may depend on various factors. Some of these are related to the time (during the day) and place of production, demand, and the various conditions of the market and the energy system\(^9\). Due to the existence of a regulated part, the prices on the Bulgarian electricity market are characterized by large differences only in the free trade part.

Due to its nature of a commodity of first necessity that satisfies certain needs and cannot be replaced, ie no substitute exists with regard to the given need, electricity is characterized rather by an elasticity of demand with regard to price. This is evidenced by numerous studies in this respect\(^10\).

The need for accompanying wires, the inability to store electricity and the fungibility with regard to the manufacturer should also be added to these characteristics.

The said characteristics, as well as some related peculiarities, are displayed in Figure 1.

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\(^5\) For more information: http://www.wto.org/english/docs_e/legal_e/legal_e.htm#services, latest access 15.11.2013.

\(^6\) http://balans.bg/3331-zads-pylen-tekst/


The need for an existing transmission and distribution grid so that electricity can reach the end user creates conditions for the achievement of a monopoly position by the company that owns the facility and has the right to restrict the access to it of other producers or suppliers. Therefore, in many countries like the USA, the UK, South Africa and the EU the so-called Essential Facilities Doctrine has been adopted. The Doctrine affects owners of essential facilities (railways, electricity grids and power lines), stipulating the cases in which they are obliged to provide access to these facilities.

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for use by third parties (companies) at a reasonable price\textsuperscript{13}. Thus the monopoly of a
certain private company is limited and in many cases the facility is owned by the state.

Another essential feature of electricity is that it cannot be stored. This creates a
need for the generation and supply to occur at the moment of the occurrence of
demand. For this to be possible it is necessary that the market is strictly balanced. So
in the process of delivering the commodity to the end user it is necessary to involve a
third party that would balance the supply and demand at any time. On the Bulgarian
electricity market this role is undertaken by the Electricity System Operator (ESO).
Different electricity exchanges operate in different countries to allow electricity trade
in real time: EEX (Germany), Nord pool (Norway, Sweden and Finland), UKPX (UK)\textsuperscript{14},
etc. Another feature associated with these electricity markets is their pricing method.

The latter characteristic is associated with the non-differentiability of the service
with regard to the producer. This means that whether produced by a thermal power
plant (TPP), a nuclear power plant (NPP), or other type of power plant, the electricity
has the same qualities and characteristics, ie it is not possible that a NPP delivers on
the market electric power with different characteristics such as a higher voltage or
higher current strength. The above characteristics of the commodity refer it more to
the undifferentiated commodities and largely determine the characteristics of the
electricity market. Therefore, in this paper we presume that the electricity is a non-
differentiable commodity in accordance with the foregoing opinion of Chatnani and
Burger and in line with the knowledge development in recent years.

2. Displaying the model of the electricity market in Bulgaria

In this analysis the relevant energy market in Bulgaria is divided geographically
into a national and several regional markets. The main reason for choosing this manner
of division is the existing regulatory barriers to the entry and access of market players
in certain regions. The volume of the national electricity market in Bulgaria is determined
by the domestic electricity production, the imports, exports and domestic consumption.
The following table shows the volume of production and consumption of electricity in
Bulgaria over the past five years.

\textsuperscript{13} Annual report of the Organisation for Economic Cooperation and Development (OECD) on the nature
and options for a concept concerning the essential facilities, 1996: http://www.oecd.org/competition/
abuse/1920021.pdf - latest access 8.11.2013

\textsuperscript{14} Madlener, E., Kaufmann, M., Power exchange spot market trading in Europe: theoretical considerations
and empirical evidence, OSCOGEN discussion paper, 2002.
Compared to 2007 the generated electric power in Bulgaria has increased by almost 22%. The larger electricity production has been caused both by the increased domestic consumption and by the increased exports. This is evidenced by the almost 42% increase of exports in 2012, compared to 2007. The temporary decrease of the 2009 and 2010 consumption levels can be ascribed to a number of factors, the most significant of which is the worldwide economic downturn.

The national, as well as the regional electricity markets comprise two main types of consumers: households and business consumers. The consumption by the two types of consumers looks as follows:

<table>
<thead>
<tr>
<th>Index</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net generated electric power (GWh)</td>
<td>38 991</td>
<td>40 028</td>
<td>38 486</td>
<td>41 659</td>
<td>45 401</td>
<td>47 406</td>
</tr>
<tr>
<td>Imports</td>
<td>3 057</td>
<td>3 097</td>
<td>2 662</td>
<td>1 166</td>
<td>1 450</td>
<td>2 353</td>
</tr>
<tr>
<td>Export</td>
<td>7 534</td>
<td>8 441</td>
<td>7 735</td>
<td>9 613</td>
<td>12 110</td>
<td>10 661</td>
</tr>
<tr>
<td>Consumed electrical power (GWh)</td>
<td>34 514</td>
<td>34 684</td>
<td>33 413</td>
<td>33 212</td>
<td>34 741</td>
<td>34 595</td>
</tr>
</tbody>
</table>

The table shows that the power consumption of households is a little less than a third of the total electricity consumption in Bulgaria. The business consumers market includes all consumers that use the purchased energy in the production of goods and services. The data clearly show the importance of business users on the national electricity market. The decline in their power consumption is clearly reflected in a decline in the total electricity consumption in 2009 and 2010. In spite of the data provided it is not possible to obtain a better understanding of the structure and characteristics of the electricity market in Bulgaria. Therefore, in addition to the general electricity market data, information will be provided on the specifics of the market.

Table 1

Volume of the electricity market in Bulgaria for the period 2007-2012

Table 2

Consumed electric power according to the type of consumer

The table shows that the power consumption of households is a little less than a third of the total electricity consumption in Bulgaria. The business consumers market includes all consumers that use the purchased energy in the production of goods and services. The data clearly show the importance of business users on the national electricity market. The decline in their power consumption is clearly reflected in a decline in the total electricity consumption in 2009 and 2010. In spite of the data provided it is not possible to obtain a better understanding of the structure and characteristics of the electricity market in Bulgaria. Therefore, in addition to the general electricity market data, information will be provided on the specifics of the market.

\[15 \text{ www.nsi.bg} \]
\[16 \text{ Adapted from www.nsi.bg} \]
The transition from a centrally planned economy to a free market economy and the desire to join the EU affected the electricity market, creating the so-called hybrid market model. Consequently, two parts were formed, whereby the transactions in one of them are concluded at regulated prices and the transactions in the other are freely negotiated. The regulated market is managed on the basis of secure contracts with local providers and public providers at prices regulated by the regulator; the participants do not enter into transactions for electricity balancing\(^\text{17}\) with the Electricity System Operator (ESO). The free market is based on free prices that have been negotiated between the participants. This market model is based on bilateral contracts and a balancing market. Although both markets operate under different conditions, they operate together and the link between them is the National Electricity Company (NEC). The following figure shows the structure of the two types of electricity market:

![Figure 2. A graph of the electrical energy market in Bulgaria\(^\text{18}\)](image)

To get an idea of the size of each market sector the following table shows the realized quantities for each sector.

\(^{17}\) Balancing is a process of adjusting the quantities of power in the schedules under all purchase contracts with the estimated total consumption of electrical power for the respective period

The table clearly shows that the share of the regulated market is 2 to 3 times larger than that of the free market. Another trend that has emerged is the significant increase in the volume of electricity traded on the regulated market, which in recent years has grown by 17%. The latest trend is the reduction of the volume of electricity traded on the unregulated market, in spite of the set objective of transition towards free electricity trade. The reasons for the larger share of the regulated market are heterogeneous. The most important reason is the delayed changes in the energy legislation that would allow all users to buy electricity at freely negotiated prices. Naturally, the presence of two electricity markets determines the identification of two market structures.

3. Determining the type of market structure of the regulated electricity market in Bulgaria

Due to the significant dominance of the electric power traded on the regulated market, this paper will focus on the analysis of the related market structure and market concentration. At this stage of opening of the electricity market, on the regulated market the public / end providers, represented by the three distribution companies, supply and sell electricity at regulated prices to the protected consumers, ie households and businesses with an annual turnover under BGN 19.5 million and staff less than 50 people (under Directive 2003/54/EC). The 2006 amendment to the Energy Act requires a legal and organizational separation of the electricity distribution activities and the operational management of the distribution grids on the one hand from the electricity supply activities on the other\(^\text{19}\). The following table presents the share of distribution companies in their capacity as traders of electricity:

<table>
<thead>
<tr>
<th>Year</th>
<th>Total consumed electric power (GWh)</th>
<th>Electric power consumption (GWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Regulated market</td>
<td>Free market</td>
</tr>
<tr>
<td>2008</td>
<td>34 684</td>
<td>24 626</td>
</tr>
<tr>
<td>2009</td>
<td>33 413</td>
<td>25 513</td>
</tr>
<tr>
<td>2010</td>
<td>33 212</td>
<td>28 692</td>
</tr>
<tr>
<td>2011</td>
<td>34 741</td>
<td>29 741</td>
</tr>
</tbody>
</table>

The table clearly shows that the share of the regulated market is 2 to 3 times larger than that of the free market. Another trend that has emerged is the significant increase in the volume of electricity traded on the regulated market, which in recent years has grown by 17%. The latest trend is the reduction of the volume of electricity traded on the unregulated market, in spite of the set objective of transition towards free electricity trade. The reasons for the larger share of the regulated market are heterogeneous. The most important reason is the delayed changes in the energy legislation that would allow all users to buy electricity at freely negotiated prices. Naturally, the presence of two electricity markets determines the identification of two market structures.
Figure 3. Shares of the end providers on the electric power market


Figure 4. Shares of the end providers on the electricity transmission market

As can be seen, the largest market share is owned by the provider for Western Bulgaria, CEZ Electro Bulgaria. It comprises 27% of the market, which, according to data provided by the company, includes 3.3 million end consumers. The second largest market share is owned by EVN Bulgaria Power Provision plc. Its 24% market share comprises all consumers in Southern Bulgaria, numbering 1.5 million people. The smallest share of 16% or 1.1 million consumers is owned by Energo-Pro Sales plc. The remaining quantities of electric power are shared between NEC (5%) and other electric power traders on the free market (28%). The following graph provides information on the market of electric power transmission on the low- and medium-voltage electricity distribution grid.

If you add up the companies’ shares for each year, you get 100%. This is because the three companies between them own the low and medium voltage distribution network in the country. Thus on a regional level it is not possible for any other supplier to provide electricity to the protected consumers except the respective electricity distribution company.

The analysis shows that if the relevant electricity supply market is limited within the country, then based on the three essential attributes for the establishment of the market structure, namely the number of sellers, product homogeneity and entry barriers and subject to the above graphs it may be inferred that on a national level the regulated electricity market is rather oligopolistic in nature. This is evidenced by the fact that only three traders operate on the market, the product is undifferentiated and barriers to entry are high.

The picture changes if the three distinct geographical areas in which the three distribution companies operate are considered to be the relevant market. To determine the market structure in these regions the entry barriers are essential. The licenses that are part of the regulatory entry barriers play a crucial role in this respect. Under the privatization contracts and licenses for transmission and supply of electricity to end users the distribution companies acquire property rights over the low and medium voltage distribution network as well as exclusive rights to sell electricity at regulated prices to end customers in their designated areas. The following table presents the licenses granted to the three distribution companies:

Each pair of license holders is part of a vertically integrated structure and is owned by a company which holds the majority of their shares. In the above three geographically distinct regions of the country the electricity distribution companies are the only sellers of electricity to households and small and medium enterprises. This ensures their monopoly in the areas designated in their licenses. Thus, in the analysis of each of the relevant geographic markets in which a certain power company operates it will be clear that all the conditions for the existence of a monopoly have been fulfilled.

1) There is only one seller in the respective territory;
2) The product is undifferentiated (electricity);
3) The entry barriers are very high (there are licenses for transmission and distribution).
Therefore, the application of tools to determine the market concentration becomes unnecessary as they analyze the market shares of the companies involved in the market, while in the case of the electricity market for protected consumers there is only one supplier with a 100% market share by virtue of its license. This calls for the need to calculate the two indices.

The consequences of the monopoly market structure are expressed in the realization of profits which are greater than normal at the expense of the welfare of society, loss of efficiency, inefficient use of resources, and lack of incentives to innovate\textsuperscript{24}. First, in the current structure of regional markets the social consequences for consumers include deprivation of their right to choose their supplier of electricity. Domestic consumers can purchase the service only from the company owning the license for the region. This results in a reduction of confidence in the companies and the formation of a negative image of “bad monopoly.”

Secondly, although it cannot be accurately forecast whether market liberalization would lead to prices reduction in Bulgaria, we could draw attention to markets where this has already happened, such as Germany\textsuperscript{25} and Great Britain\textsuperscript{26} which in the short

\begin{table}
\centering
\begin{tabular}{|l|l|l|l|}
\hline
License holder & License number & Description of the activity & License term \\
\hline
E VN Bulgaria & №Л-140-11/13.08.2004 & License for public provision of electrical power & 35 /thirty five/ years \\
Electricity Distribution & & & \\
E VN Bulgaria & №Л-141-11/13.08.2004 & License for public provision of electrical power & 35 /thirty five/ years \\
Electricity Supply & & & \\
CEZ Distribution & №Л-135-07/13.08.2004 & License for electrical power distribution & 35 /thirty five/ years \\
Bulgaria plc & & & \\
CEZ Electro Bulgaria plc & №Я-135-11/29.11.2006 & License for public provision of electrical power & Until 13.08.2039. \\
Energo Pro Networks plc & №Л-138-07/13.08.2004 & License for electrical power distribution & 35 /thirty five/ years \\
"E.ON Bulgaria Networks plc" & & & \\
Energo Pro Sales / E.ON Bulgaria plc & №Л-139-11/13.08.2004 & License for public provision of electrical power & 35 /thirty five/ years \\
& & & \\
\hline
\end{tabular}
\end{table}

\textsuperscript{23} http://www.dker.bg/firmi_listbg.php?LIC=0&P=374&SP=395&OID=

\textsuperscript{24} Krugman, P., Wells, R., Microeconomics, Worth publishers, 2005, p. 346-349


\textsuperscript{26} Ardito, L. Procacci, G., Menga, G., Morisio, M., Smart Grid technologies in Europe: An Overview, Energies, 2013, p. 251-276
term have benefited from the competitive electricity markets. However, these markets have seen price increases in recent years, which can be attributed to the high investments in new technologies and the depletion of traditional energy sources.

Thirdly, due to the existing regulatory framework and the existing monopoly structure, the three electricity companies have no incentive to develop new products for consumers in the form of new price packages, thereby limiting consumer choice. This is evidenced by the fact that over the last seven years, in which the electricity distribution companies have operated in the market, they have not offered different price packages except the daytime and night tariff for domestic consumers. The telecoms sector in Bulgaria can be indicated as a counter-example, since its users can choose between multiple tariffs.

Another consequence is the lack of innovation in the sector. The lack of competition and the exiting entry barriers for new players allow the distribution companies to slow down and not to apply innovative technologies. For example, one of the most important conditions for the implementation of the latest technologies in the industry (smart grid) is the existence of a liberalized market where consumers can choose their supplier. Besides the aforementioned drawbacks of the existing market structure it is worth mentioning also the inefficiency of the sector as a whole. For example, last year the NEC, which is one of the players on the regulated market, generated a debt of BGN 2.8 billion, which is explained by the existing regulatory framework and the obligation to purchase electricity produced from renewable energy sources at higher prices\(^27\). This means that NEC buys electricity at preferential higher prices, but sells it to the distribution companies at lower prices. Another possibility for the failure of the model may be sought in the inability of the regulator to exercise complete control over the costs incurred by the electricity distribution companies due to its limited capacity. This in turn creates the possibility for electricity distribution companies to raise the eligible costs and thus affect the final price of electricity. The inefficiencies in the sector caused by government regulations have raised the question of how the market is regulated and how consumer prices are calculated.

Generally, the functions and methods used by the regulator to regulate the electricity market are described in the Energy Act\(^28\) and the Ordinance concerning the regulation of electricity prices\(^29\). Therefore, to arrive at the final price of electricity for protected consumers, the following stages should be passed:

1) Purchase of electricity produced for the regulated market from conventional and renewable energy sources at regulated prices by the public provider (NEC).

2) Forming the so-called energy mix, including the price of buying electricity from all producers: NPP, TPP and renewable energy sources by the public provider. An average price of the generated electricity is calculated.

3) The cost of transmission and access to the high and low voltage grids are added, which are also regulated by the regulator.

\(^{27}\) Mihaylova, G., The liquidity term in the energy sector increases debts, Capital newspaper, 2013

\(^{28}\) Energy Act

\(^{29}\) http://www.dker.bg/files/DOWNLOAD/ordinance_electro.pdf
4) The additives for transmission of electricity produced from renewable energy sources, cogeneration and condensing power plants (TPP subtype) are added.
5) The final price for end users is formed.

On the one hand price regulation provides security and lower costs for consumers, and it promotes the purchase of electricity from renewable energy sources, but on the other hand it distorts the market mechanism and puts some of the players at a disadvantage, as was the example of NEC.

Conclusion

Electricity is a commodity that is different from other products in its nature. The development of energy legislation in recent years has required that the market is divided in two distinct markets, each characterized by different market structures. The structure of the regulated market on a national scale can be defined as an oligopoly. On the other hand, in view of the displayed results it may be summarized that geographically the market concentration of the three relevant geographic markets is monopolistic in nature and the three electricity distribution companies in Bulgaria occupy a monopoly position in their respective serviced areas. This is determined by the existence of entry barriers, the most important of which are the licenses granted to the three electricity companies for trade and transmission of electricity. This has a generally negative impact on the market efficiency and on the benefits for the electricity consumers.

ANALYSIS OF THE STRUCTURE AND THE DEGREE OF CONCENTRATION OF THE ELECTRICAL ENERGY MARKET IN BULGARIA

Abstracts

PhD student Georgi Georgiev

The article examines the market for electricity in Bulgaria, beginning with a study of electric power in an economic aspect and determining the main characteristics, which set it apart from the remaining products. Having clarified the concept, there is analyzed the market in some of its principal characteristics such as traded amounts and participants and are identified the major participants. There is defined the type of concentration of the regulated market at the national and regional level by drawing out the causes and consequences of the market for electricity thus formed.

Keywords: electric power, market, structure, concentration.
MEASURING AND ASSESSING THE QUALITY AND USEFULNESS OF ACCOUNTING INFORMATION

Assist. Prof. Gergana Tsoncheva

Introduction

High quality accounting information is of key importance for a large number of users, as it influences the quality of the decisions made. Providing high quality and useful accounting information is a prerequisite for the efficiency of the enterprise. The usefulness of the accounting information is connected with the extent to which this information corresponds to the particular needs at any given time and how the information contributes to the solution of a particular problem. Usefulness is determined by the quality of accounting information. By useful information we mean the kind of information that, because of its consumer features, is necessary and needed by its users; is provided on time and is used for performing a particular activity and for the implementation of direct or indirect link/feedback between the creators and the users of accounting information.

Measuring and assessing the quality and usefulness of accounting information are of particular importance, as these activities will not only enhance the quality of economic decision-making for the users, but the overall market efficiency of the business as well.

The main objective of this article is to present a sample methodology for measuring and assessing the quality and usefulness of accounting information. This calls for the development of sample scales and tables, which, in the process of research, should allow us to establish the extent to which financial statements match each of the qualitative characteristics separately and in combination. First, a sample set of tools will be constructed for measuring and assessing the quality and usefulness of accounting information based on the qualitative characteristics required by the Financial Accounting Standards Board (FASB) and the International Accounting Standards Committee (IASC) in the Conceptual Framework. Second, we are going to review the existing literature on assessing and measuring the quality and usefulness of accounting information. Third, we shall develop several hypotheses, which, upon their application in a certain business enterprise, will be either proven or rejected.

To achieve the objective formulated above, the following tasks can be set: - To present some of the qualitative characteristics available in the accounting literature and the conceptual framework of financial reporting.

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- To put forward working hypotheses.
- To develop the methodology for measuring and assessing accounting information.
- To present sample summary tables referring to determining the quality level of accounting information in the annual financial reports of the selected enterprises.

I. Theoretical aspects of measuring and assessing the quality of accounting information

One of the major problems of accounting literature and practice is the following:

The Financial Accounting Standards Board and the International Accounting Standards Committee have adopted the new, improved Conceptual frame of financial reporting [ED- ExposureDraft], which includes all substantial characteristics defining certain accounting information as high quality information.

It is feasible that the methodology for quality measurement includes all qualitative characteristics, as they determine the utility of the decisions made, based on the financial reporting information.

For better results, the sample methodology for measuring and assessing the quality of financial reporting could be based on two types of survey. First, it is necessary for the study to be based on a consumer survey of the largest investors in Bulgarian business for the particular year. The questionnaire may include questions concerning the qualitative characteristics that financial statements should match, so that they are considered to be presenting high quality information. The second survey should be based on an empirical study of the financial statements of exactly those businesses where the above mentioned investments were made (see Appendix 1). On that basis it is possible to study the qualitative characteristics of accounting information. As a result, it is possible to establish to what extent the

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3 As a result of the joint project of IASC and FASB a new joint Conceptual framework was developed in order to include the objectives of financial reporting and the related qualitative characteristics that accounting standards should be based on. In May 2008 IASC and FASB published for discussion the project “An improved Conceptual framework for financial reporting. The Conceptual framework represents the basis of accounting standards”. The application of the objectives and qualitative characteristics should result in high quality accounting standards, which in turn should lead to rendering high quality financial reporting as useful in decision making.
5 The author does not claim hers is the only possible choice of methodology for measuring and assessing the quality of financial reporting.
6 The choice of companies attracting the largest investments was made based on the assumption that investors are among the major users of financial reports. Investor-made assessment could lead us into the reason and foundation of their particular investment decisions, as well as the type of information they need in order to invest in a certain enterprise.
information in the companies' annual reports corresponds to the requirements concerning the qualitative characteristics that define information as high, medium or low level information. To conclude, based on these two parallel studies, we could prove or reject the hypotheses developed in accounting literature, as well as the corresponding conclusions and recommendations concerning the information represented in the annual statements and reports. The choice of a parallel study of measuring and assessing the quality and usefulness of accounting information (a survey questionnaire to be completed by investors, and an empirical study of financial reports) is influenced by the fact, that it is precisely investors that are some of the major users of financial reporting and it is on the basis of companies' financial reports that decisions are made.

When constructing a measurement instrument we could, first of all, refer to the specialized literature, which defines the quality of financial reporting with regard to the basic rights and the improvement of qualitative characteristics that are the foundation of usefulness, as it is defined in the Conceptual framework. The basic qualitative characteristics (i.e. relevance and faithful representation, understandability and comparability) are among the most important ones and largely determine the contents of the financial reporting information. Raising the level of qualitative characteristics results in great improvements in the usefulness and the effectiveness of decision-making.

**HYPOTHESIS 1 (H1)** – We assume that accounting information could be classified as quality information if it corresponds to the qualitative characteristics formulated in the conceptual framework, as well as in some international accounting research, namely: relevance, faithful representation, understandability and comparability.

With the help of a scale the level of quality of the presented accounting information in each of the enterprises under study could be identified as low, medium or high.

The scale for measuring the quality level of the presented information comprises the four qualitative characteristics and goes like this:

- **0-1** = If none or only 1 of the 4 qualitative characteristics is observed, then the quality level of the presented accounting information may be **considered low**.
- **2-3** = If 2 to 3 qualitative characteristics are observed, we could consider the quality level of presented accounting information to be **medium**.
- **4** = Only if all four qualitative characteristics have been observed and applied, shall we consider that the quality level of the accounting information presented is **high**.

Next, the four qualitative characteristics, as well as their components, will be presented separately and using them certain other working hypotheses will be formulated.

**RELEVANCE**

According to the accounting literature researched in advance, relevance is defined in 3 points, related to forecast value and present value.

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Forecast value explicitly refers to information about the capacity of the business to generate future cash flows. Forecasting value, being the most important indicator, plays a key role in useful decision-making and it does that with the help of three elements. The first element measures the extent to which annual reports generate visionary statements. Visionary statements usually describe the management’s expectations about the future development of the company. This information is of great importance for the users of the annual report, since management has access to private information in order to prepare forecasts, which is not the case for other stakeholders[R1].

The second element measures to what extent annual reports disclose information concerning business opportunities and risks. [R2].

Jonas and Blanchet⁸ claim that if information in the annual report is a kind of feedback for the users of that report about previous transactions and events, that will help users to have their expectations confirmed or altered[R3].

All these components belonging to the qualitative characteristic of relevance lead to the formulation of the second hypothesis in this paper, HYPOTHESIS 2 – it could be assumed that the qualitative characteristic of relevance will be present when all the three components that comprise it have been achieved. The three components are of equal importance. We also adopt the following scale for measuring the level of the qualitative characteristic relevance:

- 0-1 = If none or only one of the elements defining relevance is present, this could mean that the level of relevance in the annual reports is low.
- 2 = if two of the elements defining relevance are present, this could mean the level of relevance in the annual reports is medium.
- 3= if all three elements defining relevance are present, this could mean high level of relevance in the annual reports.

FAITHFUL REPRESENTATION

Faithful representation is the second qualitative characteristic that has been developed in the new Conceptual frame. In order for economic phenomena to be faithfully presented, information in financial statements should be comprehensive, objective and without substantial material errors. According to the literature we researched (Dechev; Jonas; Maines & Wahlen), faithful representation is measured with the help of the following constituents concerning: neutrality, comprehensiveness, lack of material errors, verifiability and control. Botosan¹⁰, claims it is difficult to measure faithful representation directly by giving an assessment of the annual report only, as information about actual economic events is necessary to ensure faithful representation.

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⁹ Ibid.
The first constituent refers to being “free from bias”. The prepared annual report cannot be completely free from bias and subjectivity, as the economic phenomena represented in the report are frequently measured under conditions characterized by high degree of uncertainty. Therefore, it is important to examine the argumentation provided on the different evaluations and estimations that were carried out in the annual report.[F1].

The second constituent establishes that the verified and well-founded arguments of the accounting principles increase the probability that the individuals who have compiled the report fully understand quality measurement. This will reduce the chance for unintentional material errors in financial reports.[F2].

The third constituent determines that the term faithful representation, or objectivity, is defined as “lack of prejudice and bias aimed at achieving a predetermned result or causing a particular behavior”. Neutrality is about objective representation of events. It applies to both positive and negative events and facts. [F3]

The fourth constituent refers to measuring the faithful representation of an Audit report. Many authors have studied the impact of the audit and audit report over the economic value of the business entity (e.g. Gaeremynck & Willekens, Kim et al.; Willeken). Maines and Wahan even argue that the audit report is a necessary prerequisite for considering the accounting information to be reliable and faithfully presented [F4].

Finally, an increasingly important factor of faithful representation in the annual report is the corporate governance report. Corporate governance may be defined as a set of mechanisms by means of which the business enterprise organizes and shares the responsibility of management and control. More exactly, corporate governance increases the probability of accurate representation of accounting information (Sloan, R.).[F5]

All 5 constituents that describe the qualitative characteristic of faithful representation take us to the formulation of the third hypothesis in this paper, namely, that we can only speak of faithful representation when all its constituent elements are present. The five constituents are of equal importance. We also adopt the following scale for measuring the level of faithful representation as a qualitative characteristic:

HYPOTHESIS 3
- 0-2 = If none or no more than two of the constituents of faithful representation are present, that could mean the level of faithful representation in annual reports is low.

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If 3 or 4 of the constituents of faithful representation are available, that could mean a medium level of faithful representation in annual reports. If all 5 constituents of faithful representation are there, we speak of a high level of faithful representation in the annual reports.

**UNDERSTANDABILITY**

Understandability defines the quality of information inasmuch as consumers of information can understand its meaning. Understandability will be enhanced when information is properly classified and is presented clearly and concisely. Understandability can be measured by means of four constituents. They should measure and assess the transparency and clarity of the information represented in the annual reports.

**First**, classification of information refers to how well and how orderly information is presented in the annual report. If the annual report is well-structured and it is relatively easy to figure out where to look for the particular information, then this is a prerequisite for a better quality of representing accounting information in financial statements. Besides, disclosing information, in particular the notes to the balance sheet and income statement, can be appreciated in the terms and conditions for clarifying and providing a better representation of income in figures.

In addition, the availability of tables and graphs can greatly enhance understandability. When the person who prepares the annual report uses easily understandable words and sentences, the reader will be able to understand the content better. Should the use of specialized terminology be unavoidable, then additional explanation must be provided in a glossary or in footnotes, so as to enhance the understandability of information.

All four constituents of understandability as an accounting quality lead us to the formulation of the next hypothesis in this paper. Following it, we can assume that the qualitative characteristic understandability will be present when all its four constituents are available. The four constituents are equally important. We also adopt the following scale for measuring the level of the qualitative characteristic understandability:

**HYPOTHESIS 4**

- **0-1** = If none or only one of the constituents defining understandability is available, this could mean a low level of understandability of annual reports.
- **2-3** = If 2 or 3 of the constituents of understandability are available, then the level of understandability of annual reports is medium.
- **4** = If all four constituents of understandability are present, there is high quality of understandability of annual reports.

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COMPARABILITY

It is the qualitative characteristic of comparability that allows the users to identify the similarities and differences between two economic phenomena. Comparability is measured with the help of four constituents, all based on consistency. “consistency refers to the use of the same accounting policy and accounting procedures, throughout the accounting period within the business entity, or using the above mentioned policy and principles in all the business entities for one and the same period”. According to the report about the new Conceptual framework, businesses should strive towards comparability through consistency. Generally, new information, rules or regulations force businesses to change their assessments, evaluations and accounting policies [C1, C2].

Comparability is not only about a company’s consistent usage of accounting procedures; it also refers to the possibility to match and compare different business enterprises [C3]. In addition, the ratios (financial indicators) and indexes can be useful when they are compared with the successful performance of other companies[C4].

All these four constituent elements of the accounting quality of comparability lead to the formulation of the last hypothesis in this paper. Based on this hypothesis we can assume that the qualitative characteristic of comparability is achieved, when all 4 elements that describe it are present. The four constituent elements are of equal importance. We also adopt the following scale for measuring the level of the qualitative characteristic comparability:

HYPOTHESIS 5

- 0-1 = If none or only one of the constituents of comparability is present, this could mean low level of comparability in the annual reports.
- 2-3 = If 2 to 3 of the constituents defining comparability are available, the level of comparability in annual reports is medium.
- 4 = If all four constituents of comparability are present, the level of comparability in annual reports is high.

II. Methodical aspects of measuring and assessing the quality of accounting information

Summaries of the results of a sample field study of selected basic enterprises and investors concerning measuring the quality of financial reporting based on its qualitative characteristics can be filled in the following table.
Sample summarized assessment for quality levels of the accounting information for the enterprises under study:

<table>
<thead>
<tr>
<th>Qualitative characteristics</th>
<th>Enterprise 1</th>
<th>Investor 1</th>
<th>Enterprise 2</th>
<th>Investor 2</th>
<th>...</th>
<th>Summaries of individual qualitative characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis 2 – Relevance:</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td>In % how many of the studied enterprises have low, medium or high level of relevance of accounting information</td>
</tr>
<tr>
<td>1. Annual reports reveal information about future development</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td>Hypothesis 2 is proven or rejected</td>
</tr>
<tr>
<td>2. Annual reports disclose information about business opportunities and business risks</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Annual report provides feedback on how market events and major deals and transactions affect the enterprise?</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Medium level of relevance

High level of relevance

Low level of relevance
<table>
<thead>
<tr>
<th>Hypothesis 3 – Faithful representation</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>In % how many of the studied enterprise have low, medium or high level of faithful representation of accounting information. Hypothesis 3 is proven or rejected</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Annual report clearly explains the estimates and evaluations made.</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>In % how many of the studied enterprise have low, medium or high level of faithful representation of accounting information. Hypothesis 3 is proven or rejected</td>
</tr>
<tr>
<td>2. Annual report clearly explains the choice of accounting principle.</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>In % how many of the studied enterprise have low, medium or high level of faithful representation of accounting information. Hypothesis 3 is proven or rejected</td>
</tr>
<tr>
<td>3. Annual report places balanced emphasis on positive and negative events when the annual results are discussed.</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>In % how many of the studied enterprise have low, medium or high level of faithful representation of accounting information. Hypothesis 3 is proven or rejected</td>
</tr>
<tr>
<td>4. The annual report includes an audit report.</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>In % how many of the studied enterprise have low, medium or high level of faithful representation of accounting information. Hypothesis 3 is proven or rejected</td>
</tr>
<tr>
<td>5. Annual report widely discloses corporate governance issues.</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>In % how many of the studied enterprise have low, medium or high level of faithful representation of accounting information. Hypothesis 3 is proven or rejected</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hypothesis 4 – Understandability</th>
<th>No</th>
<th>No</th>
<th>No</th>
<th>In % how many of the studied enterprise have low, medium or high level of understandability of accounting information. Hypothesis 4 is proven or rejected</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Notes to the balance sheet and income statement are clear.</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>In % how many of the studied enterprise have low, medium or high level of understandability of accounting information. Hypothesis 4 is proven or rejected</td>
</tr>
<tr>
<td>2. Graphs and tables for better understanding of the presented information.</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>In % how many of the studied enterprise have low, medium or high level of understandability of accounting information. Hypothesis 4 is proven or rejected</td>
</tr>
<tr>
<td>3. Specialized terminology in the annual report is made clear by means of additional notes and explanations.</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>In % how many of the studied enterprise have low, medium or high level of understandability of accounting information. Hypothesis 4 is proven or rejected</td>
</tr>
<tr>
<td>4. The annual report contains a glossary of the terminology used.</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>In % how many of the studied enterprise have low, medium or high level of understandability of accounting information. Hypothesis 4 is proven or rejected</td>
</tr>
</tbody>
</table>
### Hypothesis 5 – Comparability

1. Notes about changes in accounting policies explaining the consequence of these changes.  
2. Results for the current accounting period are compared to those in previous accounting periods.  
3. Information in the annual report must be comparable to that provided by other organizations.  
4. Annual report presents financial indexes and ratios (financial indicators).

<table>
<thead>
<tr>
<th>Medium level of comparability</th>
<th>No</th>
<th>Yes</th>
<th>In % how many of the studied enterprises have too, medium or high level of comparability of accounting information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis 5 is proven or rejected</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Separate summaries of hypothesis 1 for each enterprise

<table>
<thead>
<tr>
<th>Quality of the qualitative characteristic (clearly observed)</th>
<th>Summary of Hypothesis 1 for all enterprises about all qualitative characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1, low level of quality</td>
<td></td>
</tr>
<tr>
<td>2-3, medium level of quality</td>
<td></td>
</tr>
<tr>
<td>4, high level of quality</td>
<td></td>
</tr>
</tbody>
</table>
### Table 2

**Absolute and relative share of enterprises according to quality level of accounting information.**

<table>
<thead>
<tr>
<th>Level Of Quality</th>
<th>Qualitative Charact.</th>
<th>ENTERPRISE 1 Rel.</th>
<th>Faithful rep.</th>
<th>Understandability</th>
<th>Comparability</th>
<th>ENTERPRISE 2 Rel.</th>
<th>Faithful rep.</th>
<th>Understandability</th>
<th>Comparability</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1 low level of quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-3 medium level of quality</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4- High level of quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Medium level of the quality of accounting information in enterprise 1

High level of the quality of accounting information in enterprise 2
Conclusion

It is necessary to design and eventually test the set of tools with which to measure and subsequently assess the level of quality and usefulness of the accounting information represented in the annual financial reports. For this reason several fundamental elements have been defined and brought forward as constituents of the qualitative characteristics identified in the Conceptual framework, which could be used to measure the quality of accounting information. Overall assessment of the quality of financial reporting is essential as it can improve the quality of the economic decisions consumers make and improve market efficiency in general, thus reducing the price of capital for the business enterprises.

The implementation of the basic requirements, criteria and indicators for quality assessment of accounting information creates the necessary prerequisites for adopting a universal methodology for quality measurement. This will bring about comparability of the quality and usefulness of the information. In addition, the result of studying the quality of information through adequate mechanisms is also an irrevocable condition for the qualitative assessment of the authors of financial reports.

Table 3

Absolute and relative share of enterprises according to the quality of accounting information

<table>
<thead>
<tr>
<th>Enterprises</th>
<th>Absolute and relative share</th>
<th>Absolute share of enterprises under study</th>
<th>Relative share of enterprises under study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterprises with low quality level of accounting information</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enterprises with medium quality level of accounting information</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enterprises with high quality level of accounting information</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion**

It is necessary to design and eventually test the set of tools with which to measure and subsequently assess the level of quality and usefulness of the accounting information represented in the annual financial reports. For this reason several fundamental elements have been defined and brought forward as constituents of the qualitative characteristics identified in the Conceptual framework, which could be used to measure the quality of accounting information. Overall assessment of the quality of financial reporting is essential as it can improve the quality of the economic decisions consumers make and improve market efficiency in general, thus reducing the price of capital for the business enterprises.

The implementation of the basic requirements, criteria and indicators for quality assessment of accounting information creates the necessary prerequisites for adopting a universal methodology for quality measurement. This will bring about comparability of the quality and usefulness of the information. In addition, the result of studying the quality of information through adequate mechanisms is also an irrevocable condition for the qualitative assessment of the authors of financial reports.
Appendix 1

Enterprises with largest investments for 2013
(based on data provided by the Ministry of Economy, Energy and Tourism)

<table>
<thead>
<tr>
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MEASURING AND ASSESSING THE QUALITY AND USEFULNESS OF ACCOUNTING INFORMATION

Assist. Prof. Gergana Tsoncheva

Abstracts

High quality accounting information is of key importance for a large number of users, as it influences the quality of the decisions made. Providing high quality and useful accounting information is a prerequisite for the efficiency of the enterprise. Usefulness is determined by the quality of accounting information. Measuring and assessing the quality and usefulness of accounting information are of particular importance, as these activities will not only enhance the quality of economic decision-making for the users, but the overall market efficiency of the business as well.

Keywords: evaluation, methods, quality, efficiency, accounting information.
METHODOLOGICAL FOUNDATIONS OF THE ASSESSMENT OF INTERNAL AUDIT

Assist. Prof. Dr. Plamena Nedyalkova

Over the years internal audit has proven its important function both to the public and the private sector. Just like every other constructive activity, internal audit has its own methodology. The methodology for assessing the internal audit, which is part of the constructive elements of the internal audit mechanism is still a controversial issue. The lack of a uniform, well-established algorithm for assessing the quality of the internal audit, which is adequately structured, applying the standards of internal audit and following the principles of audit, are the main factors for setting the aim of the article, namely to systematically present the methodology for assessment of the internal audit, both in the public and in the non-public/private sector. The object of study are the methods for assessment of the internal audit. In order to achieve the above aim, it is necessary to carry out the following main tasks:

1. Present the main methods of assessing the quality of the internal audit in the public sector.
2. Analyse the methods of assessing the quality of the internal audit in the non-public/private sector.
3. Make a comparison of the methods presented in the article.

1. Methods of assessing the quality of the internal audit in the public sector

When the matter in hand is the assessment of the internal audit, each assessor is to provide answers to the following essential questions, namely:

1. What is the object of assessment? – is the object of assessment the entire System of State Financial Control/SSFC/; is the object of assessment the adopted by each organization of the public sector Financial Management and Control System/FMCS/; is the object of assessment internal audit itself as part of the SSFC; is the object of assessment the function of the internal audit, etc.

2. What is to be assessed? – is it the nature of the object; is it the role and the importance of the object; are the object of assessment the individual constituent parts of the object, etc.

3. How will the assessment be done? Although this question comes last, it is fundamental since there must be chosen the appropriate methodology for assessment, which is based on the correct answer to the previous two questions.

4. Who will perform the assessment? – this is an important question in view of the choice of assessment method, and whether the assessing authority is internal or external to the object being assessed. The powers of the assessing body determine on the one hand the object to be assessed, and also the methods of assessment.
The normative regulation of the requirement for assessment of IA /internal audit/ over the years has considerably changed, following the global changes in the political and economic situation. The adoption and the subsequent amendment of the International Standards on Auditing for internal audit; the passing of the Sarbanes-Oxley Act in 2002; the ratification of the frameworks for internal audit COSO, COCO, ERM; the introduction of quality management systems such as TQM /Total Quality Management/, and at a later stage the introduction of the standards on quality, both in the public sector and in the non-public sector, are all factors affecting the change in the methodology for assessing the internal audit.

The powers for assessing the System for State Financial Control /SSFC/ are granted to the European Council, the European Commission and from the European Court of Auditors /INTOSAI/. The European Commission is divided into two individual subcommittees, namely the European Council on Economic and Financial Affairs and the European Anti-fraud Office /OLAF/. SSFC is assessed in different aspects by the above institutions, depending on whether the system being assessed belongs to an EU member state or there is assessed the adaptation and the harmonization of SSFC with the Copenhagen Criteria of the EU to candidate countries. The assessment in both cases is aimed at the constituent elements of SSFC, in order to establish through normative acts the audit in the public sector; to introduce or improve /if already introduced/ the System of Financial Management and Control /SFMC/; the affirmation of inspection activities; the introduction of a central harmonized unit whose main aim is the provision of a methodology for the realization of internal audit and guidelines for the development of SFMC.

In Bulgaria an aggregated assessment of the state and the quality of the internal audit in the public sector is made by the Directorate of Internal Audit with the Ministry of Finance. The directorate is comparatively new, it has been in existence since 2005 and was created in order to fulfil the commitments assumed in the process of Bulgaria’s accession to the EU. The directorate performs the functions of a central harmonizing unit with two separate divisions, responsible for the methodology and the harmonization of the systems of financial management and internal audit. Until 2005 this function was performed by the department Methodology of the Budgetary Control and the directorate Harmonization and Methodology of Auditing Activity with the Agency of State Internal Financial Control /ASIFC/. The directorate Internal Audit prepares a Consolidated Annual Report on the state of the system for financial management and control and internal audit. The report is submitted by the minister of finance for consideration of the given consolidated assessment of the state of SFMC and internal audit in the public sector. On its part, the Council of Ministers, having considered and approved the report, submits it to the National Assembly and the Audit Office.

The consolidated assessment of the internal audit in the public sector is an external assessment. It is made following the requirements of: the international standards on

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internal audit in the public sector; The Law on Financial Management and Control in the Public Sector/LFMCPS;\(^2\) The Law on Internal Audit in the Public Sector/LIAPS/ and Ordinance No 1 of 17 Jan 2011 on the conditions, order and method of performing external assessments for ensuring the quality of the auditing activity.

The issue of the assessment of internal audit is treated in the inherent to the activity international standards on the professional practices of internal audit /Intermediate Pharmacy Practice Experience - IPPE/. In international aspect, the best practices of internal audit, identified by the Institute of Internal Auditors – IIA, require the conducting of an independent assessment of the quality of the function of internal audit at least once every five years. Through the international standard on auditing - Standard 1300, the Institute of Internal Auditors aims to provide the opportunity for assessing the compliance of the activity of the internal audit with the definition of internal audit and the rest of the adopted standards. The remaining standards on auditing supplement part of the requirements of Standard 1300. Thus for example Standard 1312 requires that each internal audit department is submitted to external quality assessment at least once every five years by an independent assessor external to the organization.\(^3\)

Standard 1311 regulates the internal assessments, which the internal auditors are to carry out following the requirements of the developed Quality Assurance Programme and are the affirmation of internal audit. The Programme should be developed by the Head of Internal Audit, following the requirements of Standard 1300 and Standard 1310. The Programme must be developed in accordance with the definition of internal audit, the Standards and the Code of Ethics of internal auditors. The Programme must include both internal and external assessments. It should also be aimed at assessing the effectiveness and the efficiency of the activity of internal audit and identify possibilities for improving internal audit.\(^4\)

We think that a shortcoming of the standards is the setting of the imposed requirement for assessing the internal audit, however they do not present the methodology of this process. It can be concluded that this is the main reason why in the practice there are applied various assessment models and approaches. According to Prof. Dr. Ec. Sc. K. Donev “as a result of the adoption of different approaches to the study of the measurement and assessment, there is observed a variety of opinions with respect to the nature, the content, the stages and the ways of using the information from the assessments and the measurement”.\(^5\) Thus for example Vikram Desai and Robin W. Roberts propose a model that is based on the assessment of the three main distinctive features of internal audit that are revealed in the execution of the assigned tasks, namely: competence, work performance and objectivity. The above model is a

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\(^2\) Law on the Financial Management and Control in the Public Sector - Prom. SG. Iss.21 of 10 March 2006, amend. SG. Iss.42 of 5 June 2009, amend. SG. Iss.54 of 16 July 2010, amend. SG. Iss.98 of 13 December 2011, amend. SG. Iss.15 of 15 February 2013.

\(^3\) Quality Assessment of Internal Audits - www.qfinance.com, accessed on 05 Mar 2014.

\(^4\) Standards on International Professional Practices of Internal Audit – IPPE.

modernized version of the model of Maletta (1993) and Krishnamoorthy (2002) proposed years ago. The modernized model is called Gener-ates, and the model, according to its creators, is aimed more specifically at assessing the function of the internal audit, through assessing the competence, the work performance and the objectivity of the internal auditors. The new model requires no assessment of conditional probabilities. The model proposed by Vikram Desai and Robin W. Roberts\(^6\) states that each factor affecting the internal audit is to be studied and analyzed. According to the creators of this model - the competence, the work performance and the objectivity can be presented in terms of value using different assessment scales. The propounded model is also called Model of interdependences (according to its creators). The model analyzes the interrelation between the collected evidence and the three factors: competence, work performance and objectivity. The most important aspect of this model is that on the basis of it there can be determined the need for the inclusion of additional auditors in the auditing process at any time during the flow of the control process. The model is presented in the following way:\(^7\)

\[
SS = CY \land WS \land OY \quad (1)
\]

or

\[
Sw = Cn \land Wn \land On \quad (2)
\]

All variables in the presented model are of two values. For instance the Competence factor (C) can have two possible values: the internal auditors are either competent (Cy) or incompetent (Cn). Similarly, the Work performance (W) can be satisfactory (Ws) or unsatisfactory (Wn) and, respectively, the internal auditors can be objective (Oy) or non-objective (On). Therefore according to the presented functional interdependences, in the proposed model the internal audit is of high quality only if the internal auditors are competent (Cy), their work performance is satisfactory (Ws) and they are objective (Oy), i.e. the functional interdependence is of type (1). The internal audit is considered to be of poor quality when the internal auditors are incompetent (Cn), their work performance is unsatisfactory (Wn) and they are not objective (On), i.e. the interdependence is presented by formula (2).

As a good foreign practice with regard to the adoption of a model for assessing the internal audit, there can be given the policy of the Government of Jamaica, which has developed an Internal Audit Quality Assurance Program by way of improving the previously adopted Internal Audit Program.\(^8\) The program has been revised by the Ministry of Finance and is aimed at strengthening the position of the unit on internal audit with the Ministry of Finance. Every effective program for assuring and improving the quality of internal audit starts with the approval of policies, practices and procedures, following the requirements of the International Standards on Internal Audit. During

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the execution of the internal audit there should be done on-going reviews of the operations. Each unit for internal audit is required to do an assessment of the people employed in the audit activity every five years.

According to the approved Program for assessing the quality of internal audit in Jamaica, through it the internal auditors are to build their conclusion on the quality of the internal audit, and also the program is to serve as a basis for the provision of structured proper recommendations, improving the activities of the internal audit. The program is to give an assessment on:

1. The application of the international standards on internal audit.
2. Conformance with the definition of Internal Auditing and the Code of Ethics.
3. The adequacy of the internal audit activity’s charter with respect to the activities, goals, objectives, policies and procedures.
4. The contribution to the organization’s governance, risk management, and control processes.
5. Completeness of coverage of the entire audit universe.\footnote{10}
6. Compliance with applicable laws, regulations or standards to which the internal audit activity may be subject.
7. The effectiveness of activities, continuous improvement and adoption of best practices.

Therefore in order to give an accurate assessment of the quality of internal control, it is necessary to follow exactly the framework for quality assurance and improvement of the programme. The framework can be presented by means of the following figure:

\footnote{9} \footnote{10}
The framework for assessment of the internal audit of Jamaica presented above coincides with the established methodology of the Ministry of Finance in Bulgaria. The two methodologies are structurally identical, since they follow the requirements of the international standards on professional practice in internal audit. The framework which determines the standards in order to carry out an assessment of the internal audit has imperative character. The standards do not preclude the application of another methodology. There can be applied in number methods alongside the methodology set out in the standards. The results of the assessment methods may be identical, but they may also be different. In case of different results, there can be done a more profound analysis by determining whether the suggested new method - different from the one adopted by the standards - is most suitable and effective to the respective enterprise from the public sector.

**Source:** INTERNAL AUDIT QUALITY ASSURANCE AND IMPROVEMENT PROGRAM (QAIP) Policy and Procedures Manual.

**Fig. No 1. Framework for quality assurance of internal audit and improvement of the auditing program**
2. Methods of assessment of the internal audit in the non-public /private/ sector

Internal audit in the non-public /private/ sector has, in recent years, on the basis of the dynamically changing situation, developed and affirmed itself as an important division in trade companies. The internal audit in trade companies has gradually expanded its sphere of operation, taking greater part in the control and the management of risk, as well as in the management processes. In the light of these changes, there have been introduced new auditing concepts having to do with determining the added value of the internal audit and determining its quality and efficiency. In order to determine the quality of internal audit, and also to determine the efficiency and the effectiveness of the system of internal audit, there is the ever increasing need to find appropriate methods for measuring and assessing the operating resources, providing the added value of the audit. For that reason, the main aim of this part of the article is to identify the significant kinds of methods used in determining the quality of the internal audit. In this context, the issues of measuring the quality of internal audit receive increasingly greater valencies, taking into account the changes of the normative system in this direction.

Part of the researchers believe that the quality of the internal audit is measured by way of the added value of the internal audit.\textsuperscript{11} According to the proponents of this thesis, there exist many methods and tools, which can be combined with qualitative and quantitative elements in order to determine the added value which the internal audit realizes.\textsuperscript{12} To this group of researchers there belongs Frigo M. L., by way of the proposed method of \textit{Balanced Scorecard}. The method incorporates the following elements: 1. customers of the internal audit; 2. the process of the internal audit; 3. innovations and opportunities. In designing the model \textit{Balanced Scorecard} its creator is lead by the fact that there are established concepts, which could be applied to the departments of the internal audit, such as:\textsuperscript{13}

1. Measuring efficiency from the point of view of the user of the information of the internal audit.
2. Identifying certain indicators for determining the number of jobs of the internal audit.
3. The connection between the internal audit and the expectations of the customer.
4. The emphasis on the general strategies of the department.
5. The innovations and the possibilities of the internal audit.

Through the model Frigo M. L. aims to emphasize the ways in which the departments of internal audit can improve their activity with respect to the execution of the procedures of the internal audit.


We believe that in order to determine whether the model of Frigo M. L. is effective and easily applicable in the practice, it is necessary to practically compare it with another model. Thus for example, D. Prawitt and J. Smith assess the quality of the internal audit through its impact on financial reporting. There is considered the relation between the internal audit and the management of earnings, through a combination of publicly available data and data which has been processed by the Institute of Internal Auditors (IIA). The proposed model of D. Prawitt and J. Smith is built on the basis of dependent variables, which affect the final assessment of the internal audit. D. Prawitt and J. Smith apply the following multinomial logistic model, in order to check whether the companies, which allow for the expectations of analysts of high and quality management of earnings, are likely to have high quality of the internal audit functions. The entire model is presented by means of the following equation:

$$Above = \beta_0 + \beta_{IAQuality} + \beta_{ACEffectiveness} + \beta_{AuditorSpecialist} + \beta_{Gindex} + \beta_{Asset} + \beta_{Age} + \beta_{Leverage} + \beta_{Complexity} + \beta_{CFO} + \beta_{SalesGrowth} + \beta_{MB} + \beta_{CFOVolatility} + \beta_{ROA} + \beta_{Loss} + \beta_{NYSE} + \beta_{IndustryDummies} + \beta_{YearDummies} + \varepsilon,$$

Where:
- **Above** – internal audit
- **IAQuality** - independent variable, reflecting the inaccurate current accounting of revenues
- **ACEffectiveness** – the effectiveness of the audit committee. Previous studies in the area of financial control show that the higher quality of audit committees is connected with a greater internal participation of the auditors, including greater budgetary expenditures.
- **AuditorSpecialist** is a dummy variable, which shows whether the external auditor is a specialist or not.
- **Gindex** – managerial role in corporate governance.
- **Assets** – total value of the assets. For big companies this reporting entity exerts significant influence on the realization of the internal audit.
- **Age** – the life cycle of the company.
- **Leveraged** – presents the effect (profit or loss) of a given financial operation essential to the company.
- **Complexity** – complexity is taken into consideration since the managers of the companies which have more complex operations are able to invest a greater amount of funds into internal audit, and have greater opportunities to cover the management of earnings.

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CFO – the qualities of the financial officer.
Sales Growth – the growth of the company’s sales.
CFO Volatility – variable cash flows.
ROA – return on assets.
Loss – the loss of the company.
NYSE – data on the company from the New York Stock Exchange /NYSE/, as the companies registered on the New York Stock Exchange are required to perform internal audit.
IndustryDummies and YearDummies – the different levels of extraordinary expenses by activity and year.

It can be concluded that the proposed method is more detailed from the point of view of the variables included in it affecting the internal audit. The applied aspects of the model, we believe, are limited, as it is necessary for the assessor to have adequate and reliable information for each of the components participating in the presented mathematical equation. Although for the presented methodology of D. Prawitt and J. Smith considerable available information is required, we believe that the methodology can be adapted for use in our controlling practice as well. We find the following positive aspects of the proposed method:

1. The connection is determined between the internal audit and the financial and accounting activity of a particular company.
2. The relation is presented between the internal audit and the management of earnings. With the help of the proposed method it is ascertained that there is a directly proportional relation between the two processes. It can be concluded that one of the tasks of internal control is to perform an inspection of the revenues of the company. The higher the quality of internal audit, the more effective the management of earnings is going to be.

In the above model there can also be discovered a number of weaknesses:
1. It is intended for large companies, whose information from the financial statements has been disclosed in detail.
2. The model is not applicable to small and medium-sized enterprises.
3. There is no categorical proof of the relation between the quality management of internal audit and the trend of growth and quality management of earnings for a particular company.
4. The model can be applied in our controlling practice, only after considerable and substantial revision of the components included in it. The reason for this is that part of the dependent variables are not typical of our commercial partnerships, such as the indicator NYSE, which is characteristic of the companies, quoted on the New York Stock Exchange.

Douglas F. Prawitt and Jason L. Smith put forward another method for determining the quality of the internal audit. The researchers suggest that the function of the internal audit be measured with the help of a complex assessment comprising six individual components determining the quality of the internal audit. The method conforms to the requirements of Standard 65 (SAS 65). The method is aimed at
assessing the quality of the internal audit in respect of its role in financial reporting.

According to Douglas F. Prawitt and Jason L. Smith the quality of the internal audit is connected with the management of earnings. For that reason it is necessary that in the management of earnings we watch for wrongful increase in revenues and what the likelihood of not reaching the revenues forecasted by analysts is.\(^1\)

Other specialists suggest the assessment of the internal audit be measured by means of the discovered internal violations and fraud. The French specialist Sansakrit S. Vichitlekarn offers a model for revealing the interaction between the manager of the company committing the fraud and the internal auditor, who wishes to uncover those. In their model S. Vichitlekarn denotes with \( \theta \) the probability that the control system features some kind of deficiency and with \((1 - \theta)\) the probability that the control system is effective. \( F \) denotes the advantage the manager gets when the fraud is not discovered. If the control system is effective, it means that the manager has made the necessary effort \((w)\) in order to achieve this result, through the elimination of the fraud \((F - w)\). When the company is involved in fraud and this is ascertained by the auditor, the people managing the company are to bear the respective sanctions \((R)\) in the form of fines, sanctions including the heavy measure of imprisonment. The probability that the manager is up against the kind of system \( t \in \{w, s\} \) for committing fraud in the context of a mixed system is \( \beta \in [0,1] \).\(^2\)

In the proposed model of Sansakrit S. Vichitlekarn there is provided the opportunity to determine the efficiency of the control system through the application of substantive testing (i.e. through determining the intensity of the work), denoted as \( x \) \((x \in [0, \infty)\) respectively), on the basis of the knowledge of \( \theta \). If the manager decides to commit fraud, the probability of the auditor uncovering it is \( d(x) \). The author suggests that the control function for revealing fraud be \( d(x) \) and it be presented in the following manner:

\[
d(x) = 1 - \exp(-bx), \quad \text{where the parameter } b \in [0, \infty). \quad ^3
\]

Through the presented model there is proven the responsibility of the auditor for the discovery of fraud in the structure being inspected and the importance of that responsibility for the definition of an accurate assessment of the quality of the internal audit. We believe that the presented model has its weaknesses, since during the auditing process there may not be noticed some insignificant deviations in the indicators of the unit being inspected, but this does not mean that the auditing job has been carried out inaccurately and without the required dose of professionalism on the part of the auditor.

The complexity of the auditing assessments of quality, regardless of whether they are internal or external assessments to a particular organization, makes them

\(^1\) Prawitt, D., Smith, J., INTERNAL AUDIT QUALITY AND EARNINGS MANAGEMENT, The Accounting Review, Vol. 84, No. 4, pp. 1255-1280, 2009


\(^3\) Vichitlekarn, S. The Interaction between Internal Control Assessment and Substantive Testing in Audits for Fraud. Contemporary Accounting Research Vol. 17 No. 2, pp.327-56.
always topical as objects of study. Their complexity and dynamism are determined by the dynamics of organizational development, and as a result of that there is also the improvement in the methodology of internal control. It can be concluded - on the basis of everything presented thus far - that the assessments on the quality of the internal audit are a process of determining the efficiency and effectiveness of the organization, through the performance of comprehensive, qualitative and appropriate auditing procedures. In practice it is suggested that the methodology of the assessment be viewed individually in two independent areas, namely the one methodology concerning external appraisals for assessing the quality of the internal audit, whereas the other is to be directed towards internal assessment.\(^\text{18}\) The internal assessment can be done by means of the combined application of the following auditing approaches:

1. The auditing process “\textit{backward glance}” – according to this approach, part of the audits conducted during the current year are to be compared by way of results with previously performed audits. The number of audits which will be analysed in this way is determined by the head of the internal [audit], in concert with its director. The purpose of this comparison is to establish whether there are any omissions in the auditing procedures and whether the assessment methods have been applied correctly.

2. Auditing process “\textit{performance in real time}” - the aim of this approach is to make an assessment of the advancement of the entity being audited by making a comparison with the previously planned data. On the basis of the comparative analysis, there is presented the assessment on the state of the internal audit.

3. The use of auditing \textit{questionnaires}. The aim is, using specific questions, whose answers are of the closed type – “yes” and “no”, to survey the internal auditors of the organization and on the basis of the responses to work out the assessment: first of the audited unit itself; second, in this way there can be worked out an assessment of a particular auditing commitment/commitments; third, to work out an assessment of the internal audit of the entire organization /if the organization is made up of individual units, i.e. to give a generalized assessment of all structural units of the organization/.

\textbf{3. Theoretical comparison between the presented methods}

In a systematic manner, the comparison between the presented methods for determining the quality of the internal audit from the public and the non-public (private) sector, is presented by means of Table No 1 and Table No 2.

Table 1

Differences between the presented in the article methods for assessing the quality of the internal audit in the public sector

<table>
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<tr>
<th>Methods</th>
<th>Application of the systematic approach</th>
<th>Application of the disciplinary approach</th>
<th>Responsibility for the application of the method</th>
<th>Possibility for realizing the controlling functions</th>
<th>Development</th>
<th>Object of assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The methodology set out in the standards on internal audit in the public sector</td>
<td>Yes</td>
<td>Yes</td>
<td>The management of the organization from the public sector</td>
<td>Yes</td>
<td>The higher authority</td>
<td>The quality, efficiency and effectiveness of IA</td>
</tr>
<tr>
<td>2. Method of Vikram Desai and Robin W. Roberts</td>
<td>Yes</td>
<td>Yes</td>
<td>The internal auditors, the application of the method is recommended</td>
<td>Yes</td>
<td>The higher authority</td>
<td>The qualities of internal auditors – competence, work performance and objectivity</td>
</tr>
<tr>
<td>3. Model Generates</td>
<td>Yes</td>
<td>Yes</td>
<td>The internal auditors and the leadership, the application of the method is recommended</td>
<td>Yes</td>
<td>The higher authority</td>
<td>The functions of control</td>
</tr>
<tr>
<td>4. Method of Douglas F. Prawitt and Jason L. Smith</td>
<td>Yes</td>
<td>Yes</td>
<td>The internal auditors and the leadership, the application of the method is recommended</td>
<td>Yes</td>
<td>The higher authority</td>
<td>The object of assessment is as per Standard 65</td>
</tr>
</tbody>
</table>
Differences between the presented in the article methods for assessing the quality of the internal audit in the non-public/private/ sector

<table>
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</thead>
<tbody>
<tr>
<td>1. Method Balanced Scorecard</td>
<td>Yes</td>
<td>Yes</td>
<td>The internal auditors and the leadership, the application of the method is recommended</td>
<td>Yes</td>
<td>The higher authority</td>
<td>Measuring the efficiency of the internal audit</td>
</tr>
<tr>
<td>2. Method D. Prawitt and J. Smith</td>
<td>Yes</td>
<td>Yes</td>
<td>The internal auditors and the leadership, the application of the method is recommended</td>
<td>Yes</td>
<td>The higher authority</td>
<td>There is assessed the quality of the internal audit through its effect on financial reporting</td>
</tr>
</tbody>
</table>
In the controlling practice there may be put forward various models of assessing the quality of the internal audit by the researchers studying these issues. We believe that this diversity has both its positive aspects, and that there can also be found different shortcomings. The majority of the “new” models are well-known old models. They have been modified and modernized and there has been included in them some additional factor for analysis. Sometimes the greater the number of models there are applied to the study of a particular problem /in this case the assessment of the quality of the internal audit in the public sector/ , the greater the amount of the various data that can be obtained for comparison and analysis. There can also be determined which of the methods is more effective on the basis of the obtained results, as well as the possible deviation and the scale of the tolerable statistical and mathematical error. The errors in the mathematical – statistical methods do not arise as a result of the model itself, but rather are the consequence of incorrectly grouped and/or gathered information from the prime source. The subjective referral of the facts and the data to some area by the analysts is also a factor for making errors.

On the basis of all that has been presented so far, there can be made the following more significant conclusions with regard to the methods of assessing the internal audit in the public sector:

1. The variety of methods existing in the practice shows that there has not yet been discovered a unified method, which would be applied by all organizations from the public sector.
2. The methods can be applied in combination, they are not mutually exclusive, rather they complement each other. This peculiarity contributes to the constructiveness of internal audit and its continuous improvement.
3. More modern models represent already obsolete models adapted to the contemporary conditions, which are not so effective for the times. They include in their range new objects of analysis, which were not the object of study in the older models. For instance the information about the organization from the stock exchange /having in mind the internal audit of companies, which are not budget organizations/; the duration of the auditing job; the importance and the significance of the organization for the public sector, etc.
4. The considerable differences between the presented methods represent the methodological connection between the constituent structural elements. The participating divergent indicators are determined by the object of assessment, as well as by the technology of the assessment.
Despite the scanty theoretical presentation of the individual methods for assessing the quality of internal audit, in conclusion it can be generalized that the available methods are evidence of the irreversible metamorphic change of internal audit. Through the present article, even though theoretically, it has been proven that the analysis of internal audit can be carried out with the help of different methods, but the choice of application of the respective method is the individual approach on the part of the managers of the organization. For the public sector it is compulsory to comply with the requirements and the rules set out in the standards on internal audit, but the standards do not exclude the application of other methods. From the point of view of the non-public/private sector, the only requirement to internal audit is set out in The Law on the Independent Financial Audit, namely the formation of audit committees. This requirement is once again limited and it is targeted only at the companies, which are of public interest and issue securities. In the normative acts there isn’t set out a methodology for assessing the quality of internal audit, since each company carries out specific control procedures dependent on the specific character of the activity of the company.

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METHODOLOGICAL FOUNDATIONS OF THE ASSESSMENT OF INTERNAL AUDIT

Assist. Prof. Dr. Plamena Nedyalkova

Abstracts

The assessment of internal audit in the public sector has always been a fundamental issue, since on the basis of the assessment process there are identified many of its distinctive features, such as: quality, efficiency, effectiveness, economy, reliability, etc. In the controlling practice there exist different assessment models, which, due to their specific character, are very often applied incorrectly. For that reason, the aim of the present article is to present systematically the distinctive features of the established methods of assessment of internal audit. The article is of a theoretical orientation towards the variation of the control methods for assessing the quality of the internal audit in the organizations from the public and the non-public /private/ sector. Through induction, deduction and the comparative approach as research methods, the aim is to fulfil the main task of the article, namely to make a comparison between assessment methods. The absence of a piece of practical and applied research work is one reason for limiting the scope of the article and not verifying in detail the purpose of the respective method of determining the quality of internal audit.

Keywords: method, assessment, internal audit.