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OPTIMIZATION OF TAX SYSTEM BUSINESS PROCESSES

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ABSTRACT

The article is devoted to the consideration of pressing issues related to the optimization of the tax system business processes. On the example of work with weakly profitable and unprofitable enterprises, electronic document management organization and the operation with payer statements, specific recommendations are proposed based on modern digital technologies for these business processes optimization. So, in particular, they substantiated the feasibility of the Online Analytical Processing (OLAP) database, Data Mining, cloud service, the XBRL (eXtensible Business Reporting Language) language, and the taxonomy of financial reporting application.

1. INTRODUCTION

Given the globalization and integration of economic relations, the modernization of public administration, providing for tax reform, is an urgent requirement of our time. The goal of this reform is to build a tax system that is simple, economically fair, with minimal time spent on calculating and paying taxes, creating the necessary conditions for the sustainable development of the national economy and ensuring sufficient filling of the state budget and local budgets.

2. MATEIAL AND METHOD

In the course of this study, the selective analysis of specialized literature with a high citation index according to the topic indicated in the title of the article. In particular, information on Warehousing technology was collected in combination with OLAP and Data Mining technologies. The generated array of information was systematized and synthetic.

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2.1 RUSSIA TAXATION SYSTEM AND PROCESS

Public administration of the taxation system is a rather complicated process, which consists in combining the methods, regulatory framework, information support tools used by supervisory authorities to monitor the compliance with current legislation by business entities (Dzhevitskaya & Magina, 2018). Due to the availability of significant amounts of information and a strict time limit for result obtaining, there is a need to optimize the business processes of the tax system by a modern information technology application.

It can be noted that today the system of levying taxes and fees has certain achievements in the direction of modern information technology used to optimize business processes, for example, an automated information architecture is being actively introduced that can provide the solution of accounting problems of the highest level and combine the tax authorities of a separate state in common data area. Information technologies are also widely used in the field of an integrated tax system building and use for individuals and legal entities in the context of the main types of taxes and obligatory payments, electronic information interaction of regulatory authorities and taxpayers is rapidly spreading using electronic document management and digital signature. The automation of tax and fee administration processes is actively implemented.

But at the same time, it should be noted that the greatest information load falls to a lower level - local tax authorities. They are faced with a wide variety of problems related to the optimization and efficiency of business processes, which, unfortunately, have not been fully resolved yet.

In this context, for example, the work with weakly profitable and unprofitable enterprises is one of the directions of the tax system business process optimization at the micro-level, which requires high-speed automated mechanisms for inspectors to identify and track such enterprises in real-time. The presence of such mechanisms may be the basis for the inclusion of enterprises in the inspection plan since the inspector will have all the financial and economic activities of a taxpayer in his field of view.

2.2 TAX AND OPTIMIZATION OF BUSINESS PROCESSES

The speedy resolution of issues is also required on the optimization of business processes that are related to the provision, processing and analysis of financial statements; the organization of electronic document management in the tax system and, above all, between its central and regional levels, given the fact that this is a fairly costly process involving the acquisition of expensive hardware resources and the need to attract special maintenance personnel.

Thus, the abovementioned circumstances determined the relevance of the chosen research topic, its scientific and practical significance.

2.3 TAX AND DIGITAL AGE

Paying tribute to the results of existing studies on this issue, it should be noted that in the context of the “knowledge economy” development and the widespread adoption of digital technologies, certain issues of business process optimization in the tax system using modern developments in the field of informatization require further in-depth study, which in general determines the focus of this article.

First of all, it should be noted that in the process of business process optimization in general, and those that are included in the work with specific payers, for example, weakly profitable and unprofitable enterprises, using advanced information technologies, it is necessary to focus on

real-time interaction procedure provision, which will reduce the complexity of regular reporting development in a centralized processing of information.

So, according to the author, in order to improve the cooperation with weakly profitable and unprofitable enterprises, it is advisable to use such communication tools that will provide not only wide technological capabilities for automation of management activities, but also will be the basis for a very diverse virtual network technology option development, including distributed global computer networks, e-mail, and the digital networks of integral calculation. All of them should be oriented towards technological interaction in a single information space of a set of objects that are formed as the result of transmission, processing, accumulation, and protection of data and are integrated computer systems for processing the information of great complexity (Malygina & Mokieva, 2018).

2.4 TAX AND VIRTUAL TECHNOLOGY

In terms of unified virtual environment development and the use of virtual technologies, it becomes possible to create computer information and an analytical system to evaluate and analyze the financial condition of an enterprise for a tax department inspector (Mironov et al., 2017). Many issues that arise during virtual environment management are impossible or very difficult to solve within the framework of transactional DBMSs because their structure is very normalized for accounting data and poorly adapted for analytical processing (Volkova & Tikhomirova, 2018).

Continuing the theme of new virtual technology effective use in the field of taxation business process optimization of low-income and unprofitable enterprises, it seems advisable to use databanks that allow the efficient use of the accumulated arrays of primary information, given that they usually:

- can be located in various units, most often in those that do not have an online connection;

- data can be located in different databases of systems from different manufacturers and it is extremely difficult to connect them together.

3. ONLINE ANALYTICAL PROCESSING (OLAP)

A key component of a databank organization is Online Analytical Processing (OLAP). In recent years, analytical data processing has caused increased interest around the world, and analytical modules have appeared in the composition of the main foreign financial and production applications. OLAP is just the technology that turns raw data into information and knowledge for end-users, in our case, for tax authorities (Morozova et al., 2018).

So, the purpose of OLAP use in the tax system is to analyze the data and present the results of this analysis in a form convenient for perception and decision-making. Despite the fact that the main idea is to develop multidimensional cubes that will be available for user requests, the initial data for OLAP cube development is usually stored in relational databases. Often these are specialized relational databases, also called Data Warehouse. Unlike operational databases, with which data-modifying applications work, storages are intended exclusively for data processing and analysis. Therefore, they are designed so that the query execution time is minimal (Stevens, 2015).

In order to be able to get analytical solutions for tax officials during check and analysis of low-profitable and unprofitable enterprises, the author believes that Warehousing technology used in combination with OLAP and Data Minning technologies is the most effective method. Due to this combination, the user gets convenient tools and the tools for a multidimensional analysis of the

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accumulated data and a better supply of information to the management contour of the tax department. If OLAP allows you to track trends and dependencies that exist at the moment, then Data Mining is the technology that helps to identify hidden patterns and relationships based on dependencies and trends, and thus, make a forecast or justify actions in the future.

As was noted earlier, special attention during business process optimization should be given to the format of financial statement submission in electronic form, which tax authorities should receive from taxpayers.

4. XBRL (EXTENSIBLE BUSINESS REPORTING LANGUAGE)

According to the author, one of the possible steps to optimize the specified business process is reporting in XBRL (eXtensible Business Reporting Language) format.

In XBRL language, financial data is submitted using tags, for example, <Inventories>5000</Inventories>, which simplifies their processing and interpretation by computer technology. However, the issue arises concerning the correct interpretation of the concept of "Reserves" by a computer, as well as the set of meanings that it can take. Therefore, metadata is assigned to this category, which allows us to identify "Inventories" as a category of accounting, as well as describing its interaction with other concepts and its compliance with regulatory acts. That is, the syntax is supplemented with semantics, which is implemented by taxonomy in XBRL.

Structurally, taxonomy consists of a scheme that contains definitions of elements (for example, assets, capital, etc.), including their names, identifiers, and other characteristics, as well as relationship bases, where the relationships between taxonomy elements and data sources are revealed (Del Castillo, 2007).

The XBRL schema, from a technical point of view, is an XML schema adapted to modern business requirements, in particular, the tax system requirements, and has the form of an XSD file. And economic concepts (such as stocks, liabilities, expenses, etc.) presented in the scheme are called elements and are presented in such a way that their main characteristics can be determined: name, period type, balance nature, and this indicator type. Each element is endowed with its own name, and namespaces are used for its recognition, which looks like www-locators (for example, http://xbrl.iasb.org/int/ua/ifrs/). The use of URLs is conditioned by their uniqueness, and, therefore, the ability to designate the elements that are exclusive to a particular scheme. Also, instead of full address use, you can assign a prefix and use not the entire URL ifrs = http: //xbrl.iasb.org/int/ua/ifrs/, but only "ifrs" (for example, <ifrs: Reserves />).

After the determination of the elements and their characteristics, it is necessary to provide a description of the relationships between the elements, indicating their location and determining the type of connection. This is implemented using the "relational database" and XML technologies: Xlink and XPointer. The first of them is designed to create hyperlinks in XML documents, and the second is to search for certain structural parts of documents.

Currently, there are five types of "relationship bases", in particular: labels, links, presentation of calculations and definitions. The bases of labels and links relationships connect the elements with external sources of information, and the relationship bases for the presentation of calculations and definitions describe the relationships between the elements (Del Castillo, 2007).

Thus, the taxonomy of financial statements is a technical mapping of formalized requirements

for reports, providing visualization and comparison of financial data in the tax system. Such standardization will significantly reduce the cost of support, monitoring, and analysis of the data received from taxpayers, and provide relevant information to a wide range of users, which, in turn, will simplify the process of tax and mandatory payment administration.

5. INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRS)

An additional advantage of report preparation and submission in XBRL format is its availability since in order to use IFRS taxonomies you do not need to buy specialized software, as it is available on the official IFRS website and is free of charge.

It also seems appropriate to focus on such a business process as electronic document management in the tax system as a whole and within its individual links, in particular.

6. APPLYING CLOUD TECHNOLOGY

The most optimal solution for the business process optimization concerning the provision of an electronic document management system is the use of cloud technologies.

By cloud computing in this article we mean the model for ubiquitous and convenient network access implementation concerning the structural units of the tax system, as necessary, to a common pool of configurable computing resources that can be quickly provided and allocated with minimal management efforts and the need to interact with a service provider.

Most European countries have taken the path of distributed sales of tax system portals focused on two categories of users - citizens and the business community, as well as individual portals for different groups of services (Mendlowitz, 2016). A number of countries have implemented additional infrastructure elements for the exchange of electronic documents and mail messages between citizens, legal entities and tax authorities. Also, they provide official notification of a document receipt with a legally significant status. This kind of system is implemented in the Netherlands (GTP, Government Transaction Portal) and in Austria.

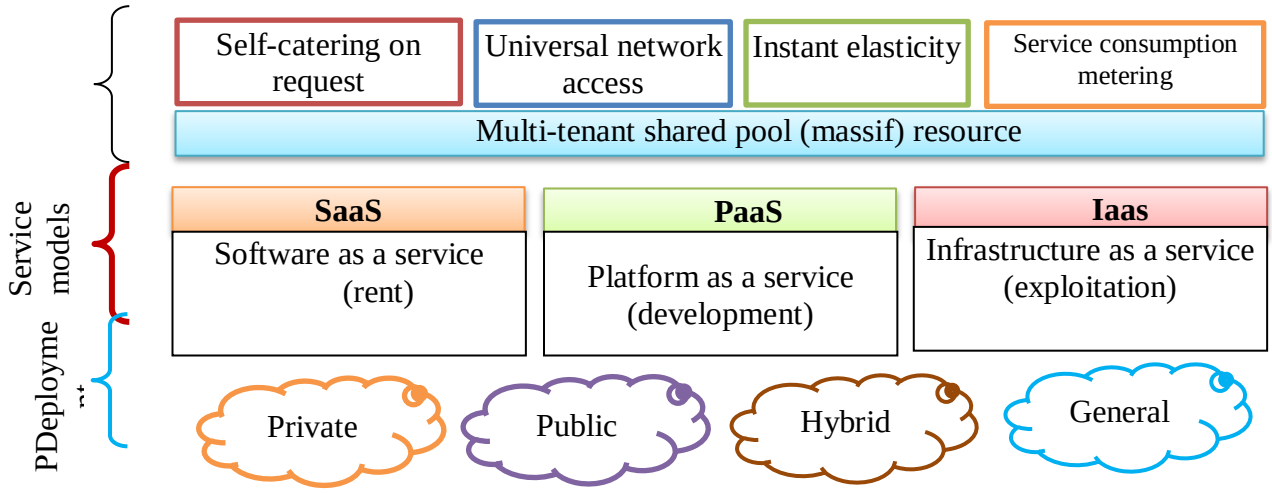

Figure 1: Cloud technology description, cloud deployment models, and core service models

A variety of cloud technology deployment models allows you to create different versions of electronic document management systems for the tax system. The type of cloud is primarily

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determined by customer requirements for consumed IT services and the limitations of applied information systems and applications. Figure 1 shows the characteristics of cloud technologies, cloud deployment models, and key service models.

A private cloud can become the center of information interaction between the central apparatus of a tax system and its regional branches. It will be based on the hardware, software and administrative resources of the central authority with an appropriate VPN network. Existing servers, storage devices, and networks are integrated into a private cloud using special applications that allow you to use available resources with the cloud functionality and get full scalability and automated servicing for system users.

Depending on a task, both applications and infrastructure can be transferred to such a private cloud. In such an electronic document management system, the documents of various levels of confidentiality can be moved. At that, the central authority will ensure an appropriate degree of data protection.

To reduce the load and increase the efficiency of activities, part of the workflow can be transferred to another (public, hybrid) cloud.

7. RESULTS AND DISCUSSION

The transition from traditional IT infrastructures to the use of cloud technologies is not an easy task for the tax system as a whole. Tax authorities can benefit from the following factors: understanding the advantages and disadvantages of cloud computing; the definition of requirements for the cloud model and architecture; identification of necessary changes in IT operations and business processes, in particular in the field of security, high-level management and compliance with legal requirements; risk and financial effect assessments. Through this study, we investigated the methods to optimize the tax function through business; Managing tax risk used to be a straightforward matter of getting the numbers right. Now, the stakes are much higher. The precision of today's targeted enforcement and the sheer volume of issues and authorities involved have amplified the pressure on tax functions to have the right resources to keep up with requests and the right technology to supply the answers. Having ineffective tax processes and controls can have profound consequences for businesses in terms of financial penalties or reputational damage from noncompliance. Businesses are taking steps to adapt their tax functions to a global tax environment that demands greater transparency, real-time compliance, and accountability. Indeed, in the EY 2017 Tax Risk and Controversy Survey of 901 tax and finance executives in 69 jurisdictions, the effectiveness and efficiency of global tax compliance and reporting (GCR) ranked, on a weighted basis, as their top area of operations and controls focus in the next two years. This was in sharp contrast with prior surveys. However, the survey results also reveal that many businesses aren't taking full advantage of the tools, technology, and personnel that will enable their tax functions to run more efficiently and become a strategic business partner and value creator. While compliance has emerged as a top priority for businesses, in many cases the tax function has to contend with scattered and/or insufficient resources. A lack of access to modern technology and tax software is a major roadblock. Because tax functions have traditionally operated independently from the rest of the business, the tax has often been at the bottom of the priority list for information technology (IT) investment. This underinvestment in technology means that many businesses are lagging behind tax

administrations in the use of digital technology and data analytics. An increasing number of tax authorities are building sophisticated data-gathering platforms that enable matching and sharing of taxpayer data. They are then using data analytics to mine this data to help increase tax collections, target compliance initiatives and improve overall efficiency. The move toward tax digitalization is allowing tax authorities to collect tax data in real-time or near real-time and is, in some cases, allowing taxpayer information to be cross-referenced and shared among governments and agencies. The previous three reports in our 2017 Tax Risk and Controversy Survey Series used light as a metaphor to analyze the tax risk facing multinational businesses. The first report, Tax steps into the light, presented an overview of the survey findings. The second report, Out of the dark, explored how businesses are responding to the BEPS initiative. The third report, Dimming the glare, identified emerging trends in tax controversy management. This fourth report examines in more depth how businesses are meeting the challenges of managing risk in a rapidly evolving and digitalized tax environment. It aims to illustrate how enterprises can "find their glow" by using digital tools and, in appropriate cases, outsourcing some or all of their tax functions

8. CONCLUSION

The main goal of the tax system business process optimization with modern digital technology use is to create an automated information architecture in the tax service, due to which it is possible to achieve such a level of control over the tax system operation that will allow solving the posed tasks comprehensively: performance of payments on time, the automation of individuals and legal entity accounting process, accounting for taxes and payments, making optimal decisions on tax revenue prediction.

The recommendations proposed in the article on business process improvement during interaction with weakly profitable and non-profitable enterprises, in the process of an electronic document management system organization, financial statement receiving, analyzing and processing will contribute to the creation of an effective system-analytical mechanism, which will allow to perform daily tasks of operational work on taxation at a qualitatively new level of information servicing; carry out the systematic analysis concerning the status and prospects of tax service activity as a whole and make informed and justified decisions in order to implement tax policy.

9. DATA AVAILABILITY AND MATERIAL

Data involved in this study can be requested to the corresponding author.

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