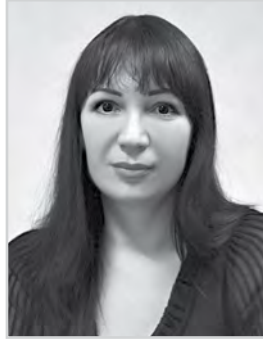


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Role of chief information officer within the system of human resource development in service organizations (tourism)

Abstract

The functioning of manufacturing and service industries, for example tourism, is oriented towards results, which are products and services. With regard to this, we determine the requirements for human resource development. At the same time, the appropriate system of management of human resource development is determined on the basis of economic methodology which describes human resource development as a cyclical process. The need to align information technologies in line with business needs increases the role of the chief information officer and, along with it, draws attention to the need for the development of a new set of skills. In addition to technological know-how, a successful leader in the field of information technologies needs to manage effectively, have good communication skills and, preferably, have a business qualification. Since chief information officers are still responsible for monitoring information technologies and systems and management services, it can be argued that an ability to foresee how the commercial use of the Internet will affect organisations and employees is an important feature in the age of the Internet. This task requires a vision of the possibility of re-engineering of business processes to take advantage of the new platform and leadership skills to convince others that the change is necessary. Human resource development is essential for the full and effective functioning of information and communication technologies system in tourism.

Keywords: Chief Information Officer; Human Resource Development; Tourism

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Роль директора з інформаційних технологій у системі розвитку людських ресурсів в організаціях сфери обслуговування (туризм)

Анотація. Функціонування виробництва та сфери послуг, наприклад, сфери туризму, орієнтовано на результат – товари та послуги. Відповідно до цього визначаються й вимоги до розвитку людських ресурсів. Базис формування системи управління розвитком людських ресурсів визначається економічною методологією. Нормативна методологія визначає розвиток людських ресурсів як циклічний процес. Необхідність узгодження інформаційних технологій з потребами бізнесу підвищує значимість ролі директора з інформаційних технологій і разом з цим визначає необхідність формування нового комплексу навичок. На додаток до технологічних ноу-хау успішний лідер в області інформаційних технологій має ефективно управляти, мати гарні комунікативні навички та відповідну бізнес-кваліфікацію. Оскільки директор з інформаційних технологій несе відповідальність за моніторинг систем інформаційних технологій та управлінських послуг, можна стверджувати, що важливим завданням в епоху Інтернету є прогнозування впливу комерційного використання Інтернету на організації та співробітників. Відповідно, необхідним є пошук можливостей реінжинірингу бізнес-процесів на основі використання переваг нової платформи та лідерських навичок з урахуванням змін, що відбуваються. Особливу важливість для максимально ефективного функціонування системи інформаційно-комунікаційних технологій людські ресурси мають в сфері туризму.

Ключові слова: директор з інформаційних технологій; розвиток людських ресурсів; туризм.

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Роль директора по информационным технологиям в системе развития человеческих ресурсов в организациях сферы обслуживания (туризм)

Аннотация. Функционирование производственной сферы и сферы услуг, например сферы туризма, ориентировано на результат – товары и услуги. В соответствии с этим определяются и требования к развитию человеческих ресурсов. Базис формирования системы управления развитием человеческих ресурсов определяется экономической методологией. Нормативная методология определяет развитие человеческих ресурсов как циклический процесс. Необходимость согласования информационных технологий с потребностями бизнеса повышает значимость роли директора по информационным технологиям и вместе с тем определяет необходимость формирования нового набора навыков. В дополнение к технологическим ноу-хау успешный лидер в области информационных технологий должен эффективно управлять, иметь хорошие коммуникативные навыки и соответствующую бизнес-квалификацию. Поскольку директор по информационным технологиям несёт ответственность за мониторинг систем информационных технологий и управленческих услуг, можно утверждать, что важной задачей в эпоху Интернета является прогнозирование влияния коммерческого использования Интернета на организации и сотрудников. Следовательно, необходимым является поиск возможности реинжиниринга бизнес-процессов на основе использования преимуществ новой платформы и лидерских навыков с учетом возникающих изменений. Особую важность для максимально эффективного функционирования системы информационно-коммуникационных технологий человеческие ресурсы имеют в сфере туризма.

Ключевые слова: директор по информационным технологиям; развитие человеческих ресурсов; туризм.

1. Introduction

The deepening of European integration processes in combination with an open economy is accompanied by increasing competition in the domestic and foreign markets. The transformation of a post-industrial economy leads to the growth of the service sector. Under such conditions, responsibility of personnel is the most important and vulnerable thing. To provide adaptation of personnel to rapid and unpredictable changes in the business environment in the context of European integration processes, personnel should be considered with regard to the improvement of its structure in the form of internal personnel mobility and the formation of a higher educational level corresponding to the requirements relevant to European integration.

2. Demands to personnel in different types of organisations

According to Hannah Arendt, an American philosopher, human activities can be classified into three areas depending on the area of focus and direction of human effort:

1. Labour that corresponds to the biological process of the human body, in its spontaneous growth, metabolism, and decay fed by natural things, extended and prepared hard to present them as a vital living organism, and the main condition, which is subject to labour - this is life.
2. Work that produces an artificial world of things, not just adjacent to natural things, but distinct from that somewhat oppose nature, not just milled processes of life; basic condition, which is subject to creating activity, it belongs to the world, namely the dependence of human existence on items and objects.
3. Action which is the only activity that takes place without the mediation of matter and material things right between people, its main condition - a fact of plurality, namely the fact that not one single person, but many people live on earth and inhabit the world. The act requires [human] plurality when all though are the same, namely are men, but in the kind of way and a way that none of these people will never equal the other who has ever lived, lives or will live [6].

Thus, labour preserves the life of the individual and the kind of life extension; work produces artificial world; finally, actions establish and maintain political order, preparing conditions for the continuity of generations, memory and history [6].

Labour within a household is process-oriented because of its cyclical nature and almost simultaneous consumption of the results of work. Work in manufacturing and services

(for example, tourism) is oriented towards results, which are products and services. Actions between people stem from attempts to personal fulfilment and are deployed within institutions. Consequently, we can establish requirements for human resource development.

3. Analysis of Human Resource Management (HRM) concepts

Effective human resource management is a key factor in ensuring competitiveness. The principles of personnel management, as the basic ideas of management activities, undergo changes over time. In the second half of the twentieth century, there were many HRM schools, which complicates an unambiguous classification of these principles, so we can talk about paradigmatic shifts in the direction of the dominant conceptual schemes of management thinking (Bazarov, 2002). We consider HRM concepts to be the fundamental principles underlying the organisation of personnel management. Building dynamic concepts of human resource management within economic theory alone is impossible due to the open nature of the system of personnel management (I. Gontareva, 2015). You can identify patterns of dynamics of HRM concepts based on the analysis of the cultural impact on the organisation of personnel management. To do this we will represent culture in the form of paradigms, i.e. some basic concepts of culture, which change over time. Researchers pay attention to the influence of cultural environment on human resources management in certain periods (usually in the second half of the twentieth century) in order to determine static dependence. In this regard, the cultural impact on the dominant paradigms of management remains insufficiently investigated.

The cultural approach makes it possible to explain the dynamics of economic processes, including changes in management models. In this article, we explore the cultural impact in terms of the dominant HRM paradigms to determine its dynamics features and perspective management concepts. We propose a hypothesis about the dependence between the dominant HRM concepts and the dominant cultural paradigms. In order to test this hypothesis, we will study a paradigm shift relevant to the culture of the 20th and the 21st centuries. Positivism characteristic of the 19th century realism sought to describe the current reality, and modernism that followed it was aimed at modeling its own reality with the text as a fundamental concept, which gathering quotations, allusions and reminiscences turned into the intertext and then in the hypertext in the age of postmodernism. According to N. B. Mankovskaya (Mankovskaya, 2000),

postmodernism in art was born in the US in the late 1950s. The postmodern mindset is noted by an eclectic mixture of languages, and its origin became possible «due to the development of new technical means of mass communication such as television, video, computer science, computer engineering» [24].

The next cultural trend, which is metamodernism formed in the late 21st century «as opposed to modernism and post-modernism, puts forward some new non-classical canons...; it wants to create a brand new ... environment (virtual reality) and a way to interact with it (interactivity). The new aesthetic pattern of a virtual world is determined by the absence of chaos and perfect order that changed the postmodernist game of chaos» [24]. According to O. D. Yatsenko, the dominant ideology of metamodernism which replaces post-modernism is discursive ethics. K.-O. Apel states that Communication community underlies all human thoughts and actions; all thinking processes are based on the individual's communication links with the community due to which alone the process of understanding becomes possible and which the community emerged; this very process necessitates all the basic rules and laws of human life [2; 4; 5]. N. Luhmann believes that the social system and all forms of communication processes in society, including economic and management are related to communication (Luhmann, 1996) [22].

In order to establish the impact of dominant cultural paradigms on the concept of management, let us consider the stages of the development of human resource management theory at the beginning of the 21st century. Based on the works by M. Poole and M. Mescon [37; 25], let us determine the following historical stages of the development of HRM theory (Table 1):

I. Personnel Management

The scientific basis of this concept, which developed in the first part of 20th century, became the bureaucratic organisation theory, according to which the human was seen through a formal role, i.e. the position, while management was carried out through administrative procedures (principles, methods, powers and functions). Scientific research in the field of management focused on increased efficiency of work of individual artists through management, which took into account the needs of those artists along with the motivation of the latter by focusing on the employee as a subject of labour relations. In the context of this approach, management was of functional nature, with the management structure as its basis.

II. Human Resource Management

This concept begins its development in the 1950s and was relevant until the 1990s. In 1958, E. V. Bakke from Yale Labor and Management Center declared that people in the

organisation are same resources as money or materials [8]. However, he did not dehumanize the role of personnel, but instead emphasized the importance of human factor. Later in 1964, W. French coined the term «human resource management» as a subtitle to the article on HRM [14]. The emergence of the «human resources» category was characterised by a change in the approaches to HR activities on the basis of perceptions of man as one of the main factors that determine the effectiveness of the organisation. The introduction of the category mentioned above made it possible to show that, in fact, professional knowledge, experience, creativity, business and other special abilities of employees provide economic efficiency and competitive advantage in the market environment. The consideration of personnel as a key strategic resource stimulated closer attention to both general education and vocational training in educational institutions and enterprises. Management becomes a continuous series of interrelated management functions that takes process character are speculative models: Contemporary models (the environment, the organisation and the structure of management) become the foundations of management.

III. Pluralism of HR approaches

Since the 1980s, HR approaches have been characterised by plurality as a result of dynamic changes in the business environment caused by globalisation and the volatility of global markets, especially financial markets. The environment becomes variable and unpredictable. It is impossible to perform long-term planning with regard to the management model, which is why the strict hierarchical governance structure is replaced by a flexible network structure as a set of relatively stable contracts between individuals and groups that adapts to the current conditions and existing work tasks as projects. R. Miles and Ch. Snow are recognised to be the founders of this approach [26]. The perception of the employee as an independent active unit within the enterprise, interaction with which acquires the features of the internal labour market, as opposed to the conventional external labour market, is common to these approaches to HR management.

The given table shows that dominant cultural paradigms and concepts of human resource management can be established as dominant methods of personnel management formed within certain cultural paradigms during the period between the 1940s or 1950s and the first 20 years of the 21st century. In our opinion, this period and its decrease is explained by, the inertia in transfers and dissemination of knowledge in education and science, and by the period of career development in terms of new ideas in the management structure.

Tab. 1: Comparative table of dominant cultural paradigms and concepts of HR management in the 20th and 21st centuries

Cultural paradigms				
Period, years	Phenomena (mainstream)	Dominating outlook	Fundamental category	Attitude to reality
Before 1900s	Realism	Positivism	Reality	Reality description
1900-1950s	Modernism	Rejection of common features and values	Text	Modelling of personal reality
1950s-1990s	Postmodernism	Eclectics	Hypertext	Perception of the world as chaos, «polyreality»
Since 1990s	Metamodernism	Discursive ethics	Hyperreality	Communications in virtual reality
HRM concepts				
Period, years	Management basis	Management paradigm	Attitude to employees	Management concept
1910s-1950s	Organisational structure	Functional	Subject of the labour relations	Personnel management
1950s-1980s	Speculative models	Process	Key strategic management resource	HR management
1980s-2010s	Adaptation to unpredictable changing environment	Project	Independent active agent	Approaches pluralism
Since 2010s	Communication	Virtual management	Partner	Trust relationships

Source: Compiled by the authors

4. Perspective concepts of HR management

We believe that communication will be the basis of the attitude to reality in the current cultural paradigm which has been forming the management concept since 2010s. According to J. Vattimo, «modern society is, in fact, communication society and society of social sciences ... where the technology reaches its climax in the form of «information»... which is perceived by the humanities and simultaneously constructed as their adequate, the true object» [41]. Virtual control is becoming a major paradigm of management. Technical means, including high-speed wireless Internet, glasses of augmented or virtual reality, cloud technology to work with programs and data, communication in virtual worlds and the development of the «Internet of things», which connects both computers and home appliances, make the basis for this new management paradigm.

Based on the established paradigm of the dominant cultural influence on the current principles of personnel management with a time delay, the next step in the development of the HRM theory (since 2010s) may be the concept of trust relationships, under which an employee is a partner in relation to the organisation. Thus, communication infrastructure, as well as the exchange of data, information and knowledge between the external environment, the organisation and the employee, is becoming the basis of management. The assessment of communication as the next basis for management can be done based on the analysis of modern approaches to the study of the phenomenon of communication.

U. Habermas and N. Luhmann presented two approaches, which can be viewed as part of the modern paradigm of communication. The first one is based on the European tradition that considers the role and importance of a subject in social processes and depends strongly on the distinction between subject and object [19]. According to U. Habermas, communication is the universal form of sociality that changes in the historical context, contains normative and empirical aspects, as an ideal model of communication implicitly embedded in language, communication rules which have a priori nature thus the transmission of knowledge is possible in society, cultural continuity in general [20].

According to the concept suggested by U. Habermas, symbolic interaction mediums, such as money and power, along with the natural language, play a key role in the concept. They mediate social practices related to sub-strategic activities and ensure the reproduction of society as a system [15].

In his concept, which can be called a system theory of society, N. Luhmann has moved from a vision of society which consists of individuals to society as a system which consists only of system operations, i.e. to the procedural interpretation of the system theory. In this regard, communication is replication of the social system itself: society produces communication, and that what produces communication is society. Community constitutes the basic units (communications), in which it exists, and whatever it constitutes will be society itself, the instance of constitution [21]. Communication itself is the triunity of information, communication and understanding with a distinction between information and communication. According to N. Luhmann, communication is the foundation of society, the cause and the beginning of its formation; social systems are formed only through communication [21].

Based on K.-O. Apel's ideas, communication is conditioned by the presence of a priori rules of communication, while objective science free of values implies the importance of inter-subjective moral standards [2]. Which is more, he states that all sciences and technologies include ethics as a condition of their own possibilities [2]. To build an effective communication system, it is required to work out some common rules of interaction and mechanisms to monitor the implementation of these rules, i.e. institutions that are the basic units of analysis of the institutional economic theory. In his book «Critique of Economic Reason», P. Ulrich, a German economist and ethicist, (Ulrich, 1993) suggests the principle

of priority to communication and strategic rationality of the system, which is based on the paradigm of neoclassical economics and the new paradigm P. Ulrich sees in «dialogic ethics socially responsible ethical governance», based on the fact that economic activity is integrated into the context of the living world and cannot be separated from the totality of social relations.

5. The essence of personnel in terms of a systemic approach

Let us consider the nature of personnel. According to J. Schumpeter, «to be able to formulate any problem, we first need to have the image of a coherent set of phenomena as an object worthy of attention our analytical efforts» [36]. Thus, the theoretical study is designed to discover new facts and laws, ontological analysis - to reveal the hidden premise underlying the relevant theories, play their real context and meaning [1]. That is, to solve this problem, it is necessary to use the overall picture or the ontology of economic reality. The ontology fixes «the types of economic reality, which operate on the relevant theoretical structure (they can be the organisations or events that occur, unobservable objects or entities) and the types of properties of these elements, connections and relationships between them» [1].

Personnel development embodies certain expectations about its future state, which, according to N. Luhmann, form a structure, the structure of personnel in our case [21]. Thus, HR development can be defined as a process of directed change of its structure. The direction and course of HR development are determined by internal and external factors. The sum of the latter is «social and institutional context» [32]. According to D. North, the assertion that the economy is a theory of choice, but the economy «refuses to study the context in which you make a choice» is considered to be undisputed [32]. Let us consider the external conditions of human resource management along with human resource development as its essential part.

6. Demands for HR development

Obviously, the purpose of training is to acquire knowledge and skills needed for the workplace. If in the past legitimisation of knowledge was carried out by using conventional scientific paradigms, from the last third of the twentieth century distrust in such fundamental concepts led to the legitimisation of knowledge through its operationalisation, pragmatism and technologisation. Knowledge becomes effective in modern society. The aim of training is to increase production efficiency because a growing amount of knowledge in the modern economy is produced, exchanged and consumed in the form of commodities. Economic actors seek to increase the efficiency of knowledge, because the final decision on the content, scope and forms of education is adopted to provide maximum efficiency while training. Social consequences should also be taken into account. This will create benefits for both the enterprise and the employee.

Education can be defined as interaction between students and teachers for the purpose of acquisition of specific knowledge and skills. For the past few years, we have been witnessing a change in the paradigm of education [30].

Business training provided by the system of measures aimed at improving knowledge of personnel in the interests of workers, businesses and society. Our goal is to bring training knowledge, skills and abilities of personnel in accordance with the complexity of tasks before workers. Nevertheless, in determining the requirements for the scope and content of training, the demands should not be limited by the production and management system of the enterprise [28]. Education is the assimilation of the experience gained in the past to form the skills and knowledge of man and the world economy in order to reduce the uncertainty of the future. Therefore, the system must take into account training, including socio-cultural characteristics of employees, their mentality and the corporate culture that has developed in the company. In addition, the shape of the personnel should take into account the human physiological characteristics for effective acquisition of knowledge

and formation of appropriate skills. The nature and extent of training is chosen based on the development strategy, depending on the employees' duties and their relationship with other employees. It is also important for the interaction of working people with the real material world and the information society [29].

7. Methodology of HR development

According to the viewpoint of supporters of critical realism, epistemological knowledge consists of real, actual and empirical. What is real exists on its own, regardless of the subject and the availability of real objects for observation; what is empirical is the reality as it is presented in the experience and observation; the actual belongs to the intermediate level, which corresponds to reality as orderly sequence of events or conditions [18]. The function of science to develop scientific knowledge of the natural environment and human society. The formation of scientific knowledge, in our opinion, is a cyclic process that includes the following steps [16]. Scientific ideas within a particular cultural paradigm are put forward by researchers under the influence of data obtained from research and observation of the surrounding world. These ideas are introduced to the scientists to the social environment where other scientists subject these ideas to criticism by appealing to an objective picture of the world. To resolve disputes, new experiments are conducted, in which the notion that formed in society, compared with the world and the result of these actions experimenters are in the form of new responses (Figure 1).

Let us formulate the basis of the HR development methodology (Buzko, 2012; 2016) based on the methodology above. The information on the structure of personnel and the relevant changing can be both included into knowledge related to HR development. This is considered to be normative research methodology which can be used as a basis for developing a standardised methodology for making decisions about changing in the structure of the company's personnel. In this case, we understand managers who make decisions about HR development to be researchers; the ontological layer of society is singled out with regard to the company, and the world is limited by the company's environment. Proposals relevant to HR development are considered to be ideas; they are discussed, criticised and modified while deciding on HR development (Figure 2).

8. Building a framework for prospective HR development methods

Today, we can observe the expansion and deepening of human impact on the world, including society. According to B. Latour, society is not a predetermined concept; its essence is determined according to a specific time and spatial context and while its social character is determined by a type of social connection between things which are not social [17]. Today's changes create a new cultural paradigm of the globalised future, which has no generally accepted name yet. A distinctive feature of this paradigm is the mainstreaming of virtual worlds, which facilitates the creation of new creation opportunities with the help of information and communication technologies and transfer of human, social, intellectual and even physical activity to a virtual space [13]. The world, which is viewed in terms of the possible, necessary and actual, in the conditions of a growing impact of virtual reality and the establishment of arbitrary laws of the latter, tends to be analysed in terms of processes and management incentives. The development of information and communication technologies has led to widespread use of social networks, learning through TV, videoconferencing which delocalises and even globalises social activities. Therefore, methods of HR development as a series of localised in time and space steps «idea → action → result → analysis → ...» turn into the delocalised interaction of «context / model / system / change».

Creating artificial worlds is not the exclusive prerogative of the day. Building artificial, virtual reality up to the beginning of the 21st century was more like an art, consequently it was not used in the organisation and management of production. The use of virtual reality became easier with the development

of the access to the tools of its formation. Their use allows one to create an environment for effective support of HR development.

9. Role and place of Chief Information Officer in management and HR development

Since the 1980s, the role of chief information officer has radically changed its nature and position. The main responsibility of those early information managers was to provide new IT systems on time and within the budget and to manage existing systems with highly reliability [35]. According to J. Ross and D. Feeny, those IT managers rarely participated in determining IT strategies of companies (not to mention business strategies), preferring to let the dominant provider (usually IBM) to determine direction [35]. It is becoming increasingly important for any business to store, process, exchange and analyse electronic information, and the chief information officer (CIO) becomes a central figure to formulate strategic goals [31]. In many companies, chief information officers report directly to the CEO (Chief Executive Officer), and some companies are part of the CIO Executive Council. To educate executives and employees in terms of business value and risks of the IT systems at the enterprise is one of the most important functions of the CIO. An increasingly rapid pace of change in technology, combined with widespread consumer acceptance of digital technologies, such as social media, mobile devices and cloud computing, forced CIOs and their companies to rethink the role which information technologies play in almost every aspect of business, from operational efficiency and employee productivity to customer service for business purposes and even business survival.

As a result of their increased strategic responsibilities, CIOs in large organisations typically delegate control over day-to-day IT operations to their operational deputies and rely on a team of specialists to manage specific IT areas. Analysis in the field allows concluding that nearly one half of different state institutions have taken targeted action to provide electronic services for citizens and businesses. There is a clear trend towards increasing the share of companies that have defined roles, rights and duties of its officers responsible

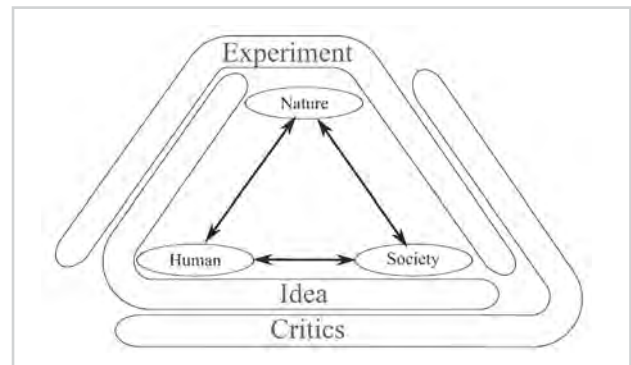


Fig. 1: Scheme of science knowledge formation
Source: Generalised by the authors

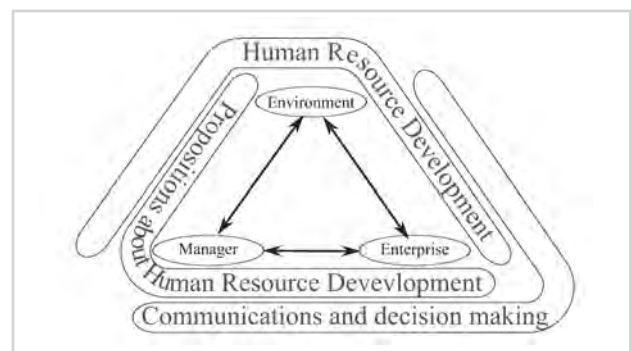


Fig. 2: Scheme of normative HR development methodology
Source: Generalised by the authors

for implementation of specific measures related to the development of e-governance in the context of the concept of e-government. The number of administrations which declare that they have qualified personnel necessary for implementation of e-governance projects is increasing.

At the same time, practice shows that there is still a significant proportion of employees engaged in the implementation of e-governance services, dealing with technical support of hardware and software infrastructure and not participation in projects for electronic services. Building e-government requires a change in the way of work and communication of the employees with the citizens and the business [33].

A proper understanding of the concept of e-governance is a prerequisite for this. According to the report for 2006 by the Ministry of State Administration and Administrative Reform of Bulgaria, most of the administration employees perceive e-government only providing information on existing administrative activities electronically accept it as something separate from the daily operations of the state administration, as a task of ICT experts only [27]. This indicates that measures are needed to clarify the nature of e-governance as an integrated process, which includes introduction of the administrative reform, optimisation of all administrative processes and full implementation of the ICT potential [27].

Leading specialists in the field of IT in public administration occupy relatively low positions. When senior civil servants often misunderstand the concepts and principles of e-governance, implementation of new technologies, which contributes to better service delivery, requires good computer skills of all employees in the administration [34]. ICT administrations have their own departments responsible for ICT in the structure, and each has only one employee who is responsible for the precise function. Also, it should be noted that administrations do not have their own budget for investment in the development of ICT. This can be explained by organizational specificity - they have no authority to do so, however they can declare a need to be secured and provided by the central administration [34]. The size of the units and the number of ICT specialists has directly proportional investment in the budgeting of the development of ICT - larger structures bet even a minimal amount of money, while smaller do not provide for such an item. Local institutions do not use the available resources to purchase hardware or software licenses - they mainly allocate them for current needs and support [34].

The number of employees engaged in the IT sphere (computer support, local networks, software, etc.) is, however, only 2%, which, in the opinion of researchers, is insufficient quality of services offered locally. Perhaps the heads of administrations rely on the fact that the people in them are highly skilled and technologically literate, which creates fewer problems in the process. Perhaps, this is the reason why there is no ICT training program for employees in any of the municipalities [34]. Special attention should be paid to the establishment of the leading status of the Director of IT - the CIO in the business structure. The establishment of a coordinating figure, such as the CIO or any equivalent position at the national level, is one of the measures recommended to be taken. Since 2008, studies of e-government by the UN have estimated the organizational commitment of every government in order to determine whether they have introduced the CIO or a similar official responsible for overseeing the e-government strategy. The number of countries where there is such a position is constantly increasing. The study by the

United Nations as of 2016 (the United Nations e-government survey 2012: E-Government in Support of Sustainable Development (2016)) shows that in 111 countries - 58% of the UN Member States - there is a CIO or equivalent official in electronic government. This is an increase compared with 82 countries in 2014 and 60 countries in 2012. Africa and Oceania are lagging behind other regions of the world [34].

In developed countries, the CIO or its equivalent is usually responsible for policy guidance, support and monitoring of open government initiatives, coordination of ICT projects within the government to ensure that they are consistent with the overall strategy and monitoring and reporting costs. In developing countries, the role is often described under the same conditions but with the addition of extra competence and includes activities to improve and expand the ICT infrastructure and international cooperation with donors and NGOs on initiatives related to e-government [34]. The CIO position can be located at any level within the national administration. Given that the focus is on ICT functions, the responsibility for coordination of e-government at the national level is assigned more often to the technological department. Only about 10% of countries have the CIO or an equivalent formal managerial position in the Office of the Finance Ministry or the Department of Public Administration. Countries with the highest income, such as the United States, the Republic of Korea, the Netherlands, Canada and France are among them.

10. Conclusions

Based on the impact of the established cultural paradigms on the current principles of personnel management, it has been concluded that the next stage of the development of HR management theory can be a concept of a trust relationship under which an employee is a partner of the organization. Information and communication infrastructure as well as the exchange of data, information and knowledge between the environment and employees thus becomes the basis of management.

The use of historical approach in the form of dominant cultural paradigms relevant to the analysis of the periodisation over the past decades related to the existing HR management concepts shows virtual management as a perspective paradigm of HR management which is based on the virtualisation of the personnel structure and virtualisation of the educational system for the personnel. A principled approach to the internal mobility of personnel based on divided job position enables us to use human resources more fully and provide the internal mobility according the European integration arrangements.

Modern concepts for the implementation and delivery of e-services require the establishment of management systems based on an integrated approach. Currently, such tools are missing. The drafting of reference models for standardised development and the implementation of systems for monitoring and management of data and content are key factors for the deployment and provision of e-services.

Leading specialists in the field of IT in public administration occupy relatively low positions. There are cases of misunderstanding of the concepts and principles of e-governance from the part of senior civil servants. The application of new technologies, which contributes to good administrative service, requires good computer skills of all employees in the administration.

An important aspect of this approach is to extend e-government towards transforming the role of government to cohesive, coordinated and integrated processes and institutions through which such sustainable development takes place.

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