

ACCOUNTING AND AUDIT IN THE DIGITAL ERA

RAČUNOVODSTVO I REVIZIJA U DIGITALNOJ ERA

*Zoran Todorovic*¹

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Review

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Abstract

Last years information technologies brought innovations in businesses. Technology innovations have influenced accountant and audit professions. The aim of this paper to conduct research in Montenegro regarding the phase of development of business information systems in Montenegro and impact to accounting in Montenegro. The data collection strategy is a structured web survey, in which managers and accountants were asked to answer certain questions that we need to consider. Managers (responsibility for information system), and accountants (responsibility for accounting) are selected as the target groups. The survey was conducted in June 2016. The data collected were statistically processed using SPSS 17.0.

Key words: *Services, digital business, information-communication technologies, accounting, auditing, the digital of economy.*

Sažetak

Zadnjih godina informacione tehnologije su donijele inovacije u biznise. Tehnološke inovacije uticale su i nastavljaju da utiču na računovodstvene i revizorske profesije. Cilj ovog rada je sprovođenje istraživanja u Crnoj Gori u vezi sa fazom razvoja poslovnih informacionih sistema u Crnoj Gori i uticajem na računovodstvo. Strategija prikupljanja podataka je strukturalna veb anketa, u kojoj je od menadžera i računovođa zatraženo da odgovore na određena pitanja koja treba da razmotrimo. Menadžeri (odgovornost za informacioni sistem) i računovođe (odgovornost za račune) su izabrani kao ciljne grupe. Anketa je sprovedena u junu 2016. Prikupljeni podaci su statistički obrađeni pomoću SPSS 17.0 statističko paketa.

Ključne reči: usluge, digitalno poslovanje, informaciono-komunikacione tehnologije, računovodstvo, revizija, digitalizacija ekonomije

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¹ Mediterranean University

1. INTRODUCTION

The fourth industrial revolution is in the making, allowing businesses to operate in a fairly different way; enabling technologies to include artificial intelligence, devices for working on the Internet, cyber systems, nanotechnology and biotechnology. Professional accountants and accounting practices, procedures and processes require some customization. Education and training of professional accountants also requires a certain adjustment. The human factor has been increased thanks to the capabilities of machines, such as an electronic calculator that allows people to count faster, will enable scientists who know how to conquer the benefits of using these machines. The three primary technological innovations direct this significant change to modern (current) accounting practices, processes and methods: a structured digital financial report based on XBRL, a scientifically based system and other artificial intelligence applications, and in printed form of distributed business books. Although it is difficult to accurately predict the productivity of the winnings that will be realized, initial information shows that the productivity of these gains will be very significant.

What is now called the "Fourth Industrial Revolution" is changing the way businesses operate, and professional accountants and auditors should adapt to these changes in order to remain relevant and successful. Training and education of professional accountants also requires changes and adjustments to better prepare new students and to enable retraining of professional accountants in order to adapt to new technologies, new practices, procedures and processes enabled through modern technologies.

It is understandable that from time to time those who report this kind of change tend to statistically exaggerate the scale of changes and the rate at which changes are taking place. However, some accountants, accountants and auditors could lose their jobs if they do not match their skills appropriately; it is better to think about this, not through professional terms, but rather to consider the tasks that we are doing. Specific tasks are specific, and not necessarily the whole workplace. In addition, the volume and pace of conversion (automation) through automation is on the rise.

2. THE ROLE OF ACCOUNTING IN MODERN ECONOMY

As it is well-known, the accounting information covers most of the information system of an enterprise, and it is used by the specialists of the administrative apparatus for planning, economic analyses, auditing, and the compilation of various forms of reporting. Accounting controls the performance of the targets during the reporting period and provides information for planning and forecasting economic development. Economic analysis is based on accounting data, and managers use them to study the reasons for deviations from the plan, identify reserves for the improvement of efficiency in business activity, and check compliance with the legislative regulations governing business relationships. Accounting data are also

used for overseeing development in a country's economy; and accounting indicators are widely used for statistical generalizations.

For this reason, the largest part of the information system of a company comprises accounting information on the receipt and use of material and financial resources and production processes, and on implementation, remuneration, costs and results of activities in accordance with the requests of the various users. Accounting information is available for a large number of users: the owners, lenders, contractors and representatives of government authorities, the management personnel of the company, independent analysts and auditors, etc. Scientific literature classifies users by their features. For the purpose of this research, the users of accounting information are divided into an external and internal group.

A fully integrated information system means is condition for improving productivity of accounting. It allows that users are no longer divided into "information rich" and "informational poor". So, with such a system, "cuisines" of persuasion due to lack of knowledge are reduced. But integration goals, although worthy of praise, must balance with threats of penetration of negative phenomena that discourage individuality, innovation and creativity. In companies where there is no natural communication, marketing can sell one product, production can be done by another, and engineering can make undue changes. When information is exchanged, in addition to better coordination between operations, better tactical and strategic decisions are made. Marketing reveals changes in consumers' tastes and changes in competition. The information received is communicated to engineering that designs simulations and plans the material needs and analyzes the cost of product improvement to meet the changing needs of the market. Further, information is communicated to production that simulates the production plan, plans production resources, and analyzes the necessary personnel. This information is coordinated with the planning of the required capital and financial analysis.

The methodology of this paper is to get knowledge about the growth phase of information system in organization in Montenegro in order to discover potential of it to for increasing productivity of accounting. After that the collected information through the parallel survey of accountants will be crossed to get the final conclusion about influence of technological innovation to accounting in Montenegro.

3. THE PHASE OF DEVELOPMENT OF INFORMATION SYSTEM OF A COMPANY

We use the Nolan-Gibson model to determine at what stage of growth is the information system of of compaies in Montenegro. To determine the phase, we have used lickert schale. This is the way to discover the potential of information system to change accoutning in Montenegro. This scale contains also questions relted to the way of rporting inoformation in accountina. According to Nolan-Gibson model the information system of each oragnizciaon is developing through six phases: initiation, contagion, control, itegration, administration of data, and maturity.

Initiation. The organization starts with the purchase and use of computer equipment. The computer is usually installed to reduce costs. The computer system is most often located in the accounting department, since this section of the data processing application is dominant. In very rare resemblances, independent data processing departments are formed. The costs of investing in the computerization of accounting work are relatively small.

Contagion. The organization is spreading knowledge about the benefits of using a computer. New applications on the computer are being developed and implemented, but without a complete plan. The number of computer staff grows in response to increased user requirements. During this phase, data processing costs are rapidly increasing.

Control. Management sees an uncontrolled growth in the cost of introducing computers and establishes control. The focus is on establishing planning and making a step away from already routine data processing. The management team is striving for some investments to support decision-making.

Integration. Systems, which were implemented as separate entities, at this stage connect and integrate the applications into one comprehensive information system. Integration is largely implemented through functional areas such as accounting and finance, marketing, production, procurement, maintenance, and the like. Costs are balanced and become less constant.

Administration of data. Data and information become a significant resource of an organization. The organization understands the importance of databases for data processing and decision support systems. The database management system is implemented to manage the data resource.

Maturity. At this stage, all the main components of the information system based on the computer are established. Terminals and microcomputers are installed throughout the organization. Information management support ensures the achievement of strategic advantages of the organization. The use of information by the users is fully ensured by the high level of IT education. The organization, therefore, fully uses the information system in achieving its mission and goals.

4. METHODOLOGY

The survey was filled out by 120 respondents targeted at managers, and accountants from companies of different types in Montenegro. The data acquired for the purposes of this research has been processed in the SPSS software. According to the purpose defined in the hypothesis of work, the data analysis used: descriptive statistics.

4.1 Results, and analysis

First step in our empirical research is collecting data and defining the phase of information system growth by Nolan Gibson model. Through a four-step

scale, respondents were asked to evaluate the extent to which these characteristics are represented in the organization. Likert scale is shown in Tables 1, 2 and 3. The information system of investigated companies is at phase above control. It means that it has a very great potential for improving accounting.

Table 1 - Relevant characteristics of IS - management and decision support

QUESTIONS	Mean
To what extent does the existing IS support the organization's strategic management?	3,0
To what extent does the existing IS support tactical management of the organization?	3,28
To what extent IS supports operational management of the organization?	3,86
To what extent does the existing IS improve the critical performance factors of the organization?	2,34
To what extent is the existing IS effective and efficient for the successful functioning of the organization?	2,34
Does the IS contribute to the improvement of the decision making process and management?	2,24
Is IS beneficial for organizational procedures?	2,62
Is IS beneficial for information flows in the organization?	2,55
Does the IS contribute to improving decision-making in the work process?	2,52
Does the IS have a beneficial impact on the information flows between the organization and the relevant environment?	2,14

Table 2 - Relevant characteristics of IS - characteristics of information

QUESTIONS	Mean
Is the information obtained by the existing IS relevant to solving tasks and making meaningful decisions in the process of performing the organization's functions / relevance of the information?	2,93
Does the existing IS provide the right information to the right places / adequate distribution of information /?	2,97
Does the existing IS allow the right user to receive the right information on a timely / timely distribution of information /?	2,86
Does the existing IS allow the user to receive the information in an appropriate, appropriate form / suitability of the form of information /?	3,14
Does the existing IS allow the user to obtain an adequate amount of information / the appropriateness of the amount of information /?	3,07
Does the existing IS allow the user easy and quick access to information that is suddenly needed / available ad hoc information needed?	2,52
Is a convenient user interface IS?	3,10
Is the use of IS easy and fast training for use?	3,34
Is IS answering at a fast pace?	2,93
Do you consider useful IS graphics?	2,59

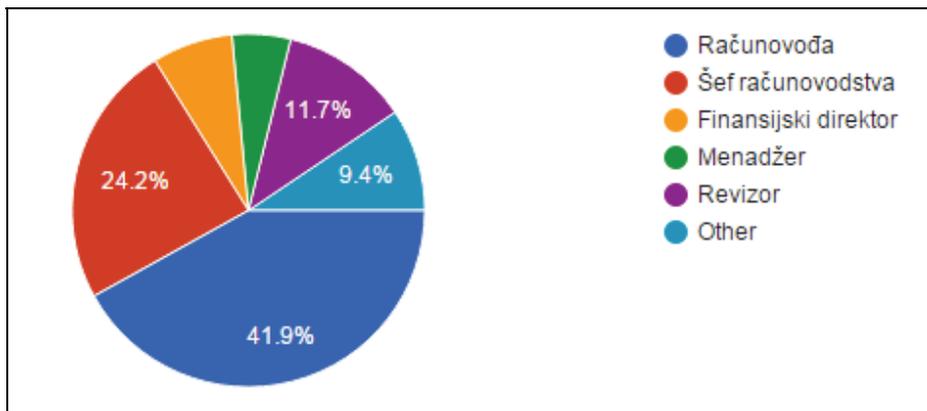
Table 3 - Relevant characteristics of IS - hardware, software and human resources

QUESTIONS	Mean
Are the eligible costs of IS functioning acceptable?	3,28
Is the degree of hardware utilization acceptable?	3,17
Is the degree of use and value of the software acceptable?	3,03
Is the level of involvement of IS staff acceptable?	3,72
Are adequate IS communications?	2,28
Is the available hardware sufficient and adequate for the effective and efficient functioning of ISs?	2,41
Is the available software adequate for the effective and efficient functioning of ISs?	2,76
Is the staff available enough?	2,41
Do the available staff have sufficient expertise and skills necessary for the successful functioning of ISs?	2,66
Is the system documentation complete, valid, up-to-date and reliable?	2,69

4.2 Other results

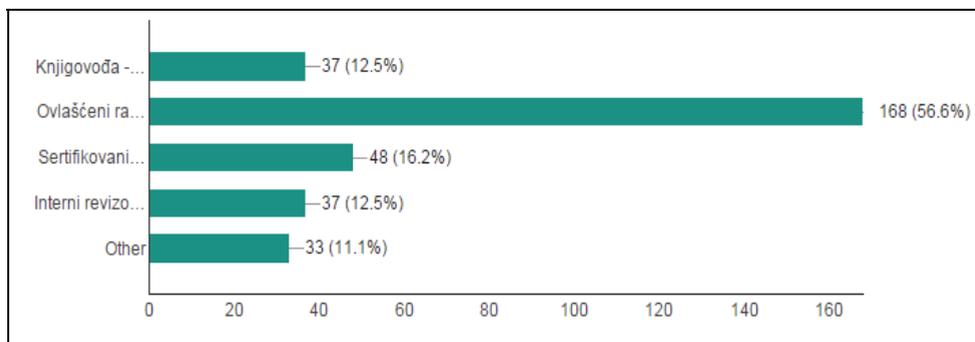
Regarding the position of respondents in companies, we can conclude that accountants are mostly represented (41.9%) and accountants (24.2%).

Graph 1. - Position of the respondents



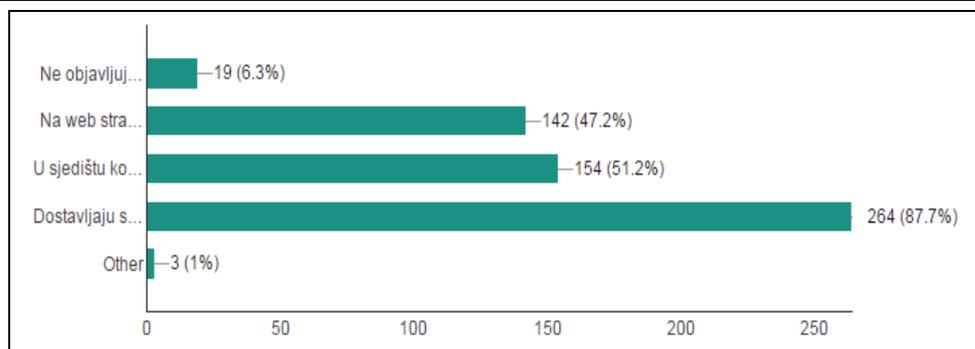
More than half of the respondents have the title of certified accountant (56.6%), while 16.2% of the respondents own a certified accountant.

Graph 2. - The level of professional proficiency of the respondents



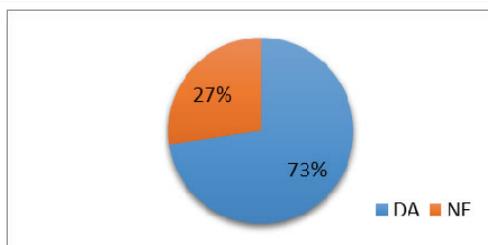
In most cases, the financial statements are submitted to the competent authorities (87.7%), which is their legal obligation, and they are available at the company's headquarters (51.2%). A little less than half of the respondents (47.2%) reported that the financial statements were published on the company's website. This may be an indication that, in addition to meeting the minimum legal requirements, companies are trying to achieve greater transparency of their business by publishing financial reports on the Web.

Graph 3. - The manner of publishing the financial statements



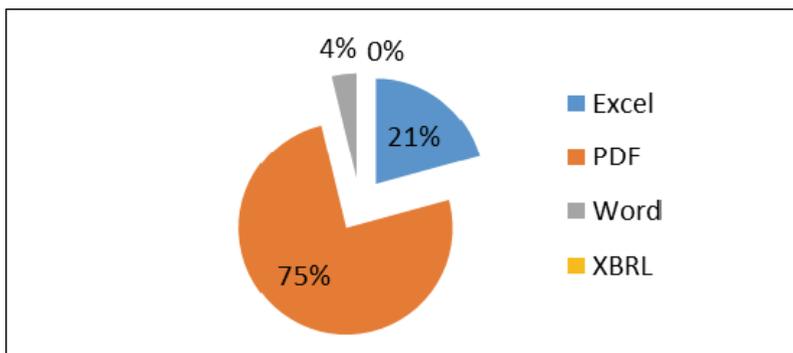
Also, the analysis shows that 73% or 77 companies own a website, while 27% or 29 companies do not own a website.

Graph 4. - Position of the Website



However, these results have been somewhat corrected, bearing in mind the fact that most companies publish financial reports in PDF format (75%), more than 20% in Excel, while the smallest number of companies (4%) publish their financial statements in Word.

Graph. 5. - Formats of publication of financial statements



To summarize, business information is virtually "locked" within static formats such as Excel, Word, or PDF, which prevents their efficient exchange and leads to inconsistency. Although useful for processing, these formats do not offer advantages over photocopies, at least when it comes to sharing information. Converting information from one format to another requires very intense work, which is naturally subject to human factor errors. Also, due to possible errors that often occur when re-entering the data, the data must be re-matched with paper forms - which is an expensive, unproductive and time-consuming process.

The issues raised in this way confirm that the basic requirement for the exchange of data and information between different information systems imposes the achievement of compliance with the compatibility of communication protocols. For this reason, XBRL offers a unique solution to the previously formulated problem, since the implementation of this standard provides first of all the possibility of agreeing on how information will be exchanged. However, despite the fact that the benefits of using XBRL are reflected in all factors in of the relevant institutions - this survey shows that the implementation of XBRL did not come to life in Montenegro.

CONCLUSION

It is obvious that digital economy has brought significant improvements in accounting. The survey was filled out by 120 respondents targeted at managers, and accountants from companies of different types in Montenegro, and proved that digital technologies has influenced positively accounting in Montenegro. Very important condition for improving corporate reporting has been achieved in Mon-

tenegro. By using very known methodology (Nolan-Gibson), in this paper the growth phase of information system in organization in Montenegro was determined. Information system in organizations in Montenegro allows execution accounting activities at good level. It has functionality, with connection and integration the applications into one comprehensive information system. Integration is largely implemented through functional areas such as accounting and finance, marketing, production, procurement, maintenance, and the like. Costs are balanced and become less constant. Of course, it is very good base for improving accounting, reporting, and audit.

The format of reports in organization in Montenegro, although useful for processing, do not offer advantages when it comes to sharing information. XBRL offers advantages, and implementation of that is desirable.

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