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Content

INTRODUCTORY WORD OF THE EDITOR IN CHIEF

Angelė Lileikienė, Prof., dr.
Lithuania Business University of Apllied Sciences Klaipéda, Lithuania

Dear Colleagues,

The journal „European Science" is dedicated to the publication of new scientific ideas, focused on presenting the results of theoretical-methodological and applied research not only in a European context but also in a broader context. The consistency of the journal, published 4 times a year, allows researchers to present their research results in a dynamic way, as well as to compare scientific conceptualization in the context of research conducted by researchers from other countries.

„European Science" is a wide-ranging research journal because it covers a broad range of scientific disciplines. Research interests: management, history, law, medicine, political science, economics, pedagogy, cybernetics, public administration, etc.

I invite researchers from EU universities and other scientific institutions to actively publish scientific articles in the journal „European Science".

INTRODUCTORY WORD OF A MEMBER OF THE EDITORIAL COUNCIL

Larysa Yankovska
Doctor Hub. in Economics,
professor, Honor. prof.,
Honored Worker of Ukraine Education
Member of the ASU, Member of the IAAC
Chancellor of Lviv University of Business and Law Lvyv, Ukraine

Dear reader!

We would like to bring to your attention the scientific journal EUROPEAN SCIENCE containing the findings on topical scientific directions and interdisciplinary research.

The main target of our journal is to create an effective background for discussing urgent scientific ideas, achievements, debating points of theory and practice. The magazine has significantly developed and the geographical representation of authors and readership has expanded throughout its existence. The scientific journal EUROPEAN SCIENCE is currently one of the few scientific periodicals of multidisciplinary nature included into numerous scientometrical bases, and it is characterized by high quality of publications provided by double blind peer review and fulfills an important function of uniting the efforts of scientists from different countries to solve actual problems of modern science and practice.

This issue consists of articles written on topical scientific subjects and focused on solving important scientific and practical problems of various fields.

The materials presented in the publication are useful for scientists and practitioners, students, post-graduate students and doctoral students, public employees, entrepreneurs, statesmen.

We hope that the articles released in the given issue will provoke your interest, expand the range of research interests and image into your scientific and professional activities.

Best regards.

INTRODUCTORY WORD OF THE EDITION FOUNDER

EURÓPSKY INŠTITÚT DALŠIEHO VZDELÁVANIA
EUROPEAN INSTITUTE OF FURTHER EDUCATION

Jozef Zaťko
Dr.h.c. mult., JUDr., PhD., LL.M, MBA,
Honor. Prof. Mult.
President EIDV, Podhajska, Slovak Republic

Dear Colleagues!

European Science journal is a peer-reviewed international scientific publication established by the European Institute of Further Education (Slovak Republic). The European Science Editorial Board increased its membership with respected and distinguished scientists from Ukraine, Poland, the USA, Lithuania and Malaysia in 2019.

This year has brought us many challenges, but we continue to work productively and adapt to the new normal, both in our daily lives and professional activities of the EIDV. The Editorial Board of the European Science journal selects manuscripts for publication, and the Reviewing Editors work on specific recommendations for quality improvement of the scientific papers selected for publication upon peer reviews and subsequent amendments by authors. With this we ensure the scientific rigor of our publications.

As scientific knowledge increases and the boundaries of science moved forward with increasingly ambitious and complex goals; the development of big science projects need the involvement of hundreds if not thousands of scientists from different countries and institutions. To facilitate future scientific works, the construction of large scientific facilities is becoming more and more essential for the achievement of the scientific goals, bringing minds together, discovering and disseminating knowledge, as well as improving society's well-being.

However, no project would be feasible and sustainable without the understanding and support of the international public opinion, fully aware of the importance of its purpose both from a scientific point of view and from that of the technological, economic and social implications. Close collaboration between scientists and science communicators is therefore more relevant than ever to ensure that information on those issues are accurately and thoroughly presented to the scientific community and to the public.

We are delighted to remind our readers and our scientific community that the European Science journal accepts the articles of scientific importance that contribute to resolving topical challenges and contributes to knowledge generation and dissemination, which would continue to progress knowledge and feed our community, society and nations with critical thinking and unbiased information. To this we ensure utmost transparency and integrity in accepting and processing manuscripts submitted for publication with the European Science.

We uphold the principles of scientific integrity in research practices, results achievement and maintenance of balance between the interests of the authors, readers, editorial board, reviewing editors and institutions where the research was conducted. We hope and believe you will continue to enjoy reading and benefitting from this journal, and we take this opportunity to encourage you to reach out to us for opportunities to publish your own thought-provoking ideas in future issues. We are glad to work together with you to bring your thoughts and ideas to benefit our community of readers.

We sincerely extend our respect and gratitude to you for your continuous support and cooperation.

Best regards,

EDITORIAL COUNCIL MEMBER OF THE EUROPEAN SCIENCE JOURNAL

Maria Telovata,
DrSc., Professor,
Honored Education Worker of Ukraine,
Certified expert of the National Agency
for Higher Education Quality Assurance, Head
of the Accounting and Taxation Department
of the National Academy of Statistics, Accounting and Audit

I extend my sincere congratulations to EIDV President Josef Zat'ko, whose dedicated work ensures high standards of the journal, as well as to the editorial board of the international scientific publication and to authors publishing their findings in European Science.

A feature of the European Science scientific publication was that it was founded by European Institute of Further Education (Slovak Republic). A combination of specifics of higher educational institutions in Slovakia, Ukraine, Poland, the Czech Republic, Serbia and Baltic States allows to improve the quality of selection and review in materials of scientific publications. It is the experienced specialists in the fields of law, economics, management, administration, pedagogy, psychology and philosophy of these universities has constituted the basis of the editorial board of the international scientific publication.

The demand for the international publication in academia, authority among the educational intellectual society, experts and practitioners, doctoral students, graduate students and students, everyone who wishes to be a part of the scientific likeminded unity, suggests that the journal has found its reader. The most essential, acute and urgent challenges of our time are constantly revealed on its pages.

The popularity of the journal is mainly because of the work of the editorial board making every effort to form the journal interesting and useful. I believe that the role of the scientific publication is quite significant, because it is published in English and registered in 20 scientometric databases, which gives an opportunity to integrate into the world, European scientific space, and to exchange professional experience, opinions and views for our scientists.

At the same time, the journal strives to promote the development of fundamental and theoretical, scientific and practical researches, ideas for achieving topical targets and its introduction into practice. The editorial board of the European Science scientific publication does its utmost to develop concepts, implement information technology involving young people in science and to prepare the national leadership elite for our countries.

Therefore, I wish you all health, well-being, happiness, prosperity and optimism. May success and encouragement always come your way inspiring to new professional achievements!

ASSOCIATE AND MANAGING EDITOR

Robert Jeyakumar Nathan, Dr., PhD., M.Phil.
Faculty of Business
Multimedia University, Melaka, Malaysia

Biography

Dr Robert Jeyakumar Nathan received his Bachelors in Business Administration (Honours) in Marketing with Multimedia; and Masters of Philosophy (Management) from Multimedia University, Malaysia. He conducted his postgraduate research attachment on leadership with Swinburne University of Technology, Melbourne (Hawthorn Campus) under the Asia Pacific Leadership Project (APEL Australian Government Grant) in Australia. He obtained his PhD (International Marketing) from Universiti Malaysia Sabah, Borneo Malaysia. Robert is a certified trainer with Pembangunan Sumber Manusia Berhad (PSMB) under the Malaysian Ministry of Human Resources. He also holds certified Stanford University Train the Trainer (TTT) for Design Thinking, and has obtained Distinction in IPA Foundation Certificate from the Institute of Practitioners in Advertising (IPA) UK.

Prior to joining the academia, he worked as Systems Analyst for Siemens Semiconductor AG (now Infineon Technologies AG), a semiconductor company based in Munich, Germany. Robert specializes in Manufacturing Statistics and Big Data Analytics and has conducted statistical, data mining, and enterprise knowledge and project management workshops in the Asia Pacific, Japan, Europe and North America. He received Covey's 7 Habits training and mentorship in Siemens as well as IPMA (EU International Project Management Association) Project Management experience, managing Class D, C, B and large scaled A projects in the global operation of the company. He is active in the company Occupational Safety and Health committee and employee safe work initiatives. This includes conducting trainings on Behaviour-Based Safety and Ergonomics at workplace. His training involves bringing together engineers and managers from multiple cultural backgrounds and to unify diverse work teams to perform in unity towards achieving excellence.

Robert is currently attached to Multimedia University in Malaysia as Senior Lecturer with the Faculty of Business and the Head of Department for Marketing Degree Program. He does corporate trainings for executives on Design Thinking and Innovation, Leadership, Service Marketing, Digital Entrepreneurship, Fintech and Digital Banking Solutions, Workplace Communications, Job safety analysis and Ergonomics, and Emotional Intelligence. He participates in academic research projects in Malaysia, Singapore, Europe, Australia and in the Middle East. His research interests include Marketing and Internet of Things; Electronic Commerce & Industrial Revolution 4.0; Empathetic Leadership; Usability and Ergonomics; and Occupational Safety & Health.

Active in research and mentoring, he has published over 80 refereed academic journal papers, book chapters and conference proceedings; most of which are in Web of Science

and Scopus indexed. He believes is quality and depth in academic research and publishing, and has often called on to the university to be conscience of the society, and for academics to be a lighthouse to the community. He has penned his thoughts and published two notable works with the Australian Universities' Review calling for academic integrity and honesty in teaching and research. In 2013 he published an article entitled **"Universities at the Crossroad: Industry or Society Driven?"** with the *Australian Universities' Review*, Vol. 55, issue number 2. In year 2019, he wrote **"Publications, Citations and Impact Factor: Myth and Reality."** *Australian Universities' Review*, Vol. 61, Issue number 1. Both works iterates the importance for academics not to engage in dishonest academic practices, instead focus on improving society through high quality teaching and research with integrity.

Robert serves in the Malaysian Academic Movement (MOVE) as the Assistant Secretary General, affiliated to Education International, Brussels. He promotes quality education and accessibility of education to all in line with the United Nation's Sustainable Development Goal Number 4. He is among the 50 Global Advocate for SDG#4. He also represents Education International as Panel for Education and Research with the United Nation's Agency - World Intellectual Property Organization (WIPO) in Geneva, where the Standing Committee for Copyright and Related Rights meet twice yearly. Robert has been Visiting Scholar with Szent Istvan University, Hungary in year 2019, The University of Newcastle Australia and University of Wollongong Australia in Singapore, and sits in the Academic and Exam Board of Academies Australasia College in Singapore.

WE ARE INTRODUCING A MEMBER OF EDITORIAL COUNCIL

Nadiia Shmygol,
Prof., DrSc., Honor. Prof.,
Zaporizhzhia Polytechnic National University, Ukraine

Professional experience

Accomplished expert in preparing and reviewing financial reports, in accounting and audit, possessing computer skills, proficient lecturer successfully using information technologies as an educator, able to work under stress, possessing broad skills in interacting with people directly and in business correspondence as well as having good understanding of administrative work.

Education

Zaporizhzhya State University, Physics and Mathematics Department, major in Applied Mathematics – 1990-1995.

Zaporizhzhya State University, Economics Department, major in Accounting and Audit –1992-1998.

University of Humanities „ZISMA", 2005 – Master's degree in Educational Institutions Management and Statistics, 2007 – Master's degree in English Language and Literature.

In 2005 defended a thesis and obtained a diploma of Candidate of Sciences (comparable to the academic degree of Doctor of Philosophy, Ph.D.) Economics in Economic and Mathematical Modeling. In 2013 defended a thesis and obtained a diploma of Doctor of Sciences in Economy and Management of enterprises. Certificate of professor of Accounting and Audit Department (2014)Employment

Zaporizhzhya secondary school of continuous education No.7, 1995-1999.

Position: teacher in Computer Science.

Zaporizhzhya branch of Interregional Academy of Personnel Education (MAUP), 1999-2003.

Position: senior teacher of the chair of Economics and Management, deputy director for finance.

University of Humanities „Zaporizhzhya Institute of State and Municipal Administration (ZISMA)", Zaporizhzhya, from 2003.

Position: senior teacher of the Economic Cybernetics and Statistics chair, from February 2005 – assistant professor of the chair, from November 2005 – deputy head of the chair, acting head of the chair.

2007 - assistant professor of the Department of Economic Theory of Zaporizhzhya National University, April 2009 – deputy dean of Economics Department of Zaporizhzhya National University for scientific work.

September 2009 – Doctor of Sciences candidate of the National University of Food Technologies, Kyiv

September 2012 - assistant professor of the Department of Finance of Zaporizhzhya National University October 2013 – professor, head of Accounting and Taxation Department of Zaporizhzhya National University

Besides, worked part-time in auditing firms and was the chief accountant of companies from various fields of activities.

Personal Data

Born in Pavlodar city in Kazakhstan. Graduated from Zaporizhzhya secondary school No. 15 with honors. Married, two children.

Additional Info

Certified Accounting Practitioner (CAP) Certificate from International Council of Certified Accountants and Auditors No.416, Certificate of Accounting Practitioner No. 21 from the Federation of Professional Accountants and Auditors of Ukraine, The certificate of course completion «Institute Program Manager and Facilitator Workshop « - Cisco Enterpreneur Institute (2009). The certificate acknowledges in «Teaching CSR» (2009). The DIPLOMA of the Institute of Professional Financial Managers «Incompetence in IFRS» (2013). English speaking skills (C1 Level), Russian speaking skills (C2 Level), have a document confirming belonging to the Polish nation, Polish speaking skills (B2 Level), have a driver's license.

WE ARE INTRODUCING A MEMBER OF EDITORIAL COUNCIL

Dmytro Lazarenko

Doctor of Economic Sciences, Professor, **Academician** of the Academy of Economic Sciences of Ukraine.

Education

higher, graduated from Donetsk State University, Accounting and Finance Faculty, qualification an **Economist** on a specialty «Accounting, control and analysis of economic activity». In 2013, he was awarded a Doctor of Science degree in speciality. Economy and management of enterprises (by types of economic activity).

Head of the Department of Accounting and Audit of the Slovyansk State Pedagogical University. Dean of the Faculty of Economics and Management Psychology, Donbas State Pedagogical University. In May 2017 he became a Professor of the European Institute of Postgraduate Education (Slovakia).

Scientific cooperation of the editorial board of the international scientometric publication European Science with Ukrainian colleagues from the National University of Economics and Trade, Lviv University of Business and Law, Uzhhorod National University, University of the State Fiscal Service of Ukraine, Donbas State Engineering Academy, and other educational institutions continues.

Dmitry Lazarenko became an active co-coordinator of international educational and practical events: the annual International Symposium „Ukraine-Poland- Slovakia - Synergetic Cooperation", the International Economic Forum in Slavyansk, the Science Festival (Warsaw-Poznan).

The prospect of scientific and academic specialization of higher educational establishments has led to the creation of a new profile educational institution in the region. In November 2018 a structural unit of the National University of the State Fiscal Service of Ukraine was created. Dmitry Lazarenko becomes the organizer of the creation of the Slovyansky Educational-Scientific Institute, and then its director.

Now Dmytro Lazarenko is Managing Director of Legal Clinic of Sloviansk Scientific Educational Institute. This activity was made possible through support provided by the U.S. Agency for International Development, under a grant by the USAID Financial Sector Transformation Project.

Many citizens who live in the de-occupied territory need legal assistance in financial matters. Such services can be provided by a legal clinic.

The Legal Clinic in Sloviansk operates under a grant by the USAID Financial Sector Transformation Project and with support from the Association of Legal Clinics of Ukraine.

Activities

Educating faculty members and students about consumer finance rights, providing legal consultations and representing clients in finance-related cases;

Organizing the work of a mobile office in the remote locations of the de-occupied territory of Ukraine to provide consumer finance education and consultations;

Conducting legal education events on financial issues for the public;

Publishing a practical manual (guide) - Financial Consumer Protection in the De-occupied Territory of Ukraine.

The Legal Clinic of the Sloviansk Scientific Educational Institute is founded based on the organizational model and with methodological support from the Legal Clinic of the University of the State Fiscal Service of Ukraine.

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Valentinas Navickas

Doctor of social sciences (economics), professor at Kaunas University of Technology (Lithuania), the School of Economics and Business.

Author of more than 300 scientific publications (including monographies published in Czech Republic in 2013 and Slovak Republic in 2016, 2018) and scientific articles, published in Lithuania and abroad. Author of five experimental development projects. Prepared 6 doctors of social (economics) science; now he is research adviser of 3 persons maintaining a doctor's thesis of social (economics) science.

Other experience includes diverse activities in both public and private space. Examples include, Lithuanian-Polish Cross Border Cooperation Program executor, head of Strategic planning of Molėtai city district. Also, acted as an independent expert on economics on multiple projects in various industries, such as forestry, real estate and others. Few of the projects include "Analysis of Lithuanian Forest Entities Taxation System and Suggestions for Improvement"; "Development of methodology for setting differentiated profit rate of forest enterprises"; "Methodology for calculating the economic depreciation of real estate" as well as "Analysis of the feasibility of establishing a system to measure changes in the real estate market" and "Determining the significance of factors and risks affecting real estate and business value through expert survey".

Has prepared all or part of 4 textbooks for higher education institutions (universities and other) with few of the following topics "The peculiarities of European Union markets"; "Management Control in Multinational Firms"; "Development Economics" and "Peculiarities of European Markets"

Has received multiple awards, including Acknowledgment of Lithuania's Minister of Economy for leading the best Master's thesis in the 2013 Lithuanian Master's thesis competition in the field of social sciences.

Few other positions includes Expert of the Lithuanian Research Council; Member of KTU Doctoral Committee in Economics; Expert and member of the Academic Council, Eastern European Development Agency (Slovakia); Chief Editor of International Journal of Management: Theory and Applications (US, ISSN 2281-8588); Chief Editor of Journal of Management = ISSN 1648-7974 and also member of Editorial Boards in multiple other journals, including ones in Lithuania, Slovakia, Slovenia, Turkey.

Furthermore, participant and member of multiple scientific committees in international scientific conferences in Lithuania, Slovenia, Slovakia, Turkey, Poland, Indonesia, Taiwan, Japan and elsewhere.

Other positions also include head of expansion in American football club Kaunas "Dukes" in Lithuania.

Able to communicate in 5 languages: Lithuanian, Russian, French, English and Slovak.

Fields of scientific interest: international economics, logistics, clusterization, competitiveness, economical growth, corporate social responsibility.

HOW TO BECOME A SUCCESSFUL AUTHOR OF A PAPER TO BE PUBLISHED IN A WORLD-CLASS SCHOLARLY JOURNAL?

Mirosław J. Skibniewski
Prof., Ph.D
University of Maryland, College Park, USA

An invited Guest Editorial

JUDr. Jozef Zat'ko, Publisher of Europska Veda, has asked me to prepare and convey a set of guidelines for authors who wish to be successful in preparing and submitting scholarly papers for consideration for publication in world-class, globally scoped academic journals, such as those indexed in Elsevier's **Scopus™** and ScienceDirect™ and/or in Clarivate Analytics' **Web of Science™ databases**. My guidelines provided below are intended for relatively junior authors, with limited prior experience in publishing, who are preparing their manuscripts in the realm of applied sciences. Some of the issues being raised herein are universal and as such they are equally applicable in other scholarly domains as well. I have based these guidelines on my 25+ years of experience as an editor-in-chief of a high-ranking international research journal in my own academic discipline. The journal has been included for a number of years both in Scopus™ and in the Web of Science™, earning their relatively high CiteScore™ and Impact Factor™ designations.

Academics work in an increasingly competitive environment. With many narrowly defined scientific disciplines, the race to the top has become relentless. There are currently over two thousand academic journal publishers worldwide, publishing over twenty thousand journals. The total number of refereed journal papers now exceeds 1.6 million annually and it is still growing rapidly. The largest numbers of such papers originate from the U.S.A., with China closely behind. A growing, and still largely unregulated, market for open-access publications further complicates the publishing environment. Over 90 percent of academic journal papers ever published will have been published in our professional lifetime. Ethical issues in academic publishing abound.

A successful article should contain the following major components, preferably but not necessarily presented in the stated order.

1. The title:
   The title of an article should be as short as possible, but it should reflect the main issue addressed in the paper as well as the paper content. In most cases, the title of the article is decided after the entire content of the article has been completed. The wording of the title should avoid uncommon acronyms or descriptors confining the contents of the paper only to one country or one geographic region.

2. The abstract:
   The abstract is an advertisement of your paper. It should be written in clear, short sentences which are easy to understand and should accurately reflect the contents of the paper and its main contribution to the global body of knowledge. One must avoid unnecessary

sentences that belong to the introduction section of the paper. An good abstract should contain only 6 short sentences as follows: 1) The scientific domain and the problem within the domain which is the subject matter of the paper, 2) The research question to be answered in the paper, 3) The means and methods (scientific tools) used to obtain the answer to the stated research question, 4) The answer to the research question, 5) The meaning and importance of the answer and the results obtained, 6) The future research directions based on the results of the completed research reported in this paper. The entire abstract should not exceed one-half of a printed page.

3. The keywords:
   Keywords are the labels of your manuscript used in scientific databases containing many thousands of papers. A correct use of keywords will determine if your article is noticed by potential readers, or if it is only glanced over before the reader decides to move on the next article in the database without reading yours. Keywords that are generic in nature are always ineffective.

4. The introduction:
   This section should set the stage for what is presented in the article. One must provide a clear description of the problem to be addressed along with detailed explanation of the importance of the problem. One should also define the group of stakeholders – the larger the better – for whom the stated problem is important. This is followed by the definition and detailed description of the specific research question to be addressed. A detailed justification of the importance of the question stated is also essential, along with a description of other related questions which are not being addressed in your paper. A clear definition of the future beneficiaries of the answer to be obtained must also be provided.

5. The literature review:
   One must provide a critical, very brief and comprehensive summary of the most relevant prior research by the author(s) of this paper as well as by other writers worldwide attempting to address the same research question or other closely related questions. Such questions may have been addressed within the same subject domain, but also in different domains - sometimes in scholarly fields unrelated to one's own. All cited publications should be critically reviewed; do not cite publications that you have not fully absorbed and have not explained their relevance to the subject matter presented in your paper. Avoid an excessive number of self-citations or citations of publications from the same country or from the same geographic region.

6. The research methodology (your own selection of means and methods/tools employed to answer the stated research question):
   This section contains the detailed description of your approach to obtain the answer to your research question. Provide a clear justification of your selection of this approach and briefly discuss any alternate approaches which were also initially considered but ultimately discarded, along with justification of such a decision. Do not regurgitate a detailed description of established, well-known analytical tools, procedures or testing methods – it should suffice to cite relevant sources. Your description should be complete, i.e. it should be possible for a reader to reproduce the results of your research with the use of the stated means and methods used to obtain your research answer. Describe in detail your data formatting and other requirements related to the performance of statistical tests and analyses. Avoid procedural shortcuts which may render your methodology description useless to interested readers.

7. The research results:
   Provide a clear, detailed description of your results obtained by you with the use of the research methodology described in item 6 above. Concentrate on the main points and avoid digressing to only loosely related or unrelated topics. Your description should be aided by well-formatted and fully readable tables and figures emphasizing the main points being made. Avoid the inclusion of lettering and labels in a language other than English, as these will be useless for an audience unable to read in that language. Provide clear

evidence and description of the validation of the obtained results by other researchers or in professional practice related to your academic field. Normally, validation attempts with the use of computer simulation only based on arbitrarily constructed models will be considered insufficient by reviewers assigned to evaluate your paper, as such reviewers often prefer the evidence of real-life implementation of your results.

8. The discussion of research results (discussion of the importance of the answer to the stated research question):
   This may be the most important section from which the potential reviewers will begin their examination of your paper. Describe what your results mean and why they are important for the audience/readers/stakeholders targeted by this paper. Elaborate in detail on the contribution of your results to the body of new knowledge in your own scientific discipline and beyond.

9. Conclusions and directions for future research:
   This section provides a brief summary of the most important findings produced by the presented research. Describe in detail why this finding may be important to a global audience, not merely to your national or regional stakeholders. One must also describe the limitations of the results obtained and suggestions on how these limitations may be overcome with follow-up research. Additionally, one should provide a detailed description of how the results presented will inspire future generations of researchers worldwide aspiring to make contributions in the same or related fields of academic and professional endeavor.

10. The references:
    Make sure that all cited items contain complete bibliographic data. Avoid citing an excessive number of references which may be redundant and references in languages other than English. If one feels compelled to cite a non-English language reference, make sure to provide an English translation of the title (in parentheses next to the title in the language of the publication). There is a growing trend to provide an digital object identifier (DOI) for each journal paper or conference proceedings article being cited that has such an identifier, an ISBN for each book reference, and a web address with the date of last access for all other resources. There is also a diminishing emphasis on a particular format of references (as long as the cited items are listed in a consistent manner), as the article typesetting processes at the publishers are currently automated and conversions from one referencing format to another are straightforward.

Most high-ranking journal publishers have been quietly removing strict limitations on the number of pages or words a paper is allowed to contain due to the fact that most paid subscriptions are currently electronic. This removes the burden of the authors to conform to the volume limitations of their articles, allowing for a complete presentation of relevant research results. Additionally, datasets used in the conduct of the research being presented may be stored in cloud-based repositories accessible by all concerned.

Owing to the limitations of space, this guest editorial does not touch upon numerous contemporary issues related to the publication of papers in scholarly journals. However, I often conduct hands-on, full-day workshops in academic settings worldwide for aspiring and active academics interested in sharpening their writing skills and in becoming successful in publishing their papers in top-ranking international scholarly journals. There are ample opportunities to address individual interests and answer specific questions during such workshops. I hope to see many of the readers of this editorial in a workshop to be conducted in the future in a location near you.

Mirosław J. Skibniewski
10 February 2019
University of Maryland, College Park, USA
https://pm.umd.edu
http://e-construction.umd.edu

WE ARE INTRODUCING A MEMBER OF EDITORIAL COUNCIL

Viktor Beschastnyi
Doctor of Juridical Science, Professor,
Honored Lawyer of Ukraine.

Date of birth: 9 November, 1959.
Education: higher, graduated from Kharkiv Law Institute (now – National University «The Yaroslav Mudry Law Academy of Ukraine»), on a speciality «Jurisprudence», Donetsk State University of Management, on a speciality «Finance». In 2005 he defended the thesis for the scientific degree of Candidate of sciences in Public Administration on the topic: «A mechanism of public administration by professional training of the internal affairs personnel». In 2010 he defended the thesis for the scientific degree of Doctor of Public Administration on the topic: «A mechanism of public administration by the development of higher educational institutions of the system of the Ministry of Internal Affairs of Ukraine». In May 2018, he was awarded a Doctor of Science degree in speciality 12.00.08 «Criminal Law and Criminology; Penal enforcement Law».
Since 1981 he served in the internal affairs agencies. 1983-2003 – service in the internal affairs agencies of Donetsk region. Since 2003 – the rector of Donetsk Institute of Internal Affairs at Donetsk National University (now – Donetsk Law Institute of the Ministry of Internal Affairs of Ukraine).

History

The history of Donetsk Law Institute of the Ministry of Internal Affairs of Ukraine dates back to April 28, 1961, when according to the order No 0109 of the Minister of Internal Affairs of the Ukrainian SSR Stalino (Donetsk) specialized secondary militia school of the Ministry of Internal Affairs of the USSR was established. The cadets of Kyiv specialized secondary militia school of the Ministry of Internal Affairs of the USSR were transferred to Stalino (Donetsk) to continue their studying at the 2-nd course of the newly established educational institution.

In 1964, the educational institution was relocated from a small settlement and the educational institution received its permanent registration in Kyiv district of the city of Donetsk until 2014.

Taking into consideration the socio-political conditions prevailing in the eastern Ukraine, the educational institution was forced to change its location.

According to the order of the Ministry of Internal Affairs of Ukraine No. 1010 dated September 30, 2014, Donetsk Law Institute of the Ministry of Internal Affairs of Ukraine moved to Kryviy Rih, where the higher educational institution-forced migrant provides educational and scientific activities.

Activity

Thanks to the dedication of the staff and personally the rector V. M. Beschastnyi the Institute has firmly entrenched in the educational field of Kryvyi Rih district. As at 2018, the higher educational institution has two large training buildings, fully equipped for the educational process and placement of the cadets, a special hostel for teachers and the rest of the staff, a student hostel.

In 2016 Mariupol Training Center (now it is the «Police Academy» of Donetsk Law Institute) joined the Institute. It was a significant event in the life of the Institute that symbolically highlighted the connection with Donetsk region.

The strengthening of the personnel potential has allowed to gradually restore the structure of the educational institution. Today the Institute includes 4 faculties, 12 departments where the educational process is provided by a powerful team of teachers, among them there are 16 doctors and 60 candidates of sciences.

In spite of temporary personnel losses, Donetsk Law Institute has remained a very powerful research center. So, the Research laboratory on problematic issues of law enforcement activities continued its work. In addition, the Specialized Academic Council on five specialities functions in the Institute.

The Institute obtained a license for training of Doctors of science in the field of «Law» which was approved by order of the Ministry of Education and Science of Ukraine on 4 July, 2016.

Today Donetsk Law Institute has a powerful Education and Training base as in Kryvyi Rih (a total area is 11608, 79 sq. M), so and in Mariupol (a total area is 1,704,14 sq. M), and makes every effort to provide modern innovative development of the educational process of training of future policemen and lawyers.

Donetsk Law Institute is the only institution of higher education in Kryvyi Rih district where a full course of training of future lawyers is provided – from the Bachelor's degree to the Doctor of science degree.

Our address: Kryvyi Rih, Stepana Tilgi Street, 21, Spivdruzhnosti Street 92a
Mariupol, Budivelnykiv Avenue, 145

WE ARE INTRODUCING A MEMBER OF EDITORIAL COUNCIL

Kostytsky Vasyl
DrSc., Professor,
Academician of the National Academy of Legal Sciences of Ukraine, Honored Lawyer of Ukraine, Kyiv, Ukraine

Dear colleagues! Dear readers!

We would like to take this opportunity to wish you heartily a merry Christmas and Happy New Year!.

The beginning of the New Year is marked by high hopes for the end of the world's COVID-19 coronavirus pandemic, which has proved to be not the only but the most dangerous and brutal challenge of modern globalized life for our civilization. Together with the obvious changes in climate and the exacerbation of inter-ethnic and inter-religious tensions, the pandemic threatens the well-established principles of social and individual life by the spread of poverty and the existence of military conflicts, the possibility of a negative impact of global warming and unrestrained ethnic relocations to Western Europe, the verification by political crises of the achievements of liberal democracy and indignation against remnants of dictatorial regimes, the growth of the legal mass – the number of laws and regulations – and the restriction of human and civil rights and freedoms...

There is a lot of big and small problems. Remarkably, many elites, Governments and officials are showing confusion or slow progress in finding and implementing optimal solutions. This is particularly regrettable given that we are entering an era of postliberalism in which ideas of humanity, the primacy of human rights and freedoms before individual selfishness and human rights have had to give way to sociocentric ideas in order to save peoples and civilizations. Indeed, the great Ukrainian writer I. Kotliarevskyi wrote in «Eneida» as about today: «where the common good is in decline, forget the father, forget the mother ang fly to do your duty». As a universal instrument and regulator, as a social phenomenon and an enduring social value, the law is called upon to address these challenges.

Well, today we have to implement the of T. Jefferson's credo: try to do your duty at all times, and history will justify you, even if you fail. It is also a great test for legal science, which is called upon to find theoretical and methodological justifications for solving the basic problem and assigning right as a measure of good and justice (Ulpian), a means of balancing personal interest and the common good (V. Soloviov). The duty of scientists is clear. We will try to implement it using our main weapon – a word, including in the pages of important scientific journals.

May God help us!
Best regards, Prof. Vasyl Kostytsky.

INTRODUCTORY WORD OF A MEMBER OF THE EDITORIAL COUNCIL

Marián Mesároš
Dr.h.c. prof.h.c. prof. Ing., DrSc., DBA, MSc., MBA, LL.M
President and Rector of the University of security management in Košice, Slovak Republic

Dear readers and colleagues!

What differentiates us from the rest of the material world is the ability to move our civilisation to a higher level of knowledge, whereas the knowledge is preceeded by the scientific knowledge, namely regadles of the fact whether one realizes the fact and refers to the scientific knowledge as science or not. Science has brought not only a lot of positive, but unfortunately also a lot of negative matters. However, it is the human character that often forces one to do evil having varous forms, and to do so even against oneself. From time immemorial, this forced to create an institute of prefect or protector in the society. Though such an institute used to be of different forms and names, it always incarnated the idea of "helping and protecting". It is necessary to admit that even under the cloak of the function of such an institute the humankind did unthinkable evil, and that is why based on our experience the science has to achieve progress even in the field of the applied security, namely with the intention of rising humanity in favour of achieving security on earth. Such a task is not easy to be fulfilled as the advantage of one person/organisation means troubles for the other one. That is why it is the task of the security science to increase security and protection of humankind in a complex way and respecting the other aspects of life within the permanently sustainable development.

In this view the Slovak society has been influenced for 20 years by the University of security management in Košice (USM) representing an education and scientific institution whose founder, statutary authority and the present Rector is me. The USM primarily focuses on both education (Bc., Ing., PhD.) within the field of the "security sciences" and on scientific and publication activities. The MBA, LL.M, MSc. and MPH study programmes can be studied after terminating the Bachelor´s degree study.

Complex knowledge and experience gained during foreign internships within the Erasmus+ programmes provided by the USM give its alumni sufficient knowledge and skills to be successful at the present uneasy time.

Experience of the latest months as a result of the Covid-19 pandemic has proven that well-educated professionals in management positions represent a guarantee of security and safety. These days, there is no time for performing experiments, re-educating and pretending experience, as these days necessitate professionals, namely security managers!

Dear colleagues, the Covid-19 pandemic has reminded us of the old fact that in general people are weak, however, when they start cooperating, they can find an effective way of fighting a common enemy. The same holds true of science and research, that is why the "European science" platform, crossing the frontiers of this journal, represents an ideal instrument for international cooperation.

I keep fingers crossed for all of us in achieving our common goal and, being the member of the editorial board of this journal and the Rector of the USM, let me wish us all a lot of clever ideas in favour of increasing security on earth.

Best regards, prof. Marián Mesároš.

THE IMPACT OF DECENTRALIZATION ON THE FUNCTIONING OF THE AUDIT

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Abstract. The relevance of the study is due to changes in relations between economic entities. Such changes directly affect the implementation of the functions of the management system system, one of which is control. Thus, the changes that occur during the decentralization of economic relations, affect the features of the form of control, which is defined as an audit. The object of study defined set of relations of economic entities that occur during the audit. Substantive characteristics of changes related to auditing in the context of decentralization are the subject of the study. To achieve the goal of the study we used such methods as abstraction, analysis, synthesis, induction, deduction, bibliographic analysis, systems analysis, economic and legal analysis, generalization and grouping, etc. It is established that decentralization is accompanied by redistribution between the subjects of management of the powers, resources that could be necessary for their implementation, as well as responsibilities. The results of the study have theoretical and practical significance.
Keywords: *decentralization, audit, control, management, economic entities, powers, responsibilities.*

Introduction

The current state of economic relations in Ukraine is characterized by the influence of a large number of different factors that determine the nature, content and consequences of the behavior of both individual economic entities and their groups. This influence is characterized by various orientation, intensity, consequences and other parameters.

Among the factors influencing the relations of economic entities, the processes related to the change of powers and expectations of various participants in the management system acquired special importance in the conditions of transformations. They participate in the formation, accumulation, storage and transmission of information, substantiation and implementation of management decisions based on it, evaluation of the results of their implementation, making adjustments both in the activity itself and in the process of its management. These processes are closely related to the phenomenon characterized by the term "decentralization".

The process of decentralization of economic processes in Ukraine has gained significant positive dynamics after 2014, when a number of regulations were adopted. They regulate the relations between the subjects of management of political, economic and other processes, which allowed to delegate to local governments additional powers and resources necessary for their implementation. Thus, in order to adapt to the Ukrainian conditions of the European Charter of Local Self-Government (European Charter of Local Self-Government, 1985), the normative documents of the Verkhovna Rada of Ukraine, the President of Ukraine and the Cabinet of Ministers of Ukraine approved the Sustainable Development Strategy "Ukraine 2020" (Pro Strategiyu staloho rozvytku «Ukraina-2020», 2015), defined conditions for voluntary association of communities (Pro dobrovilne ob'ednannya terytorialnykh gromad, 2015), formulated the principles of state regional policy (Pro zasady derzhavnoi regionalnoi polityky, 2015), developed measures to ensure decentralization reforms (Pro dodatkovi zakhody schodo zabezpechennya reform iz decentralizaciyi vlady, 2018).

The implementation of these and other normative documents in the legal field of Ukraine has led to the transformation of relations regarding the formation and use of financial and other resources that were previously transferred to local communities by central authorities.

Decentralization processes lead to redistribution of powers between economic entities at different levels. Each decision-maker has its own economic, social, environmental and other interests. Such interests can be aimed at achieving goals, the general parameters of which vary in the range from unidirectional to diametrically opposed. Their content is determined by the expectations of the users of the information, the parameters of the objects that are disclosed in it, the environment in which the relevant data is formalized, as well as the methods of their disclosure and presentation.

Relevant changes in the formalization of different groups of economic entities interests have been formalized in a number institutions of regulations, which, based according to their status, provide the economic needs of the state and other participants in economic processes of both property and corporate interests protection (Pro zatverdzhennya Polozhennya pro poryadok provedennya konkursiv z prodazhu paketiv akcii akcionernykh tovarystv, 2012, Pro zatverdzhennya Poryadku zdiysnennya kontroliu za vykonannyam funkcii z upravlinnia ob'ektamy derzhavnoyi vlasnosti ta kryteryiv vyznachennya efektyvnosti upravlinnia ob'ektamy derzhavnoyi vlasnosti, 2012, etc.).

One of the tools to ensure the interests of economic entities in the context of decentralization is to strengthen the control function, especially in its form as audit. The study of identification and solution of audit problems as a tool to meet the needs of economic entities in a decentralized environment will increase the reliability of information and optimize its use. Considering the above, the aim of the research, the results of which are described in this article, is the verification of the hypothesis as to the existence of influence of decentralization of economic processes on the functioning of audit as one of the control forms, and also the identification and formalization of its features.

Literature review. The experience of introduction of the reforms related to decentralization in different countries found the reflection both in the specialized researches (*Council of Europe Press, 2004*) and scientific publications. Separate aspects of introduction of decentralization and solution of related to it theoretical problems were described in the works of K. I. Bryl (*2017*), V. I. Gladiy (*Gladiy*), M. I. Derkach (2011), T. M. Horvat (*Horvat*), A. P. Lelechenko, O. I. Vasiljeva, V. C. Kujbida, A. F. Tkachuk (*2017*), N. Y. Rekova (*2018*) P. B. Chornopyskyi (*Chornopyskyi, 2018*) and other researchers.

The research related to the attempt of identification and scientific substantiation of mechanisms of implementation of interests of different groups of economic entities gained distribution in the conditions of decentralization. Corresponding results were published in works of V. M. Zhuk (*Zhuk, 2015*), T. C. Osadcha (*Osadcha, 2017*), N. Gonthier-Besacier, G. Hottegindre, S. Fine-Falcy (*Gonthier-Besacier, Hottegindre, Fine-Falcy, 2012*), M. P. R. Bolívar, A. N. Galera, M. D. L. Subirés, L. A. Muñoz (*Bolívar, Galera, Subirés, Muñoz, 2018*) and others.

Among other, the leading role of control in the system of economic processes management on different levels was acknowledged. In particular the features of implementation of control measures (including in the conditions of decentralization) were described in publications by Th. Volfersson (Volfersson, 1987), T. I. Yefymenko, I. B. Stefaniuk, N. I. Ruban (*Yefymenko, Stefaniuk, Ruban, 2004*), O. M. Petruk, O. V. Smaglo (*Petruk, Smaglo, 2015*), A. Ismail, M. Hasan, C. Clark, R. M. Sadique (*Ismail, Hasan, Clark, Sadique, 2018*).

The audit is one of the forms of control of economic processes and information about them. The ways of solution of problems of audit were investigated by R. Adams (Adams, 1995), A. Arens (*Arens, 2011*), I. M. Dmytrenko (*Dmytrenko, 2013*), O. Y. Redko (*Redko, 2008*), J. Robertson (*Robertson, 1993*), V. V. Ryadska (Ryadska, 2014), Y. B. Slobodianyk (*Slobodianyk*), O. L. Sherstiuk (*Sherstiuk, 2017*), A. Tiron-Tudor, G. S. Cordos, M. T. Fülöp (*Tiron-Tudor, Cordos, Fülöp, 2018*) and other scientists and practicing auditors.

Not discarding the positive results of research of these and other researchers, we consider it appropriate to establish that a necessity emerges of further research with the aim of solution of the issue of functioning of state and independent audit in the conditions of decentralization.

Research methodology. For verification of the hypothesis which was put forward during research the results of which are disclosed in the article, we applied general-scientific (abstraction, analysis, synthesis, induction, deduction) and specialized (bibliographic analysis, systemic analysis, economic and legal analysis, generalization and grouping and others like that) methodical approaches. The combined application of them allowed to formulate results of the conducted study that have a theoretical and practical value.

Research results. In our opinion, there exist reasons to establish the presence of decentralization processes influence of on features of certain elements of an audit.

As a result of redistribution of plenary powers, resources and responsibility among the certain elements of control system (by subjects accountable for preparation and presentation of information and by users of information) their expectation and possibilities concerning the use of informational, financial, material resources, and also resources of time and labor change. In this case, such redistribution can facilitate the change of informative streams, in particular – in the participation of state and independent auditors.

At the same time, the processes of decentralization can result in the redistribution of plenary powers between state and independent auditors as a result of change of expectations of initiators of audit and users of its results. The indicated influence of decentralization, in our opinion, can lead to the change of level of trust to the information tested by auditors.

The results of the conducted research gave an opportunity to establish that such elements of audit as the selection of the criteria of the evaluation of an object, acquisition and evaluation of auditor's evidence and formation of report on results of the executed work have certain peculiarities for an independent and state audit. In other words, there occurs an indirect influence of processes of decentralization on an audit.

Discussion of research results. Audit, in accordance with the valid release of the Handbook of International Quality Control, Auditing, Review, Other Assurance, and Related Services Pronouncements (*2018*), is considered one of the types of tasks on results of execution of which the certainty to the information users is provided. The indicated type of tasks which are executed by an auditor can be identified on condition of simultaneous presence of the row of elements, namely:

1) existence of trilateral relations among persons accountable for creation of information, its users and subjects, possessing theoretical preparation and professional skills necessary for implementation of independent evaluation of information;
2) an object of a task;
3) criteria of evaluation of the object of audit;
4) a necessity for acquiring of sufficient amount of appropriate auditor proofs as to the object of audit;
5) presentation of a written conclusion to the information users that contains the results of the evaluation of information conducted by an auditor.

The indicated elements of audit as the task of providing confidence to the users of information, in our opinion, can be identified and investigated in the context of determination of influence of processes of decentralization on the development of audit. We believe that the determination of factors of influence on the indicated elements must become the basis for such research, as well as the determination of the character and content of such influence.

Among persons responsible for the formation of information, one can identify financially-economic entities, among which – business entities, as well as establishments, possessing plenary powers to dispose of state resources. On the basis of the content of the aims of functioning and parameters of corresponding tasks, the indicated entities use the resources, granted by proprietors, creditors, and also state administration entities. For the acquisition of access to the corresponding resources economic entities must present their suppliers with the information, systematized in a certain way.

The proprietors of the indicated resources are interested in such information, which is stipulated by a necessity of data concerning the efficiency of their use and the possibility to benefit economically or in other way as a result of this. At the same time, qualitative, quantitative and cost characteristics of information and the process of its preparation must correspond to the totality of criteria. The fact of such accordance must be confirmed by

an independent person that possesses the necessary preparation and practical skills for this purpose – by an auditor.

First of all the processes of decentralization are characterized by the delegation of plenary powers from the management of higher level to the entities that execute administrative functions at lower levels. Therewith, the delegation of powers is accompanied by the transmission of possibility to maintain, distribute and use the resources, which were exclusively owned by one management entity, to two or to the greater amount of managers. Taking this into consideration, the responsibility for the results of corresponding measures is transferred accordingly, which, in its own turn, stipulates additional accountability of entities that received additional plenary powers.

Such redistribution of plenary powers, resources and responsibility for their use results in the emergence of necessity to change objective description of audit as a form of control of the functioning of economic entities. It is explained by creation of new informative streams between the management entities and the managed objects during decentralization. As a result, the physical amount of objects, the functioning of which must be investigated by the subjects of audit, and, accordingly, the amount of control measures that must be executed in interests of management entities, increases.

At the same time, in the context of decentralization, additional economic entities can be created, provided with plenary powers the content of which is determined by the expected results of decentralization. As they were not peculiar to entities of management before, there is a necessity, on the one hand, to create new entities, on the other hand, to execute control measures (in particular – the audit) concerning the results of their functioning. In addition, it is worth indicating that implementing new plenary powers in interests of control system new entities acquire responsibility particularly concerning the characteristics of information submitted to the control subjects. This also assists an increase of amounts of objects controlled, the verification of functioning of which is envisaged in the form of control, particularly the audit.

On the other hand, additional plenary powers of existent participants of economic and other relations accountable for creation of information and transmission to her users can envisage delegation of certain authorities for the next level of performers. It gives an opportunity to admit the origin of additional requirement in realization of control measures, including – to the audit, already for information that is given by other entities. In the conditions of decentralization such entities are provided with additional plenary powers or such that were created for the achievement of her aims.

The increase of requests for execution of audit stipulates the necessity of revision of volume and content of plenary powers of its subjects. If a certain part of plenary powers of management entities is delegated to the greater amount of economic entities, there emerges an issue of the physical increase of volume of audit measures that must be taken.

However, delegation of plenary powers, resources and responsibility can result in the redistribution of possibilities of the utilization of the results of implementation of audit measures of state and independent audit subjects. If certain types of functions of control system are redistributed from economic entities whose functioning does not envisage the acquisition of income, in behalf on business entities (or vice versa) there can emerge necessities for bringing in independent auditors (instead of state auditors or together with them) or state (instead of independent or together with them).

Thus, changes that occur as a result of decentralization in the element of audit that envisages a presence of three independent parties can be represented illustratively (figure 1).

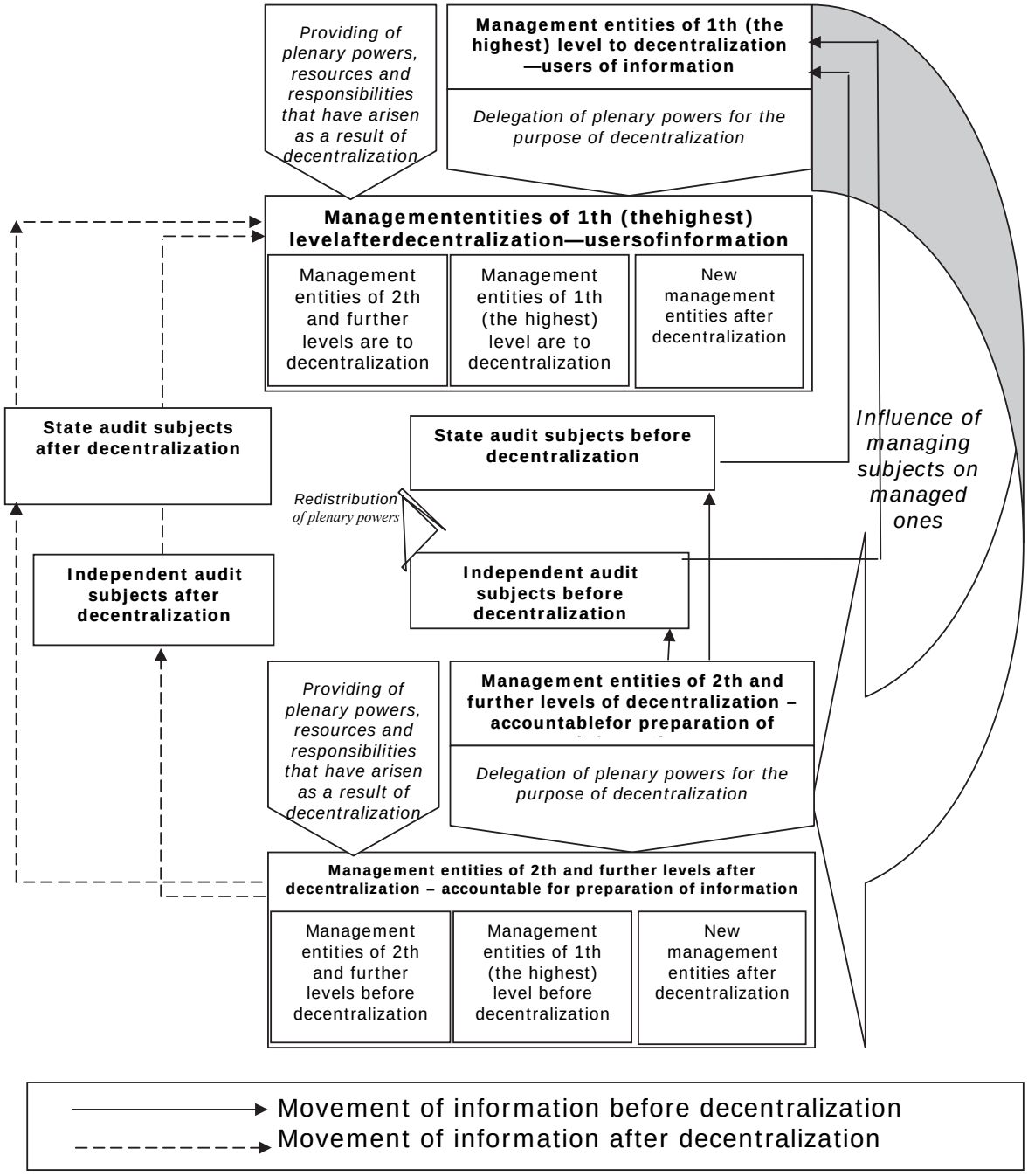

Figure 1. Changes in the relations of subjects on the basis of which the elements of audit are determined in the conditions of decentralization
Source: development of the author

Another element of audit as of a task of granting the confidence is its object. An object of audit is any data in the evaluation of which there the users of information are interested. Such data can concern the financial, social, ecological, technological, organizational, reporting and other aspects of functioning of the controlled economic entities.

The object of audit is usually determined considering the expectations of users of corresponding information and requirements of the operating normatively-legal regulation. The normatively-legal

regulation determines the minimum set of aspects of functioning of controlled objects that must be evaluated during an audit and forms the subject domain of audit. In addition, it is worth noting that an object of audit that is determined by normative documents, including the ones of the legislative origin, considers the interests of the users authorized to apply financial and other sanctions upon establishing of facts of legislation violation.

In our opinion, such conceptual approach to identification of the object of audit is not substantiated enough. It can be explained by the fact that the functioning of economic entities, especially in the conditions of decentralization, is determined by the content and character of plenary powers they are provided with by managing objects, as well as by the algorithm of formation and utilization of resources, necessary for implementation of acquired plenary powers, and also by responsibility for allowing deviations from the algorithms of such implementation and nonachievement of the aims which were set.

The important aspect of identification of the object of audit, in our view, is the possibility of considering the interval of time during which the signs exist according to which the object of audit can be identified and evaluated. In particular, it can concern information about past events, current descriptions of functioning of the controlled object in the control system and prospects of its functioning in the future.

Other substantial aspect of identification of the object of audit which is completely or partially ignored by normative documents is its relevance, that is to say, expediency to determine a certain article of audit on the basis of his accordance to interests of users from the point of view of auditor.

Indicated and other deficits of identification of the object of audit can be taken into account, if the approach based on expectations of user of information under investigation is preferred. The corresponding conception acquires an especially high level of validity in the conditions of decentralization. It is related to the change in functioning of subjects accountable for creation of information and its presentation to the users, to the informational necessities of users, and also to the totality of circumstances that influence the possibility and method of the use of corresponding aspect for the purposes of both the user of information and audit.

The presence of objective limitation in the operation of both state and independent auditors consists in the determination of duration of conducting the audit as well as in limitation of resources at the disposal of the subject of audit. This stipulates the necessity of determination of the most problematic and risky aspects of functioning of the object under control which need a greater, in comparison with less substantial questions, use of resources of time, labour, material and finance by an auditor.

At the same time, in the conditions of decentralization both subjects accountable for the preparation of information and its users, in the event of initiation of conducting a state or independent audit, are obliged to take into account their own limitations determined by statutory powers, requirements of normative documents concerning the duration of conducting of audit measures, order of evaluation of its results and introduction of them in the functioning of the object under control. In this case the necessity of the rational use will also concern resources that are necessary for the indemnification of expenditures of an auditor resulting from conducting the corresponding measures.

In our opinion, it is also important to indicate an emergence of new aspects of activity of controlled objects in the conditions of decentralization. They are determined not only by the fact of redistribution of plenary powers, resources and responsibility between parties the existence of which is the basis of identification of elements of audit. It directly concerns, for instance, the processes related to implementation of such redistribution. The indicated aspects in the conditions of decentralization must be recognized as the independent elements of subject domain of audit. The observance of corresponding procedures give reasons to define legitimacy of functioning of a controlled object, a user of information about it and an auditor.

Thus, the influence of decentralization on the object of an audit consists in expanding of a circle of processes and their results the evaluation of which can directly or indirectly provide the users of the verified information with the possibility of its adequate utilization.

The next element that characterizes the audit in the conditions of decentralization, in our opinion, is the criteria of evaluation of an object. Their content, the peculiarities of formation and application directly influence the possibility of achieving the aims of audit in the interests of users of its results.

Depending on significant features of the object of audit, the interests of users of its results and selected application methods the following criteria of evaluation used by an auditor can be established: criteria of quality features evaluation, criteria of quantitative features evaluation and criteria of cost features evaluation of the object of audit (figure 2).

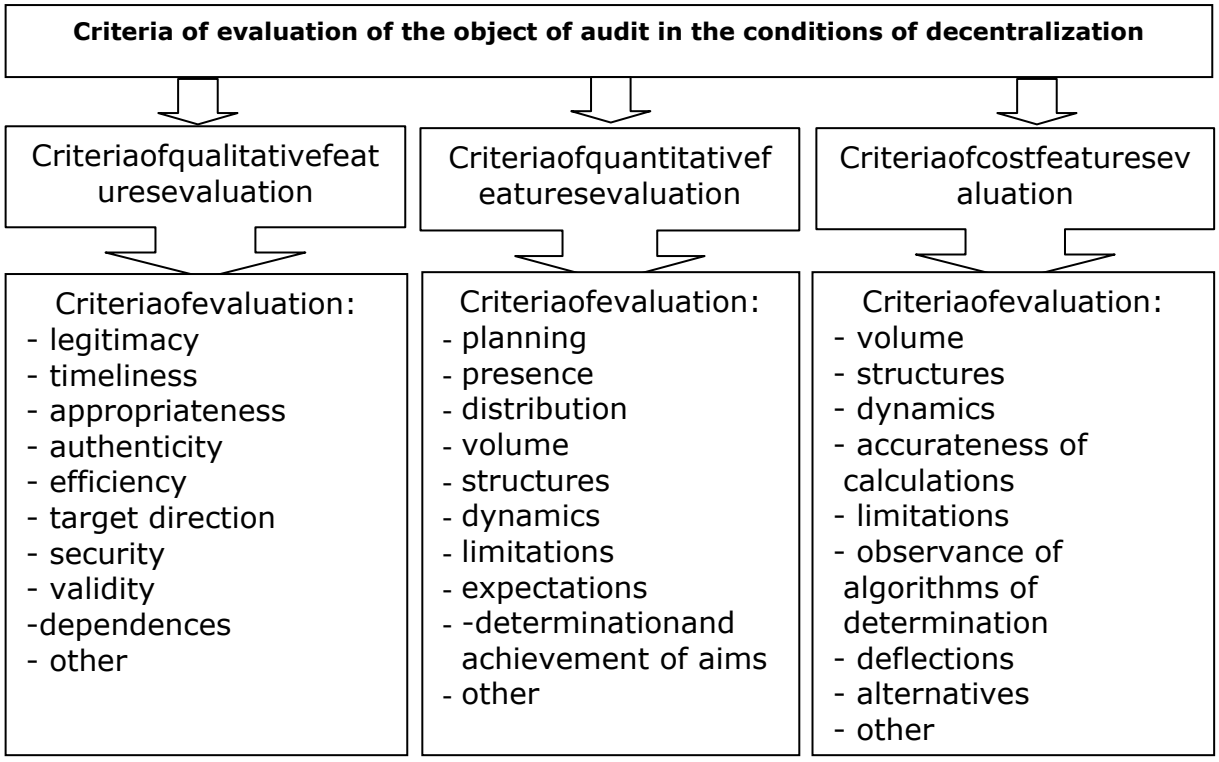

Figure 2. Types of evaluation criteria of the object of audit
Source: development of the author

In the conditions of decentralization the indicated features can change, based on the changes in the object of audit. Such changes can be initiated by an auditor on the basis of acquisition of new understanding of interests of users of information under investigation, requirements concerning evaluation which are contained in normative documents, and also auditor's own experience in the execution of similar tasks. The basis for the choice of evaluation criteria of the object of audit is the professional judgment of an auditor. It must take into account, on the one hand, the facts that certify the possible use of information that has to be verified, and, on the other hand, auditor's own understanding of such facts. Thus, content and features of any changes in the criteria of evaluation of the object of audit, including in the conditions of decentralization, is determined not by external circumstances, but the subjective attitude of an auditor toward them.

Conclusions

Research results, described in the article, will facilitate the optimization of the use of information by economic entities on the basis of providing of high level of credibility from the side of users considering the confidence derived from the results of an audit.

At the same time, the results of the conducted research did not give an opportunity to find an unambiguous solution for a row of debatable issues.

In particular, it concerns the determination of parameters according to which adequacy of distribution of plenary powers between the subjects of state and independent audit can be characterized.

As a result, there emerges a necessity for the development and formalization of the scientifically substantiated approaches to the determination of results of audit user expectation accordance to possibilities that implementation (jointly or separately) of state and independent audit can provide.

In the context of aforementioned we believe that a substantial value is acquired by the necessity of solving the problem of adequate identification of informational necessities of management entities and controlled objects.

The solution of the indicated and other problems of functioning of audit in the conditions of decentralization, in our opinion, will facilitate the increase of adequacy of implementation of necessities of information users.

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THE IMPACT OF ARTIFICIAL INTELLIGENCE ON GROWTH IN THE AGRI-FOOD INDUSTRY: LITHUANIAN CASE

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Abstract. The paper examines the concept of artificial intelligence and its impact on economic growth in the agri-food industry. Artificial intelligence is divided into seven main areas, but machine learning, expert systems, vision and robotics are most widely used in the agri-food industry. The authors discuss artificial intelligence technologies being developed in Lithuania for the agri-food industry. Directions of application of each area of artificial intelligence used in the agri-food industry are being analyzed. The authors argue that the impact of artificial intelligence on economic growth in the agri-food industry responds through increased productivity. Growing gross value added to Lithuanian agriculture, forestry and fisheries, as well as in the Lithuanian food processing industry shows improving labor productivity. It is appropriate to continue research and innovation in the agri-food industry, as farms tend to increase investment, which creates preconditions for the agri-food industry to increase productivity.

Keywords: *artificial intelligence, agriculture, agri-food industry, economic growth.*

Introduction

Artificial intelligence (AI) currently is the main technological paradigm; therefore, it is important to explore the concept of AI, which was invented in 1955 and introduced to the scientific literature by the computer scientist John McCarthy, however, there is no uniform definition of AI to date. In common dictionaries, artificial intelligence is defined as a branch of science about machines that have the properties of the human mind, such as the ability to speak, recognize image, problems and training, or as a branch of science that studies computer systems that can mimic human behavior. AI is to be treated as an activity intended to produce intelligent machines and intelligence is the property of publishing entities envisaged in the environment. AI technologies are the wayto enable “smart” behavior in the machinery. In order to achieve this, it is possible to use different methods

and combine them into many programs that solve specific tasks. Due to the possibility to combine different task programs according to several methods, AI technologies are distinguished by the peculiarity of general application.

The agri-food industry is complex, challenging a wide range of processes and operations, but in general this industry is inefficient. The agri-food industry needs innovative solutions. There are many stakeholders in the agri-food industry - growers, producers, trade representatives, the national policy-making corporations, so it is important to set goals and challenges in implementing sustainable solutions. Technology is one of the tools to achieve the goals and a key tool in the digitalisation of agriculture, with technological tools already in place to monitor processes in real time, streamline interventions in agriculture and calculate reasonable costs. Technology can drive the agri-food industry to become more productive, improve the sustainability and management of agriculture.

Theoretical Background. As more and more countries have announced initiatives and plans to promote the use of AI, some of them have introduced the concepts of AI itself. The Lithuanian Artificial Intelligence Strategy defines AI as systems that demonstrate intelligence and intelligent behavior by analyzing their environment and making fairly independent decisions to achieve goals. The European Union definedAI as systems that behave intelligently, analyzing their environment and making fairly independent decisions to achieve a goal. AI systems can be software-based and operate in a virtual world (voice synthesizers, image analysis software, search engines, speech and facial recognition systems) or can be integrated in hardware (advanced robots, self-propelled vehicles, drones or IoT). In France, the concept of AI is officially defined as 'a theoretical and practical interdisciplinary field that aims to understand the mechanisms of cognition and thinking, and to simulate them using hardware and software to help or modifyhuman activity'.

Whatever term is used, AI encompasses many different areas that are interrelated (Figure 1).

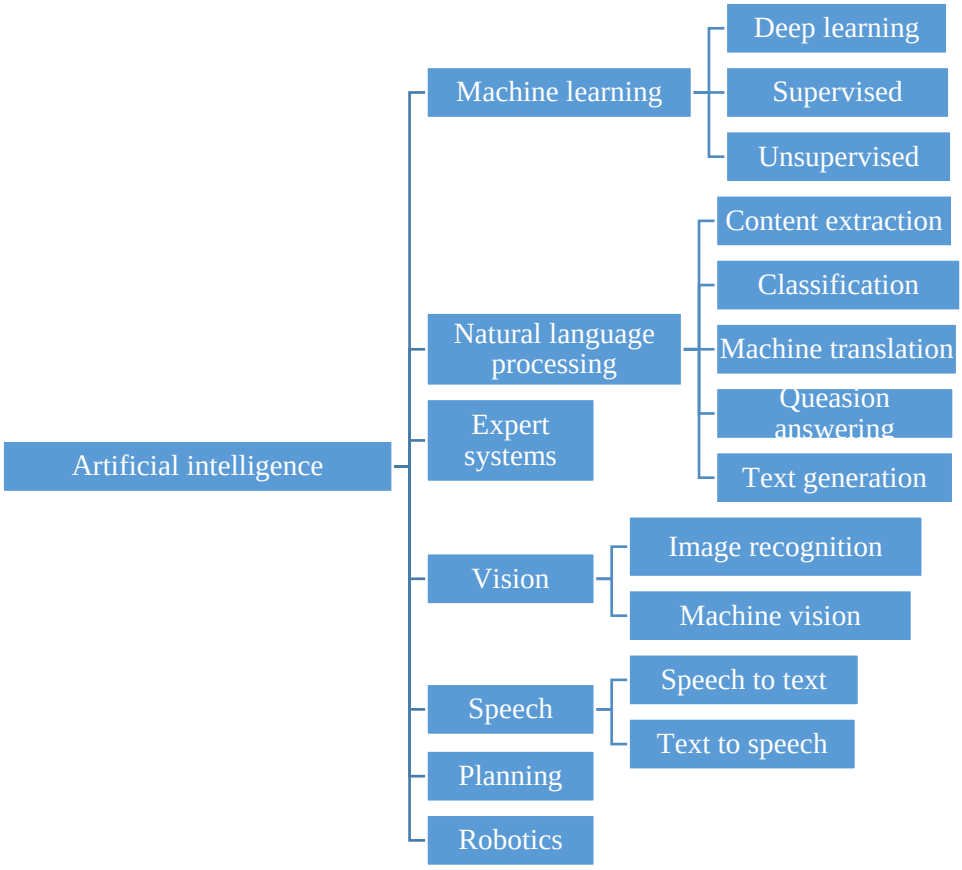

Figure 1. The branches artificial intelligence (AI)

In the agri-food industry not all areas related to AI are relevant. Machine learning, expert systems, vision and robotics are more widely used.

Machine learning is a type of AI where computers use massive databases to figure out how to perform tasks. In the case of classical programming, the person himself enters the rules (program) into the computer and the data for their processing in order to obtain answers. Therefore, it can be argued that a machine learning system is taughtrather than programmed. In the case of machine learning, many important examples are provided for the task, the system statistically structures the examples, and finally develops rules for task automation (Chollet, 2018).

Agricultural technologies and precision farming, also known as digital agriculture, have emerged as a new branch of science that uses data arrays to increase agricultural productivity while reducing environmental impact. Machine learning in agriculture has emerged alongside big data technologies and productivity calculations to create new opportunities to reveal, quantify and understand data-intensive processes in agricultural activities (Liakos, Busato, Moshou, Pearson, Bochtis, 2018).

Machine learning in the agri-food industry can be applied at various stages (Figure 2).

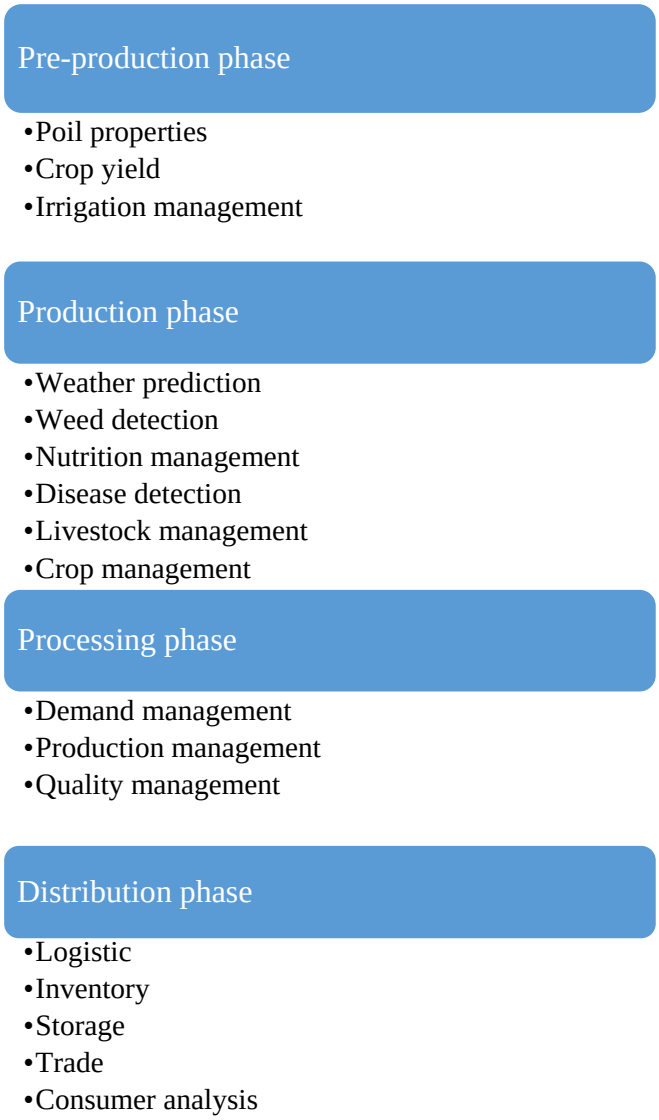

Figure 2. Machine learning in agri-food industry

In a study carried out by the European Parliament's Committee on Agriculture and Rural Development (2019) divided the application ofAI technologies into three categories:

1. Reducing the risk of agricultural production (eg early detection of crop diseases, use of drones to develop comprehensive soil maps for damage control);
2. Risk reduction (eg some technologies focus on risk detection related to emissions and climate change);
3. To increase production efficiency (eg control of water and energy consumption).

The use of AI in the agri-food industry can be divided into two categories: 1) digitalization of farm holdings and activities, and 2) application of new management methods.

AI-based technologies increase the efficiency and productivity of various industries, with no exceptions, and areas of the agricultural sector such as crop yield, irrigation, soil sensing, crop monitoring, weeding, crop sowing / planting. Technological solutions based on AI allow farmers to produce more products at lower costs, but by improving product quality and ensuring faster harvest delivery to the market (Talaviya, Shah, Patel, Yagnik, Shah, 2020).

Artificial intelligence can make a significant contribution to the development of a system of food industry experts to automate and monitor food quality control. Machine learning methodologies can help researchers and technicians to understand human behavior in order to decide on subjective food quality and to determine what are the objective features of food classification according to market and consumer needs. Machine learning algorithms can help: a) extract operational human knowledge from readily available sources (i.e., sample sets); (b) to establish clear rules for the classification of samples, notwithstanding the nonlinearity of the human behavior we study; and (c) determine the degree of influence (relevance) on the final expert's decision for each objectively assessed food characteristic. (Goyache, Bahamonde, Alonso, López, Coz, Quevedo, Ranilla, Luaces, Alvarez, Royo, Díez, 2001). Computer vision technology uses a camera and a computer to identify, track, and measure targets for further image processing. With the development of computer vision technology, it is increasingly applied in the field of agricultural automation (Tian, Wang, Liu, Qia, Li, 2019).

Computer vision can help accurately monitor crop developments to predict crop and environmental conditions affecting agricultural growth and productivity. By placing sensors in fields and farms, it is possible to collect information and analyze it. It becomes possible to predict soil conditions (drought, moisture, etc.), diagnose plant diseases using images of the leaves of healthy and unhealthyplants, and collect a variety of information on temperature, sunlight, seeds, fertilizers, pesticides, and agricultural equipment. Image analysis automatically detects anomalies or non-compliance with hygiene standards to strengthen quality control of agricultural products. For example, AI can be used to automatically sort grains to remove those that may contain cancer-causing aflatoxin, reducing milk E. coli bacterial contamination. Human work withdigital cameras, monitoring health compliance procedures, checking that workers wash their hands, wearing the necessary equipment (shoes, bathrobes and hats), etc., can be fully automated with the help of computer vision. Computer vision allows animals to be automatically counted to ensure their traceability and determine their weight to to guarantee healthy growth.

Various simulations show that by 2030 about 70 percent of companies will apply one of the categories of AI, so it is clear that it has the potential to contribute to global economical activity.

In summary, there is still no uniform concept of AI, but the basis of all definitions is that machines or computers become intelligent, whether it is goal-oriented or imitation of human intelligence or adaptation to the environment. The use of AI in the agri-food industry automates some tasks which increases productivity. With the help of AI, the ability to collect, store and analyze data arrays enables increase of the product quality, making them user-friendly.

Results and analysis. The gross value added indicator is used to assess the process of mechanization of production, when human labor is replaced by various mechanisms. In agriculture, this would be the replacement of workers with agricultural machinery and equipment, and so on (Figure 3).

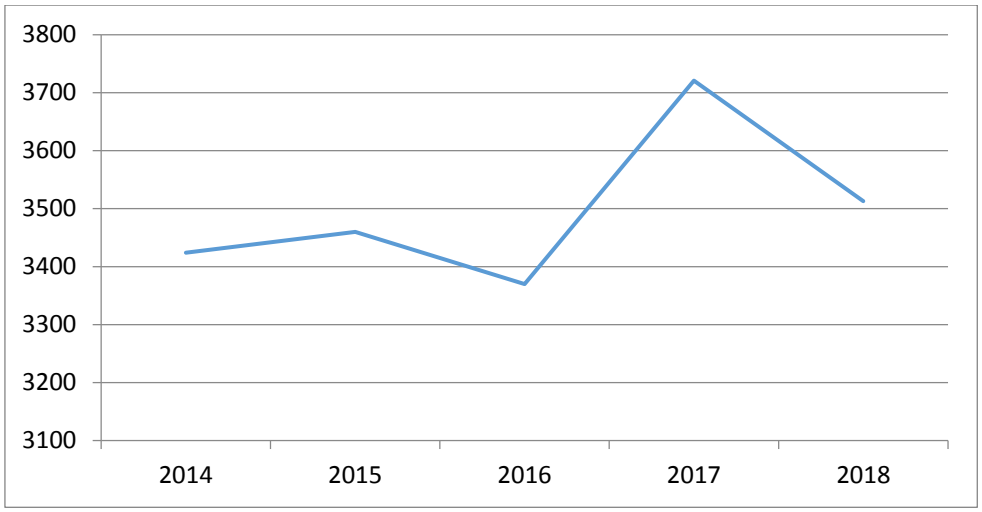

Figure 3. Gross value of Lithuanian production in agriculture, forestry and fishing, mln. Eur, (sources - data of Statistics Lithuania and Eurostat)

The growth of the value of gross production in agriculture, forestry and fishing was observed in 2014-2018. The same trend persists in the food processing industry (Figure 4). The analysis of the indicators shows that in agriculture, forestry and fisheries, as well as in the food processing industry, gross value added grew in 2014-2018, with a particularly marked increase observed in 2017. Positive change means improved productivity. During the period of 2014-2018, investments per 1 ha of agricultural land in farmers' farms averaged 1 314 Eur. The largest investments in the area of 1 ha of agricultural land went to farmers' farms smaller than 10.0 ha (2 424 Eur). Relatively much was invested in farmers' farms with 10.1–20 ha, 20.1–30.0 ha and more than 150.1 ha.

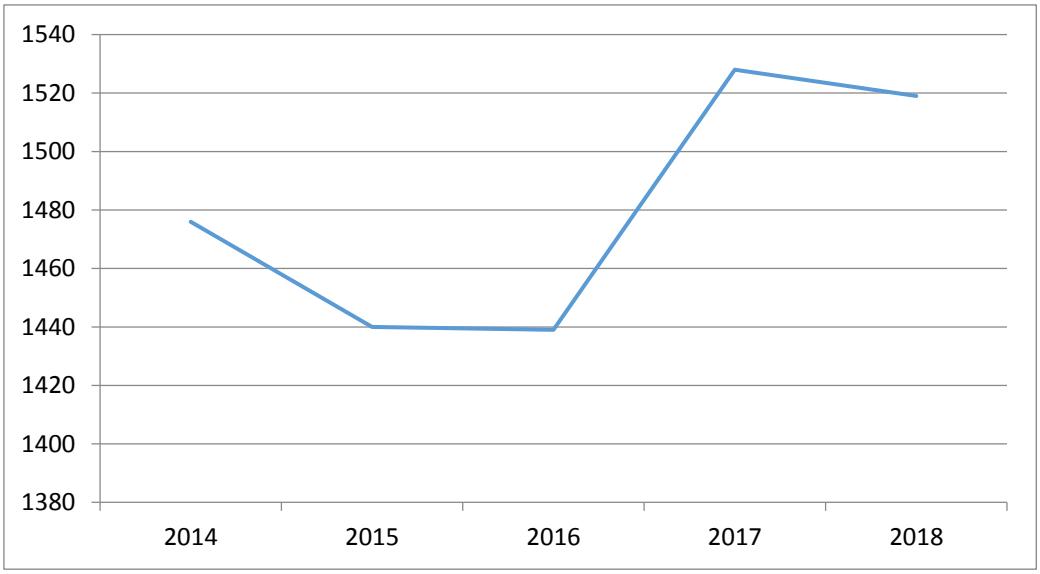

Figure 4. Gross value added created in the food processing industry in Lithuania, mln. Eur, (sources - data of Statistics Lithuania and Eurostat)

Currently innovative research is being carried out in the agri-food industry in Lithuania:

1. Hyperspectral imaging for precision agriculture. The benefit of the research is the application of analytical methods for hyperspectral image analysis of crop plants. Ability to remotely assess plant nutritional status and identify early stages of disease using field scanners. Data integration with a smart machine for sustainable and efficient use of agrochemistry;

2. Distributed algorithm processing infrastructure. The benefits of the study

include the application of innovative cryptographic solutions for agri-food technologies, the implementation of distributed and decentralized data processing infrastructure, ensuring the availability and use of advanced data processing algorithms, while maintaining their privacy and property rights.

3. Farm and grain management software. The benefits of the study are specialized information and process management solutions for agriculture, ranging from GIS-based farm management and planning platforms for farmers to integrated systems for grain elevators and fertilizer vendors.

4. Food integrity using AI and Raman spectroscopy. The benefit of the study is the possibility to widely use Raman spectroscopy in the food industry using machine learning and artificial intelligence analysis methods for spectral data analysis. The ability toquickly, non-invasively and on-site assess the quality, safety and authenticity of food and beverages.

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5. Electronic-nose devices to check the freshness of food. The benefits of the research and development, commercialization and innovation of gas sensor technology for the food industry. Introduction of the world's first handheld user-level device for non-invasive freshness of raw meat, poultry and fish.

6. 3D LiDAR programs in forestry. The benefits of the study are methodological studies for remote wood age, forest wood content and evaluation of potential production using 3D LiDAR technologies and real-time scanning. Modeling solutions in agriculture and fruit growing.

In summary, the growing gross value added in agriculture, forestry and fisheries, as well as in the food processing industry, indicates improvement in labor productivity. It is appropriate to continue research and innovation in the agri-food industry, as farms tend to increase investment, which creates preconditions for the agri-food industry to increase productivity

Conclusions

Examining the concept of AI and the directions of its use, it can be said that there is still no uniform concept of AI, but the basis of all definitions is that machines or computers become intelligent, whether it is goal-oriented or simulated human intelligence or adaptation to the environment. The use of artificial intelligence in the agri-food industry automates some tasks and tasks, which increases productivity. With the help of artificial intelligence, the ability to collect, store and analyze data arrays allows the increase product quality, making them user-friendly..

A theoretical assessment of the use of AI for economic growth shows that the use of AI will have a direct and indirect effects on GDP growth, depending on the industry (developing or applying the technology). AI companies will choose the "Human-in-the-loop" strategy as creating benefits throughout the value chain. Modern productivity theory questions the impact of AI as intangible capital on the impossibility of estimating it in national statistics.

After the analysis of the gross value added of the Lithuanian agri-food industry and investments in agriculture, it can be stated that the growing gross value added in agriculture, forestry and fisheries, as well as in the food processing industry shows improving labor productivity. It is appropriate to continue research and innovation in the agri-food industry, as farms tend to increase investment, which creates preconditions for the agri-food industry to increase productivity.

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THE NATIONAL LEGAL AND REGULATORY SYSTEM AND TUNISIAN WOMEN ENTREPRENEURSHIP

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Abstract. Investing in women is one of the most effective ways to increase equality and promote inclusive and sustainable economic growth. The development of female entrepreneurship should be given special attention and it should constantly be developed. Based on a documentary study of available national and international information, reports, studies and statistics, this paper makes it possible to carry out a description of the Tunisian business environment in relation to the entrepreneurial activity of women and thus define the shortcomings to be improved which are mainly linked to national and local policies aimed at promoting female entrepreneurship and improvement of the business environment in favor of women.

Keywords: *female entrepreneurships, tunisia, policies, entrepreneurship, business environment*

Introduction

Many governments have now adopted policy goals to increase the number of female entrepreneurs, due to the economic growth potential that a higher level of entrepreneurial activity can bring. This is seen as a means of creating jobs, promoting growth, integrating women into the formal labor market, achieving greater social integration, and reducing poverty. For developing countries and especially in Tunisia, although entrepreneurship is not well developed, for several decades we have seen the proliferation of women entrepreneurs hoping to see their enterprises realized (Touzani, Jlassi, Maalaoui, & Bel Haj Hassine, 2015). In Tunisia, several studies have shown that a set of dysfunctions affect the place and role of women as an economically active actor. The difficulties linked to its economic development are certainly not recent, but they have acquired considerable importance, particularly following the political and socio-economic context (Touzani et al., 2015). The entrepreneurial ecosystem in Tunisia is rich, with many major players participating. But the complexity and fragmentation company incorporation procedures, bureaucracy, corruption, lack of transparency at the policies and practice level, lack of a strategic approach and a forward-looking vision for the future were the reasons for the slowdown. Creation of entrepreneurial economic activities with high added value, which led to a significant rise of 15.4% in the unemployment rate in 2020 (CEIC, 2020). Tunisia has a legal context that provides an empowering environment for women to participate in the economy, With necessities for equality of opportunity and non-discrimination between men and women in the Constitution and Labor Code, in actual fact, Tunisia experienced a significant rise in the female participation rate until 2000, it has since then stagnated at a relatively minimal level and was 24% in 2018 (ILO, 2019) The position of the Tunisian woman is paradoxical. On the one hand, women represent more than two-thirds of higher education graduates. On the other hand, women's participation in the labor force is only 26%, compared to 70% for men (Hussami, Ehlermann, & Koeppinghoff, 2016). Additionally, over the past six years, only 17 percent of the jobs created went to 561,000 jobs for women. Consequently, this does not make it possible to reduce female unemployment, which in 2016 reached about 22 percent (13 percent for men), and about 42 percent for higher education graduates (22 percent for men) (ILO, 2016). Women entrepreneurs face barriers and experience specific constraints when starting a business, such as low use of financial and business development services or bank credit products. Policies that are realistic and meet the specific needs of women entrepreneurs can effectively

contribute to equal opportunities when starting a business and maintaining a profitable activity (Slađana, Goran, & Ivković Dragan, 2012).

Research methodology. This article is based on a study and a review of the narrative literature, for a better understanding of the national legal and regulatory system and its impact on the entrepreneurship of Tunisian women, reviewed several studies and made a complete interpretation of the study based on researcher surveys, or in some references, there is another definition of the study of narrative literature; it helps to define and determine the profile of the Tunisian business environment in relation to the entrepreneurial activity of women, it is also useful to develop a theoretical or conceptual framework on the subject.

The national legal and regulatory system.

The gender sensitive legal and regulatory environment helps women obtain the same economic rights as men while allowing them to claim these rights. This work provides an assessment of the development of the legal and regulatory system that revolves around an evaluation based on business registration, regulations and licensing procedures; Property and inheritance rights; Equal access to the labor market for women and labor laws and regulations and their impact on women entrepreneurs. This environment also ensures that specific laws and regulations are in place in this regard and that women are not subjected to habitual practices that ignore their rights (Kuriyan, Ray, & Toyama, 2008).

1- Business registration: regulations and procedures for obtaining licenses

For obtaining the various operating licenses and authorizations required to start activities is a necessary aspect to be able to access credit institutions and foreign markets. Although, many studies indicate that complex administrative procedures and high registration costs are disincentives to formalizing the business (Klapper, Lewin, & Delgado, 2011). For Tunisia, it is revealed that women can register a business without being legally obliged to obtain permission from their husbands (APII, 2016). Due to the costs of taxes women entrepreneurs in the informal economy do not choose to register their structures. Indeed, being able to register a company without a husband’s consent does not necessarily encourage women in this sector to register their activities (ILO, 2016).

Many stages are prearranged to acquire the company's legal identity, including registration in the commercial registry and publication in the Official Journal of the Republic of Tunisia (JORT). Women don't always know these several steps of the project idea when it is launched. They should go to the APII office to collect information about the mandatory administrative procedures and documents for registration, although some of this information is available online (ILO, 2016). Usually there is no specific treatment for women. The procedure depends only on the file prepared for the project as well as the completion of the administrative and legal procedures. Lack of knowledge of these procedures is an obstacle, in fact, the government does not make special efforts to advice women about registration procedures. Additionally, the different forms of business and the benefits of legal liability are not well understood. Also, there is a problem of corruption which hinders the proper conduct of these proceedings.

In fact, Tunisian law defines six hundred and sixty activities, three hundred and sixty of which are free and three hundred subjects to either licensing or specification. There is no discrimination between men and women in performing these activities. Women can obtain operating licenses for all types of businesses, including industries where men have traditionally been dominating (Tunisian Ministry of Development, 2020).

Given the importance of the rate of approval of credit applications as a curial indicator to evaluate the Entrepreneurship The report of the National Institute of Statistics illustrate shows that 17% are projects initiated by female promoters and 83% are initiated by male promoters. Besides, taking into account the cost of the investment, projects initiated by a woman cost on average 41% less than projects initiated by men as shown in the figure 1.

2- Property rights and Inheritance rights

Family, inheritance, divorce and other basic laws that reinforce social institutions will have an impact on women's property rights. Property rights are generally granted to individuals. But marriage systems, as the case in some countries, marriage systems allow husbands to virtually manage their wives' property in addition to the complementary system of marital society in place. Consequently, women do not have control over their property rights (World Bank, 2010). Therefore,

inheritance laws as well as customs and social norms define property rights between spouse (Diana Deere & Doss, 2008; ILO,2016).

In the past and in terms of inheritance, the Tunisian law does not assure women the same rights as men, and the fact that women are deprived of these rights was possible and acceptable until 1956. Indeed, the Personal Status Law article 3 mentions three cases of property inheritance to girls in Tunisia: "1) Half is allocated to the girl when she is Lonely; 2) Two thirds are allocated to girls when there are many (i.e. two or more); 3) When they are heirs to their brothers, the distribution is based on the principle that the male heir has a double share of what is attributed to the female (ILO,2016)." However, only a request entered in the will allows parents to grant an equal share to their daughters and sons. This Personal Status Code which after independence in 1956, prohibited forced marriage and polygamy and facilitated divorce. And it allows Tunisian women to work and open a bank account without the spouse's permission.

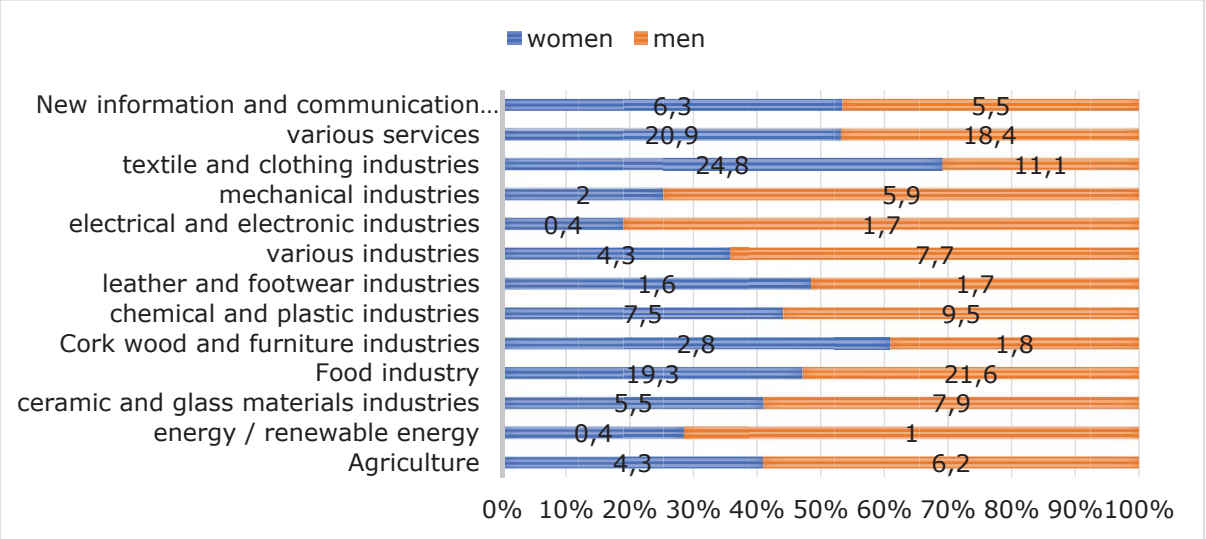

Figure 1. Approved project structures for women and men according to the sector of activity, Source: INS,2015.

The rule of inheritance has not changed, rather it was still considered based on the Qur'an. Until the past two years, there was a law project that was supposed to reform the distribution of inheritance between the sexes and was approved by the Council of Ministers (Gouëset, 2019). The current rule should be changed according to which men inherit twice as much as women. Equality is not complete: "The text states that a specific text of a will can makes it possible to return to the previous situation" (Gouëset, 2019). If this text is properly adopted, it will strengthen Tunisia's leadership position in terms of the status of women in the Arab world.

Tunisia has always positioned itself as a leading Arab country in protecting women's rights. However, some disparities still exist, particularly in terms of inheritance. The discrimination also limits women's participation in the economy.

Concerning the right of property, according to Tunisian Law number 98-94 of 9 November 1998, relating to the regime of the community of property between spouses, men and women have the same property rights (ownership right, mortgage, and sale). The legislation in force is applied in the same way, regardless of gender. In this context, the joint property system between spouses is a good example of the attention paid by the Tunisian legislation in achieving the equality between men and women (ONU Women, 2014).

3- Equal access to the labor market for Tunisian women

Under international conventions signed by Tunisia and the Labor Code, discrimination linked to different aspects of employment is banned. In fact, Labor laws and regulations Equal access to the labor market and the right to paid employment are essential for the economic empowerment of women.

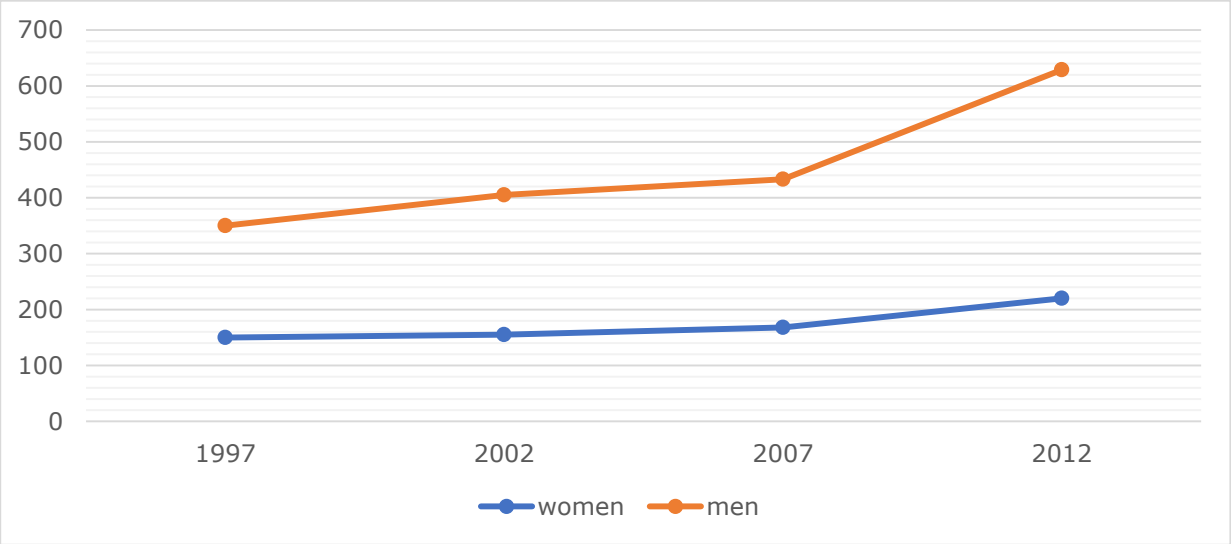

Figure 2. Change in average monthly salary by gender, Source: INS,2015.

They generally face many obstacles that prevent their access to the labor market and undermine their possibility to obtain paid employment and their mobility to access the best jobs, in areas with higher added value such as entrepreneurship (Kabeer, 2012; ILO,2016). Indeed, "laws require that women and men receive equal income for similar work": this equality is stipulated by the Tunisian Labor Code. Likewise, equality for both men and women in terms of recruitment and promotion in the public sector is guaranteed. Although the laws are generally equal, their application is not always guaranteed.

The following graph shows the evolution of the average monthly wage gap by gender (INS,2015), as reported in the 2015 Tunisian Statistical Institute National Report.

The average monthly salary gap between women and men is estimated at -35.5% in 2012 compared to -24.5% in 1997. - In April 2011, the total monthly salary in the private sector was estimated at 458.5 dinars for women and 614.8 dinars for men. Hence, the average wage gap between women and men is estimated at -25.4%. And if we take into account the average salary, the gap between women and men drops to -17%. Statistics Tunisia (ONU women; INS,2015).

Conclusions

This paper provides an overview of the entrepreneurial legislation implemented in the Tunisian economic atmosphere to support female entrepreneurship and reviews evidence on what serve the most in the promotion of women's entrepreneurship in the country. Tunisian policies continue to consider that women enjoy the same rights as men. As a result, national policies and strategies are gender neutral. In particular, there is no policy or institutions aimed at developing female entrepreneurship.

It is therefore necessary to define a national action plan to promote female entrepreneurship. Such an action plan will make it possible mainly to contribute in reducing regional disparities, through the development of projects owned by women in the regions, reduce the weight of the informal economy by training and raising the awareness of women newly launched into entrepreneurship and to contribute to reduce poverty and exclusion, through the promotion of income-generating activities and the inclusion of women from poor backgrounds in the economy.

To release the entrepreneurial potential of women in Tunisia, we must pay attention that after going through the evaluation of various features of literature have abstracted the entrepreneurial decision by labeling some determinants having a vital impact on the decision to create new business. These determinants are notably connected to the external and institutional environment in terms of policies, reforms, or geographical localization (rural or urban area.), we need to emphasis on the determining factors that might limit entrepreneurs in making their own choice.

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CONCEPTUAL PRINCIPLES OF ACHIEVING THE EFFECTIVENESS OF CHANGE IN THE MANAGEMENT OF INDUSTRIAL ENTERPRISES

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JEL Classification: M1

Abstract. The effectiveness of change is a warranty for ensuring the economic security of industrial enterprises and they survival in a highly competitive environment. Currently, there is a rather limited number of theoretical studies of the effectiveness of changes in the management of industrial enterprises, although in practice such changes occur constantly. Therefore, the purpose of the study is to substantiate the conceptual principles of achieving the effectiveness of change in the management of industrial enterprises. The theoretical basis of this includes principles of theories of economic security, sustainable development, change management, and management of industrial enterprises. The information base of the study comprehends scientific works connected to the problem of achieving effectiveness of changes in the management of industrial enterprises. The results of the study summarize several conceptual principles for achieving effectiveness of changes in the management of industrial enterprises, the application of which in rule-making, research, and management activities will improve the quality of regulatory, strategic, and operational support of relevant processes.
Keywords: *industrial enterprise, management, change management, change efficiency, innovation, economic security.*

Introduction

The operating environment of Ukrainian industrial enterprises is quite unfavorable. Low efficiency of national economic policy and insufficient quality of institutional conditions provoke protracted crises, which negatively affect the development of industrial enterprises. In fact, Ukrainian industrial enterprises operate in conditions of constant threats to their economic security. For companies that do not want to disappear from the economic arena, a natural reaction to such conditions is to adapt to adverse conditions. This requires constant changes in production processes, management policies, marketing, and innovation of industrial enterprises. Development of strategic plans and documentary support of changes requires deepening of theoretical ideas in this area.

Therefore, the **purpose** of the study is to substantiate the conceptual principles of achieving the effectiveness of change in the management of industrial enterprises.

Literature review.

Some aspects of the formation and development of change management in industrial enterprises were studied by Bozhanova O. V., Fadieieva H. M., Haidei O. O., Kravchuk A. V., Pererva P. H., Romaniuk O. Yu. and others. In the existing works, however, the conceptual principles of achieving the effectiveness of change in the management of industrial enterprises are not fully formed. Clarification of the relevant principles will contribute to the dissemination of a scientific approach both in the management of change in industrial enterprises and in the process of forming a national strategy for the development of such enterprises.

Research methodology. The theoretical basis of this includes principles of theories of economic security, sustainable development,

change management, and management of industrial enterprises. The research was performed using critical analysis, structural-logical and structural-functional methods.

The information base of the research was the scientific works of Ukrainian scientists in the direction of achieving the effectiveness of changes in the management of industrial enterprises.

Research results.

Industrial enterprise management has significant differences from other types of management. This is due to the peculiarities of the organization of activities and the regulatory framework for the operation of industrial enterprises, as well as differences in the changes that must be implemented in the enterprise to achieve efficiency.

With regard to the separation of industrial from other types of enterprises, we agree with Bandurka S. S., who notes that an industrial enterprise is "an independent, statutory entity operating in the manner prescribed by law and created for the manufacture of industrial works and services for industrial purposes. meeting public needs and making a profit" (Bandurka, 2014, p. 111).

Controlled changes are introduced in an industrial enterprise in order to overcome threats to economic security or achieve competitive advantages in the market associated with the development of such an enterprise.

According to Andriushchenko I. Ye., the main factors that currently have a decisive influence on the development of industrial enterprises include the uneven distribution of industrial enterprises in the regions of Ukraine; use of obsolete technologies and fixed assets inherited from the USSR; low level of innovation implementation; unfavorable conditions for attracting investments; deterioration of the economic situation in the country as a whole and the devaluation of the hryvnia (Andriushchenko, 2017, p. 89).

According to Vasylyshyn T., the main threats to the development of industrial enterprises and the effective implementation of changes include, first of all, the reduction of effective demand of such enterprises for intellectual and scientific-technical solutions, inefficient allocation of financial resources for innovative development. This, the scientist notes, leads to non-competitive products of domestic industrial enterprises in both domestic and foreign markets (Vasylyshyn, 2013, p. 18). Kravchuk A. V., Pererva P. H. note the negative dynamics of indicators of innovation activity of industrial enterprises, which scientists associate with insufficient funding; inflationary processes; problematic attraction of bank funds due to high credit rates; unstable political situation, which causes distrust on the part of foreign investors (Kravchuk, 2018, pp. 64-65).

Conditions for the functioning and implementation of changes in industrial enterprises of Ukraine are characterized by significant uncertainty. We agree with Fadieieva H. M., who states that "The competitive environment of industrial enterprises in modern conditions is characterized by a high level of dynamism of economic relations, and thus a reduction in the planning period of their stable activity. Significant changes in the scale and complexity of the external environment of industrial enterprises increase the uncertainty of making and implementing management decisions of a strategic and tactical nature" (Fadieieva, 2014, p. 182).

Let's take a closer look at the features of management in industrial enterprises. According to Mohylevska O. Yu. differences in the management of industrial enterprises are determined by their features, which include increased technical and technological complexity of production processes; high resource intensity of production and increased qualification requirements for staff; relatively long production cycle; the need for standardization and certification, increased requirements for product quality; the need to apply foreign standards (Mohylevska, 2012, p. 60).

These same features are a factor in the need for change in:

- deterioration of the financial, economic, and institutional climate in the country;
- chain reactions associated with the rupture of established economic ties;
- intensification of competition;
- strengthening the requirements for product quality and safety;
- the emergence of internal problems in the enterprise.

Confirmation of these considerations is found in the statement of Tsukanova V. Ya., Kiienko L. V. that "Accelerating changes in the environment, the emergence of new needs and demands of consumers, changing their

positions, increasing struggle for resources, the emergence of new innovative opportunities for business, development information networks, the widespread introduction of modern technologies, changing the role of human resources, as well as a number of other factors have led to a sharp increase in the importance of change management in organizations and enterprises. Organizations need to initiate and implement changes in order to meet market demand, increase shareholder value to maintain organizational stability, and maintain balanced economic growth and business continuity" (Tsukanova, 2013, p. 25).

Change management belongs to the field of strategic management and, at the same time, requires a very effective controlling system at lower levels. Along with this, the observation of the work of industrial enterprises proves that for various reasons, the real engine of change is competition.

In this regard, Malchyk M. V. notes that the main advantage of competition is the use of the significant potential of market incentives for business activity, which in today's conditions are not fully used, in particular, competition is a decisive stimulus to innovation (Malchyk, 2009, p. 78). In view of this, the interpretation of the content of the change management process proposed by Tsukanova V. Ya., Kiienko L. V. – "is a process that makes it possible for an organization to modify any part of its structure in order to function effectively in a constantly changing environment. It includes actions designed to support, accept and approve the necessary and agreed with modifications and changes" (Tsukanova, 2013, p. 25).

It is in light of the need for rapid innovative growth in highly competitive conditions that the strengths of change management are manifested. In this context, Turchina S. H. notes that effective change management is a complex and necessary task for management. The complexity of the transformation, the scientist emphasizes, necessitates timely and comprehensive changes in the activities of enterprises, in particular, in technologies, management methods, requirements for the competence of specialists, and forms of interaction with the environment (Turchina, 2016, p. 14).

Achieving the effectiveness of change management requires the fulfillment of certain criteria. Bozhanova O. V. to the main conditions of successful change management includes proper organizational, economic and information-analytical support, which will build an effective system of controlling and monitoring change management of the enterprise (Bozhanova, 2016, p. 41).

The effectiveness of change management in an industrial enterprise is achieved and maintained by proper streamlining of internal documentation and its compliance at all stages of change. Mohylevska O. Yu. in this regard, emphasizes that the effective operation of enterprises in a market economy is possible only if the development of business plans, production programs, forecasts of socio-economic development of enterprises, management strategies that should be associated with specific programs of departments (Mohylevska, 2012, pp. 61).

The tasks outlined by Fadieieva H. M .: to establish the compliance of the company's strategy with the organizational structure, infrastructure, and management system should be documented during the formation of the change management system; to determine the principles of innovation policy, its compliance with the goals and market positions of the enterprise; assess the level of innovative development of the enterprise; choose the optimal system of control over the implementation of promising tasks at the enterprise (Fadieieva, 2014, p. 186).

Another important element of effective change management in the industry is related to the work of the manager with the phenomena of resistance to change. As rightly remarks Romaniuk O. Yu. "The process of implementing the strategy of industrial enterprises is always associated with organizational change. Any departure from the routine, the search for new methods and solutions are associated with extreme difficulties. A significant obstacle in the process of change management is the inertia of thinking ... Most employees are simply afraid to go beyond their "comfort zone", thus creating resistance to change" (Romaniuk, 2014, p. 355).

Thus, effective change management in an industrial enterprise is innovative and, at the same time, concerns not only the strategic elaboration and documentation of the necessary changes but also the continuous work with staff. In working with staff on change, it is advisable to use the outlined Haidei O. O. approaches, which, on the one

hand, involve the use of organizational training and the creation of a margin of strength to resist change (Haidei, 2015, pp. 58-59).

Discussion of research results.

The conducted theoretical research testifies to the existence of a number of important conceptual bases, which together form the methodological plane of change management in industrial enterprises. Such principles should, in our opinion, include the following.

1. The main stimulus for change in industrial enterprises in Ukraine at this stage is the threat to their economic security. Under the current difficult financial, economic, and institutional conditions, Ukraine's industrial enterprises are under pressure from numerous threats that negatively affect their economic security. Overcoming these threats is impossible without implementing effective changes based on strategic management.

2. The effectiveness of change management in industrial enterprises depends on taking into account the peculiarities of the operation of such enterprises and the development of a well-thought-out system of regulatory documentation, strategic planning, and implementation of specific measures to ensure their support by staff.

3. The most productive are the changes, the source of which is competition and innovation activity of enterprises. The effectiveness of change management in this area will be facilitated by taking into account the conditions and obstacles to the innovative activity of industrial enterprises in Ukraine.

4. In the internal environment of the enterprise one of the most important areas of ensuring the effectiveness of change is thoughtful work with staff, aimed at highlighting the benefits of such changes and work with criticism or resistance to change.

Conclusions

According to the results of the study, the theoretical principles of ensuring the effectiveness of changes in the management of industrial enterprises are summarized. The key features of industrial enterprise management in Ukraine at the present stage are emphasized. The importance of documenting the strategy and measures related to changes in the enterprise environment is emphasized. The sources of changes are considered and the main conditions and obstacles to their implementation in the management of industrial enterprises are highlighted. As a result, a number of conceptual bases of achieving the effectiveness of changes in the management of industrial enterprises are substantiated.

A promising area of further research is detailing the principles of building a change control system within the management of industrial enterprises.

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ENTERPRISE AS A SUBJECT OF THE INNOVATIVE DEVELOPMENT PROVIDING

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Abstract. The main subjects for the innovative activity implementation in Ukraine, such as significant changes in the external environment that push companies to the usage of the necessary innovations and the strengthening of the directions of their development are determined. The necessity to reorient the company's activities radically to the new needs of consumers with the taking into account of modern requirements is illuminated. The dynamic trends of the regional context of the quantitative Ukrainian enterprises and the share of innovatively active ones inside their structure are identified. The results of the analysis are shown, such as a significant increase in the share of innovatively active companies in the overall structure of all enterprises for a researched period. The conclusions are drawn about the positive dynamics of the quantitative growth of the innovative Ukrainian enterprises and the development of the indicator of their absolute growth to the mark of 10%.
Keywords: *innovation, innovative development, enterprise, innovative activity, innovatively active enterprises, external environment, internal environment.*

Introduction

The innovative activities are now carried out by a fairly large proportion of enterprises and entrepreneurs among all registered. In order to embark on an innovative path of development, enterprises need to constantly conduct the process of improving their activities. By introducing an innovative type of development, businesses thus adapt to changing situations in both domestic and European markets. The transition to the innovative model of development will allow Ukrainian enterprises to achieve the main goals, which will be reflected in meeting both the qualitatively growing needs of the state economy, and personal consumption in the future.

Global economic trends demonstrate the objective need to ensure the innovative development of the enterprise as a prerequisite for its entry into the global competitive environment. The ensuring of the innovative development for Ukrainian enterprises is, in fact, the only prerequisite for their potential entry into the world markets. The innovations can become not only an effective prerequisite for the company's sustainable development, but also a catalyst for building all the components of innovation potential, which in the future will provide their comprehensive **innovative development**.

It should be noted that the direction of innovative development of enterprises is to outline the path or movement to the introduction and implementation of innovations that improve the quantitative and qualitative characteristics of enterprises, strengthen their market position and create conditions for upward development.

Complex civilizational processes constantly outline new tasks for enterprises, and therefore it is important to make the necessary changes in the developmental directions for their successful functioning. Under the conditions of rapid changes in the world markets, the priority is given to the task of radical reorientation of enterprises to the new needs of consumers, taking into account the modern social requirements. However, nowadays domestic enterprises pay not enough attention to the search of innovative activities, which ultimately leads to the loss of markets, untimely response to societal

challenges in the economy, social and environmental spheres. The direction of innovative development of the enterprise is a delineation of a way or movement to introduction and realization of innovations which provide improvement of quantitative and qualitative characteristics of activity of the enterprise, strengthening of its market positions (Zyanko, 2008, p. 34).

As the innovative activity of domestic enterprises becomes the main factor of increasing the competitiveness of both regions and the economy as a whole, so there is an urgent need for it increasing in market conditions. Both the internal and external environments of enterprises are under the influence of dynamic changes and a number of requirements. This is exactly one of the main factors for the study and research of mentioned issue. The innovative development of the state is directly dependent on the level of innovative development of economic entities.

For enterprises the innovation has a targeted function that must meet old needs or shape the new ones. Its implementation inside the production or management process will change their qualitative characteristics as a whole. The greater the mass of innovation, the better the changes in social and production systems. The concept of "innovation" applies not only to technics and technology, but also to all new phenomena in the organizational, financial, educational, scientific, social spheres. Innovative are any improvements that lead to the production level increasing, unit production costs reducing and the life quality improving.

An innovatively active enterprise receives and is able to perceive signals from the external environment and to implement the innovations. If the external environment is conservative, then the changes will be insignificant, or they will not be at all in conditions of weak internal innovation environment. Therefore, the specifics of the innovatively active type of enterprises is that they are driven by the impulses of the **external environment**, which encourage the formation of innovations, and the **internal environment** of enterprises is innovative, i.e. **external signals** are perceived by enterprises and **innovative activities** are carried out in certain areas.

Therefore, the selection of tools and means to ensure the innovative development is of particular importance, as it increases the cost of economic and social consequences of certain decisions and actions taken to their implementation (Mikityuk, 2015, p.8).

Domestic enterprises have to be supported, assisted and stimulated from the state for the implementation of progressive changes in the export commodity structure, searching of new and perspective foreign markets, removing the discriminative restrictions about Ukrainian exports on world markets.

Analysis of basic research and publications. Studies of enterprises and their development were conducted by a number of scientists, among whom are the works of Z. Gutsailyuk, V. Zavgorodny, L. Strembitska, V. Tymofienko, D. Yablonsky and others. Applied aspects of the enterprises innovation development implementation are carried out by domestic scientists, such as S. Ilyashenko, V. Stadnyk, N. Tarnavska and others. Many theoretical questions are revealed in the works of mentioned before researchers, but they concerns only general positions of innovative activity of enterprises. The dynamics of innovative development of enterprises and their determining factors are insufficiently considered by economists. This necessitates an assessment of the growth dynamics of innovatively active enterprises for the period of 2014-2018 as a whole and in terms of the number of employees. The pace of enterprises innovative development determining specifies the impact of both internal and external environment.

Research methodology. Appropriate conditions must be created for the enterprises transition to an innovative path of development (Fig.1). Among them, the main conditions are:

1. Availability of reinforced by purchasing power demand.
2. Ability for implementation of the sciences and technologies achievements.
3. Economic capacity and expediency.

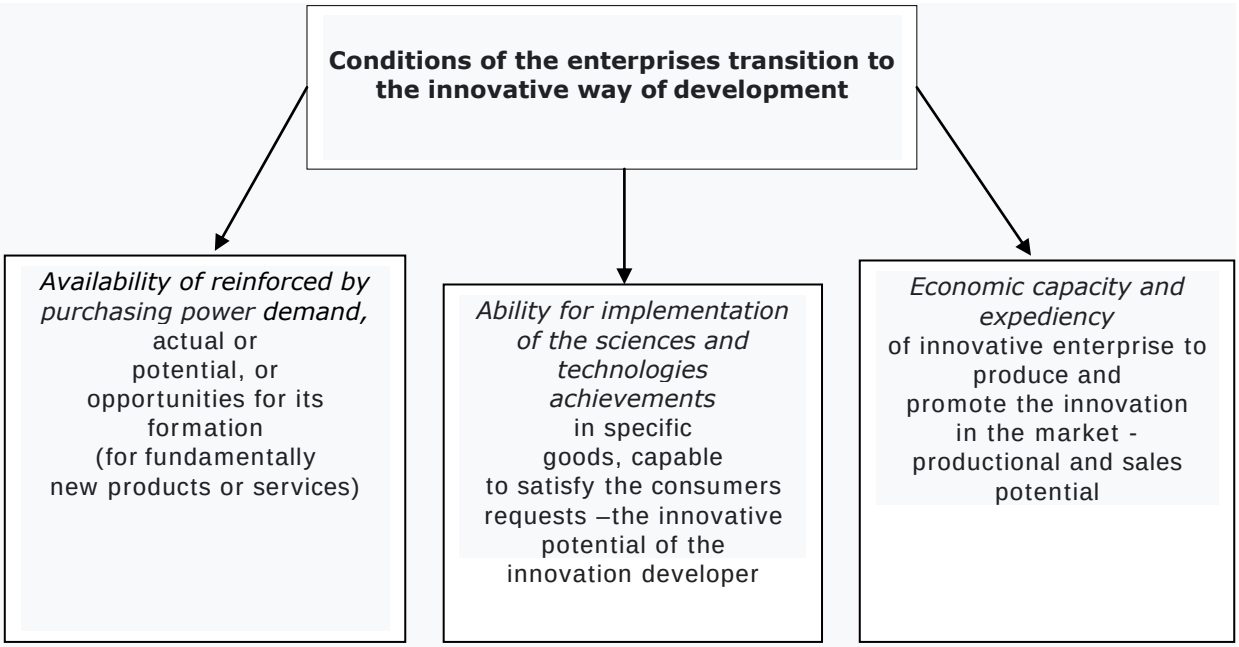

*Figure 1. Conditions of the enterprises transition to the innovative way of development**

** Source: formed according to Androschuk, Zhilyaev, Chizhevsky ed., 2009*

An enterprise that has embarked on an innovative path of development must operate in accordance with the following principles (Mikityuk, 2015, p. 32-33): adaptability, dynamism, self-organization, self-regulation, self-development.

Research results. It is known that the main indicators of innovations are the following: novelty, possibility of modification, possibility of diffusion, progressiveness, competitiveness, adaptability to the new conditions of production, and also indicators of economic, social and ecological efficiency. That is why they affect the final results of the enterprise: the cost and price of products, its quality, sales, efficiency and profitability (Androschuk, Zhilyaev & Chizhevsky ed., 2009).

One of the main goals of innovative development of the enterprise should be to ensure the transition in the shortest possible time to organize an innovative model of enterprise development, resulting in structural and functional changes in the management system, which should enhance the ability to sell competitive products and services to meet growing needs, the country's economy and personal consumption (Mikityuk, 2015, p. 42).

While developing in an innovative direction, businesses have to improve their production base, logistics system, optimize the structure of the distribution network and the system of the goods movement, adapting them to the market situation changes. At the same time, the organizational management restructurization is taking place inside the enterprises, specialists and managers are gaining experience, a system of relations with economic contractors is establishing, an image is creating and strengthening, etc., i.e. the innovation potential is growing (Ilyashenko, 2010).

Regarding the definition and disclosure of the content of an innovative enterprise, in accordance with the Methodological principles on innovation statistics, an innovative enterprise (organization) – is a legal entity that has implemented any innovation for a certain period of time; innovatively active enterprise – is an enterprise that was engaged in activities related to the creation of innovations during the survey, regardless of whether such activities led to the actual implementation of innovations (State Statistics Service of Ukraine. Official site).

Innovatively active enterprises are enterprises that have been engaged in innovative activities. Innovative activity means all the scientific, technological, organizational, financial and commercial actions that actually lead to the implementation of innovations or are designed for this purpose. Innovation also includes research and development that is not directly related to the preparation of a particular innovation.

Currently operating, Ukrainian enterprises have backward technology, their financial condition are deteriorating, which leads to a reduction in innovation costs. But despite these problems, according to the State Statistics Service of Ukraine, the number of innovatively active enterprises is growing by an average of 20-30% in almost all regions of our country. Based on the statistics of 2014-2018 (Number of enterprises by type of economic activity. 2010-2018: stat.collection. State Statistics Service of Ukraine), it was determined the share of innovatively active enterprises in the structure of all enterprises of Ukraine in the regional context (Table 1).

Table 1.

Innovative activity of enterprises in the regional context, 2014-2018*

	The share of innovatively active enterprises in the overall structure of enterprises, %		**Absolute gain 2016-2018 to 2014-2016, % (+/-)**
	2014-2016	**2016-2018**	
Ukraine	18.37	28.05	9.68
region			
Vinnytsia	15.16	24.16	9.00
Volyn	14.39	26.04	11.65
Dnipropetrovsk	18.97	28.98	10.00
Donetsk	11.03	17.92	6.88
Zhytomyr	17.74	23.73	5.98
Transcarpathian (Zakarpattia)	13.82	26.89	13.06
Zaporizhzhia	17.50	28.73	11.23
Ivano-Frankivsk	19.70	27.06	7.35
Kyiv	17.69	30.82	13.12
Kirovohrad	19.32	32.8	13.47
Luhansk	12.59	21.78	9.19
Lviv	18.44	29.13	10.69
Mykolayiv	15.36	20.91	5.55
Odessa	16.32	22.65	6.33
Poltava	18.38	23.56	5.17
Rivne	23.78	17.82	-5.95
Sumy	17.19	25.40	8.21
Ternopil	19.91	31.57	11.66
Kharkiv	23.38	30.09	6.71
Kherson	16.08	26.07	9.99
Khmelnytsky	12.79	23.61	10.81
Cherkasy	11.80	21.70	9.90
Chernivtsi	9.67	20.05	10.37
Chernihiv	16.54	24.39	7.84
Kyiv	21.40	33.73	12.33

** Source: formed according to Number of enterprises by type of economic activity. 2010-2018: stat.collection. State Statistics Service of Ukraine.*

The conducted analysis in the period 2016-2018 comparatively to 2014-2016 showed positive dynamics of the growth of innovative enterprises in the regions of Ukraine as a whole except Rivne

region. The absolute growth rate in Ukrainian overall structure is quite significant, amounting to 9.68%.

The results of performed research make it possible to make the gradation of all regions of Ukraine in relation to the level of absolute growth for certain periods, dividing them into appropriate groups (Table 2)

Table 2.

The Ukrainian regions grouping in relation to the indicator of absolute growth of innovatively active enterprises, 2016-2018 comparatively to 2014-2016, % *

The indicator of the absolute growth of innovative enterprises in the overall structure of enterprises in 2016-2018 comparatively to 2014-2016, %			
High >10% (I group)	**Medium 10%-8% (II group)**	**Moderate 7%-5% (III group)**	**Low <5% (IV group)**
Volyn Transcarpathian (Zakarpattia) Zaporizhzhia Kyiv Kirovohrad Lviv Ternopil Khmelnytsky Chernivtsi Kyiv - city	Vinnytsia Dnipropetrovsk Luhansk Sumy Kherson Cherkasy	Donetsk Zhytomyr Ivano-Frankivsk Mykolayiv Odessa Poltava Kharkiv Chernihiv	Rivne

***** Source: formed according to Number of enterprises by type of economic activity. 2010-2018: stat.collection. State Statistics Service of Ukraine.

This comparability of innovatively active enterprises in comparison to the total number of enterprises demonstrates the innovative development of the concrete region, as it is the business entities that provide high rates of development of cities and entire regions.

Regarding to the classification by average number of employees, so that the quantity of innovatively active enterprises also increase every year in comparison to the previous periods (Table 3).

Table 3.

The enterprises innovative activity classification according to the average number of employees, 2014-2018 *

Total	**Number of enterprises, units**				**Innovatively active enterprises, units**			
	2014-2016		**2016-2018**		**2014-2016**		**2016-2018**	
	27726	**100%**	**29129**	**100%**	**5095**	**100%**	**8173**	**100%**
From 10 to 49 people	20339	75.35	21170	72.67	3020	59.27	5097	62.36
From 50 to 249 people	5702	20.56	6123	21.02	1407	27.61	2140	26.18
250 people and more	1685	6.07	1836	6.30	668	13.11	936	11.45

****** Source: formed according to Number of enterprises by type of economic activity. 2010-2018: stat.collection. State Statistics Service of Ukraine.***

The largest concentration of innovatively active enterprises in comparison to the total number of enterprises is allocated in small business (nearly 62.36% in 2016-2018). Average-sized innovative enterprises for the same researched period showed a value of 26.18%. Large-sized enterprises are characterized by a slight lag, which is 11.45% of innovatively active.

Conclusions

The providing of innovative development of Ukrainian enterprises is, in fact, the only prerequisite for their potential entry into the world markets.

The comparative analysis for a certain period, in general, showed a positive trend towards the growth of innovative enterprises in the regions of Ukraine. The results of the study made it possible to gradate all regions in accordance to the level of absolute growth. On the basement of dividing them into appropriate groups it becomes possible to assess the degree of saturation of innovatively active enterprises in the regions of Ukraine.

The exploration of the innovative potential of enterprises in terms of application of innovations for the sake of their progressive development will be the direction of further research.

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RATING AS A PART OF BEHAVIORAL SCORING OF LEGAL ENTITIES

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Abstract. The article shows what the rating for evaluation of the borrower and indicates the principles of construction the ratings of legal entities is. Main indicators, that characterize the functioning of entities, and their limit values were analyzed. The regularities of the financial indicators were set for the sample according to the ratings. Also, the rule base was built based on fuzzy logic and the criteria that should guide the prediction of the rating of the enterprise in a half year was allocated.
Keywords: *rule base, rate, method rating assessment default, legal entity, borrower, financial indicators.*

Introduction

The assessment of credit risks of the enterprise is a very important issue for the banks, who should evaluate their borrowers. Therefore, it is necessary to determine the financial condition of the enterprise, its weaknesses, as well as the ability to provide a forecast of its activities and the probability of non-repayment of the loan to its creditor.

The possibility of non-repayment of the loan lead us to make a study of the principles, criteria, methods of assessing the effectiveness and financial stability of the borrowers - legal entities.

Literature review. A research among Ukrainian and foreign scientists was made. Problems of credit risks were described by: V. Vitlinsky, V. Kochetkov, O. Lavrushin, M. Messer, O. Pernarivsky, I. Pasichnyk, J. Sinki, I. Fischer and others. These scientists have created a theoretical basis for solving the problem of credit risks. However, in my opinion, the proposed approaches do not fully take into account the need for future prediction of the borrower's rating, for which it is necessary to determine the list and values of financial indicators.

Research methodology. The purpose of the article is to develop a methodological approach to rate the borrowers - legal entities. To achieve this goal we need to find solution for the following research tasks: determining the economic essence of the borrower's rating; generalization of domestic and foreign experience in rating borrowers - legal entities; improvement of the existing rating policy (used by one of the Ukrainian banks); development of economic and mathematical models for assessing the risk of bankruptcy and forecasting the default of the borrower; experimental study of the adequacy of models to assess the rating of an individual borrower in six months.

Research results. Based on the data from the balance sheet and the report on financial results, the financial indicators were calculated and their values were found. After that it is possible to form a rule base for determining the rating of borrowers - legal entities.

Rating (assessment, assignment to class, category) is an assessment of the position of the analyzed object on a scale of indicators. Our model was built on the basis of the rating scale of the one of Ukrainian bank. The rating scale consists of 12 main categories, according to which counterparties are classified into 2 groups: performing (categories 1 - 10) and non-performing (11 - 12). In turn, performing clients are divided into two classes: investment (categories 1 - 5) and non-investment class (6 - 10).

This rating scale is quite flexible. It allows you to increase with a sign "+" or decrease with a sign "-" ratings of counterparties in categories from 1 to 10. This contributes to a better differentiation of companies within one category. For example, category 1 consists of 1+, 1 and 1-, etc.

The methodological approach that we will use for establishing the borrower's rating is based on the theory and methodology of comprehensive analysis of the enterprise. The final rating of the borrower takes into account all the most important parameters (indicators) of financial and economic activities that characterize the production potential of the borrower, profitability of its products, efficiency of production and financial resources.

Also, the methodological approach that we will use is comparing the system of indicators which characterize the financial and economic condition of the borrower, with the conditional reference borrower, who has the best results on all comparable indicators.

Step 1. We take historical data for legal entities for the beginning of year X and the same legal entities for the mid-year.

Step 2. We are choosing the maximum possible number of financial indicators to cover as wide range as possible. We took 60 indicators (depreciation ratio of fixed assets, inventory coverage ratio, etc.). The assessment of financial condition can be objectively carried out not through one, even if it the most important indicator, but only with the help of a system of indicators that can characterize in details the economic situation of the enterprise.

Step 3. We sort our surveyed companies according to the bank`s rating, and for clarity we build graphs for each coefficient to see the relationship between the values of indicators, ranging from the highest value of the rating to the lowest. Divide the plane of the chart into three parts - to the hatched vertical line (as shown in Fig. 1 and 2) of the enterprise with an investment rating, between the hatched and solid - with non-investment, and after a solid – default enterprises.

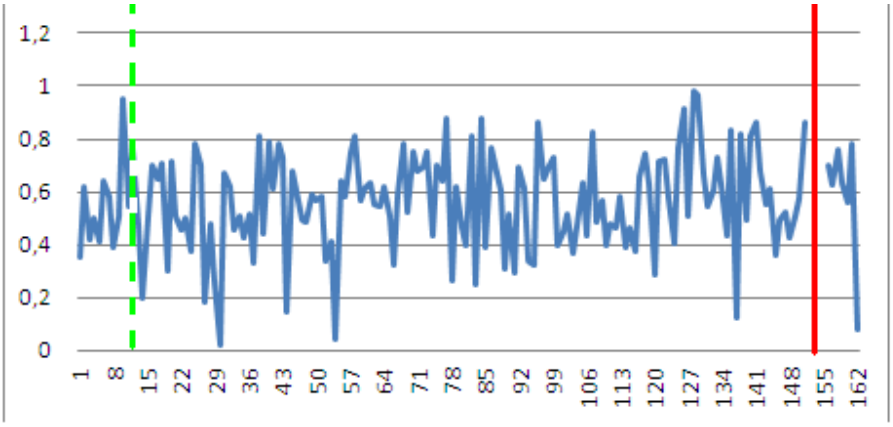

Figure 1. Disposal rate of fixed assets

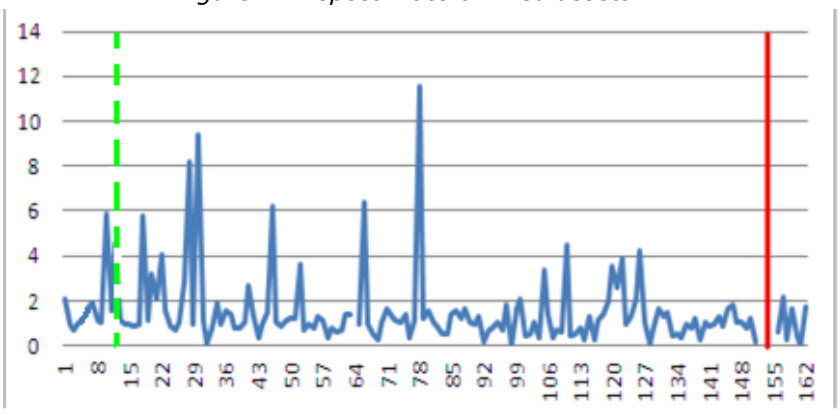

Figure 2. Coverage ratio, or current liquidity ratio

Step 4. We must select the most informative indicators and discard all uninformative ones in order to avoid overloading the model.

So, we rated, sorted and plotted our borrowers. As a result, we obtained two groups of graphs. The main part of then are not informative at all, there is no distinction between bankruptcies and stable enterprises, as, for example, we can see at Fig. 1.

Only 17 of the 63 indicators (namely: liquidity solvency ratio; return on assets; estimated solvency ratio; financial dependence ratio; ratio of own and borrowed funds; resource return, or

turnover of enterprise assets; turnover ratio of accounts payable; capital ratio of accounts payable; renewal of fixed assets, the main indicator of profitability, the ratio of monetary solvency (absolute liquidity), return on total capital, turnover of mobile funds, return on resources (assets) of the enterprise from operating income, the share of fixed assets in the assets of the enterprise, critical liquidity ratio, coverage ratio, or current liquidity ratio) have a certain distinction between bankruptcies and stable enterprises, as, for example, we can see at Fig. 2. But this is still a large number of input factors to build a model, so let's move to the next step.

Step 5. To select the most informative indicators, we will try to analyze them not only graphically, but also taking into account the accuracy of the value of the indicator in each group.

We find a conditional boundary between stable and default enterprises. Draw this limit (as, for example, in Fig. 3) and calculate the error: how many stable enterprises fell into the group of defaults, and how many defaults have the value of this coefficient as in stable enterprises.

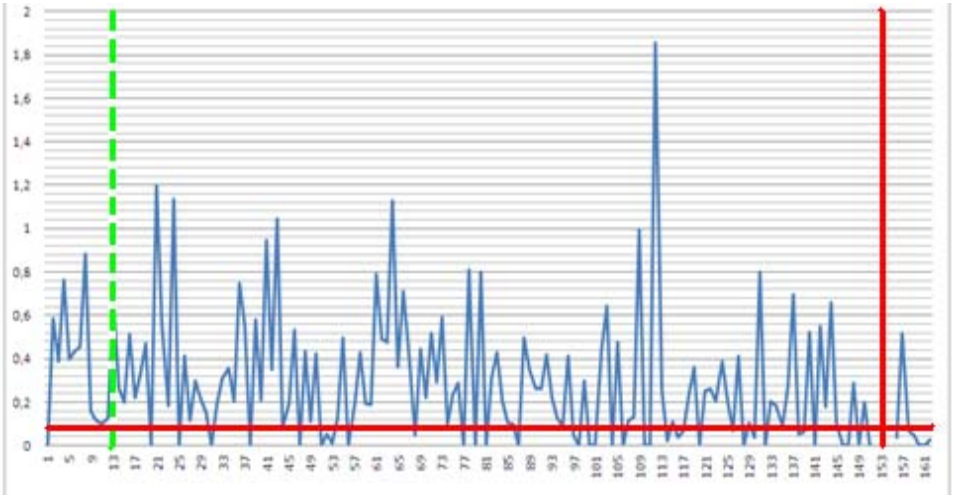

Figure 3. Return on total capital

Fig. 3. Shows the following borders: to the dashed vertical line of the enterprise, we have enterprises with an investment rating, between the dashed and solid vertical - with a non-investment, after a solid vertical - default. A solid horizontal line is the boundary which separating the value of the coefficient for stable and default enterprises.

Let’s take a look at the example of the coefficient of return on total capital. When the limit value of the coefficient is set at 0.07 units, we get an accuracy of 83% (only 6 out of 35 "good" borrowers will fall into the group of defaults). If we move the limit (solid horizontal line at Fig. 3) up, for example, to a value of 0.1, the error will be 66% (i.e., 12 out of 35 stable borrowers will fall into the group of defaults). And if we move the limit down, for example, to a value of 0.05, then also 6 of the 35 stable borrowers will fall into the group of defaults, but 2 default borrowers will fall into the group of defaults.

Therefore, the value of the limit at 0.07 gives the smallest error. Also here it is possible to trace some dependence - the smaller the indicator, the greater probability of default of the given legal entity.

Based on the selected indicators, we will build a rule base. We need to "teach" the system to make correct predictions about the rating. To do this, we are using a model based on fuzzy logic. This choice was made precisely because in our case there are no clear boundaries between the values of indicators, and we set them only on the basis of the above statements. Subsequently, when building the model, these limits can be adjusted.

At this stage, we have selected 8 indicators that with a probability of at least 70% shows what the borrower's rating will be in six months, taking in account data from the balance sheet and statement of financial performance today.

However, not all the coefficients could be divided by one clear boundary (as at Fig. 3), so the set had to be divided not into two (stable and default), but into three groups - stable, default and indefinite, as shown at Fig. 4.

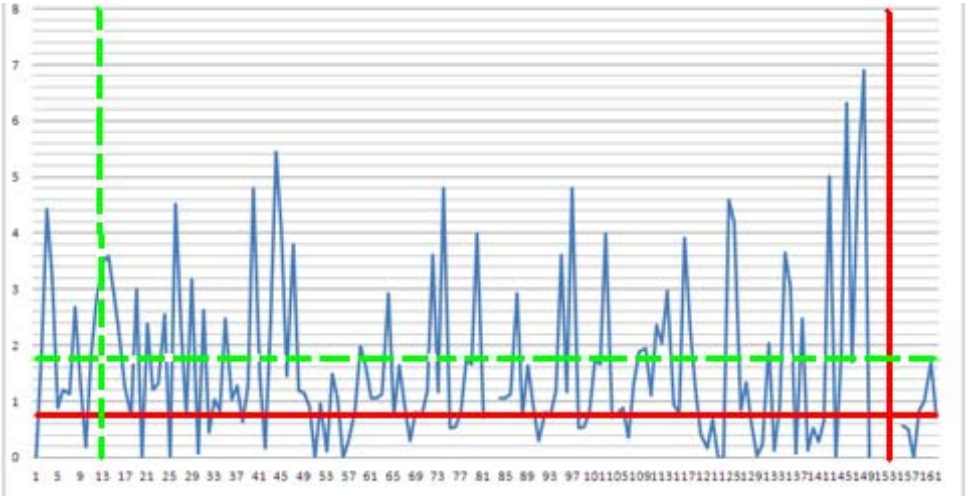

Figure 4. Mobile funds rotation

The following distinctions are shown at fig.4: to the dashed vertical line – we can see enterprises with an investment rating, between the dashed and solid vertical - with a non-investment rating, after a solid vertical - default. To the continuous horizontal line - default enterprises, between the continuous horizontal and dashed horizontal - are not defined enterprises, above the dashed horizontal – stable ones.

As a result, 8 coefficients out of 63 financial indicators have reached the final sample. For the convenience, we will put them in one table.

Table 1.

The value of financial indicators for the forecasting the rating of the enterprise in six months

№	Indicator
1	Liquidity solvency ratio
2	Estimated solvency ratio
3	Ratio of own and borrowed sources of funds
4	Resource return, or turnover of enterprise assets
5	Accounts payable turnover ratio
6	Fixed assets renewal rate
7	Return on total capital
8	Mobile funds rotation

Step 6. To build a rule base, we first need to define the boundaries of the terms of belonging function for each indicator.

A term is an any element of a term set. For example, if the system load can be high, medium and low, then "system load" is a linguistic variable; linguistic scores "high", "medium", "low" are terms which together form a term set. The term is described by a fuzzy set using the belonging function. The belonging function is a function that allows to any element of an universal set to determine its degree of belonging to a fuzzy set.

For example, according to the indicator of "turnover of mobile funds" we will draw the boundaries - to the value of the indicator of 0.75 units we will refer it to the low term, from 0.75 to 1.7 - to medium, and above 1.7 - to high. In the MS Excel environment, this is described using formulas such as =IF(selection2!M5<base!L3;"H";IF(selection2!M4<L5;"C";"B")).

Now, for the each company we pull its rating in a six months to build a rule base for the model, which will not just refer the company to the correct rating, but which will predict its rating in six months. So, we will teach our system to make forecasts based on the developed rule base.

If we go over all the values from the existing knowledge base, we get 147 rules (according to the number of enterprises that we took for analysis). Among them, of course, some rules are repeated. We get 83 unique sets (high, medium, low) among the described terms, but this is too much as for set of rules for building a model.

We take only those crucial rules which are repeated for several borrowers (because unique combinations of values should not be interpreted as rules).

After such elimination we have 24 rules left. Next, we analyze each rule. The sample will include only those that meet the following criteria:

- if this rule shows that having the described set of values of financial indicators, a high rating needs to be assigned to the company, the described set of values should not be performed for a borrower with a rating of default or close to default, and vice versa (otherwise, this rule can not be considered as reliable);
- the more number of borrowers has this rule fulfilled - the more reliable it is;
- we prefer the rules that are performed for borrowers who have a certain dynamics of rating change in a six months diapason, over those whose rating remained the same (if the rule of getting to the high term is for a borrower who had, for example, an average rating, and in a six months his rating became high, the rule can be considered reliable).

Discussion of research results. As a result of the analysis, we obtained a rule base, consisting of 6 rules given in table. 2.

Table 2.

Knowledge base for rating assessment of borrowers - legal entities

Here, H-the low term, C-medium and B – high.

Linguistic values of input indicators								Rules weight	Output variable
X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	w	Z
H	H	C	H	H	H	H	H	w_1^H	H
B	C	H	C	B	H	H	B	w_1^C	C
C	C	H	H	H	B	H	B	w_2^C	C
H	H	H	H	H	B	H	B	w_3^C	C
B	C	H	B	B	B	B	B	w_1^B	B
B	C	B	B	B	B	B	B	w_2^B	B

This rule base now can be used by the bank in everyday life for rating and provision making. And the model of detecting the rules is easy in implementing, needs Excel only, so no additional costs for software is needed.

Conclusions

This article proposes a methodological approach for building a knowledge base for further modeling of the rating forecasting system, as well as the possibility of non-repayment of a credit by borrowers - legal entities. In forming such approach, an analysis of real data was performed. The existing rating policy (used by one of the Ukrainian banks) was improved and the adequacy of the models to assess the rating of an individual borrower in six months was experimentally investigated.

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LOGISTIC PROCESSES IN SMALL ENTERPRISES

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Abstract. The article describes the main logistics processes occurring at the enterprise. The application of Porter's model in the assessment of processes occurring in the supply chain is described. A typical supply chain and its shortcomings are described, as well as ways to improve it. The main business processes of the supply chain have been identified and those related to logistics processes have been identified. Reengineering is proposed as a method of improving pre-business processes in the supply chain, which consists of numerous enterprises.
Keywords: *logistic processes, business process, supply chain, reengineering, Porter's model.*

Introduction

Manufacturing companies create value by buying raw materials and using them to produce something useful. Retailers combine a range of products and present them in a customer-friendly way, which is sometimes supported by services such as premises selection or the advice of personal consultants, and insurance companies offer policies for customers who sign insurance policies for large sums. Here, they present this larger policy in a consumer-friendly way and distribute it to a mass audience.

Literature review. The issue of logistics processes in small enterprises has been studied by many scientists who have studied logistics management (R. H. Ballou, D. J. Bowersox, D. J. Closs, J. R. Stock, D. M. Lambert) and supply chain management (W. C. Copacino, R. B. Handfield, E. Z. Nichols), but there are still many questions about the functioning of logistics processes in small enterprises.

Research methodology. Processes occurring in the supply chain should be evaluated using the Porter model. It is important to determine which of the main processes can be fully or partially outsourced, while ensuring high performance and building partnerships.

Research results. A typical supply chain as a poorly formalized structure is not a very stable formation of integrated enterprises and can be characterized by different levels of integration, ranging from harmonization of goals to the integration of resources and concentration of power. It is usually advisable to take into account intermediate levels of integration of enterprises in the supply chain on the basis of a balance of freedom of action and restriction of freedom of action. Therefore, poorly structured and poorly formalized supply chains makes it difficult to identify business processes for which it is advisable to apply a restructuring mechanism. This problem for ordinary enterprises, even integrated, but on the basis of joint ownership with the control center, arises in the creative stages, which is not the case with supply chains with blurred boundaries of ownership, freedom, authority, etc. of their participants. The situation is similar with regard to the restructuring of enterprises for certain reasons, to apply standard, repeatedly verified procedures.

It is expedient to identify business processes in the supply chain on the basis of their correspondence and influence on the effectiveness of the supply network. The effectiveness of the supply chain by analogy with a more strictly organized supply chain can be assessed using the following criteria: in the internal profitability of the network; customer service (availability of products); elasticity in relation to demand; product development (innovation); environmental friendliness of the network (Copacino, 2017).

Logistics business processes are broadly focused on all areas of network entities and operate in close contact with material, information and human flows between each of the entities, which in one way or another is aimed at network development. These include raw material suppliers, manufacturing companies, intermediaries, logistics centers, distribution centers. The human resource of the network is the added value of each business process, the effectiveness of which will depend on the timeliness, accuracy, completeness, ability to properly process the transmitted information.

In fact, based on the given criteria for the impact on their level to a greater or lesser extent affect business processes according to their division in the theory of Porter's value chain, in the theory of reengineering, but often such influence is multidirectional. and between parts of a separate business process. The separation of business processes with a focus on achieving certain criteria for evaluating the effectiveness of the supply chain completes the first stage of restructuring business processes in the supply network.

Given the added value in the formation of systematic processes, it is proposed to apply the mechanism of reengineering of logistics business processes (Tab. 1).

The highlighted algorithm of business processes of a logistical nature significantly enhances the importance of the processes of improvement and transformation of logistics business processes, and structures the decision-making process in a phased format. Reformatting of logistics business processes is designed to improve and enhance the stability of the relevant system. Helps increase its adaptability to dynamic changes (Handfield, 2018). Transformation of all key logistics flows: material, information, financial, human in the framework of reengineering allows you to direct logistics business processes to the process of holistic optimization, trust between chain participants and increasing the level of end-user service.

Table 1.

Stages of reengineering of logistics business processes *

<table>
<tr><th colspan="3">Stage 1</th><th>Stage 2</th><th>Stage 3</th><th>Stage 4</th></tr>
<tr><td colspan="3">Planning and identification of business processes within the phase division of logistics</td><td>Organizing the restructuring of logistics business processes based on reengineering</td><td>The process of direct restructuring of logistics business processes</td><td>Regulation of reengineering rest ructuring of logistics business processes</td></tr>
<tr><td>Supply logistics</td><td>Production logistics</td><td>Sales logistics</td><td>Forming a team of performers</td><td>Assessment of the fact's compliance with the process plan</td><td>Making adjustments to the bottlenecks of new business processes</td></tr>
<tr><td colspan="3">Assessment of bottlenecks</td><td>Distribution of job responsibilities</td><td>Phase analysis of business processes</td><td rowspan="2">Development and implementation of a motivation system for employees</td></tr>
<tr><td colspan="3">Setting goals for business process reengineering</td><td>Stress test of the existing system</td><td rowspan="2">Analysis of the level of satisfaction of partners and employees</td></tr>
<tr><td colspan="3">Identification of specialists</td><td>SWOT analysis</td><td rowspan="3">Evaluation and, if necessary, taking measures for process safety</td></tr>
<tr><td colspan="3">Forming a business plan for reengineering</td><td>Assessment of the market situation</td><td rowspan="2">Evaluation of system efficiency</td></tr>
<tr><td colspan="3">Risk analysis</td><td>PEST analysis</td><td>Providing a system of continuous improvement of logistics business processes of both your company and partners</td></tr>
</table>

** formed by the author*

In general, analyzing the results of the reengineering of logistics business processes of the studied subject, the level of results can be characterized on the basis of assessment: the volume of changes in the duration of logistics operations; the presence and number of errors in the organization of financial, informational, material and human flows; the ability of the system for short-term changes in the functional state with a subsequent return to the usual format of operation. This kind of analysis makes it possible to assess the risk readiness of the system and its ability to adapt quickly; the level of reduction of financial costs; the level of structure of the organizational structure of the company and the lack of duplication of responsibilities; increasing the level of cooperation between participants in logistics business processes; opportunities to ensure coordination of activities, and in the case of the involvement of information technology - opportunities for comprehensive synchronization of important business processes (Robeson, 2018).

The format of cooperation may be different, depending on the area in which the transfer of functions, the degree of integration of the enterprise and the outsourcer, and so on. An exceptional synergy effect can be cooperation with this company, which will integrate logistics business processes into a single system, thereby reducing the level of distrust of cooperatives, as well as increase the added value of each phase of logistics: supply, production and sales. Outsourcing can also be divided into the following forms of application: full and partial outsourcing; compatible outsourcing; integration outsourcing; intermediate outsourcing; transformational outsourcing; joint venture outsourcing; outsourcing with a share in the share capital; outsourcing on the basis of cooperation (Langford, 2019).

The main forms of partnership in the reengineering of logistics business processes include:

By volume of responsibilities: full and partial.

In the conditions of full partnership the activity is carried out on a parity basis and the control over realization of the set tasks is formed equally; Under the conditions of a partial format of cooperation, only certain structural subdivisions are integrated into a single system, which is usually entrusted with the administrative function and reporting to the relevant partner on the implementation of the set tasks.

By the nature of the changes: improvement and reengineering:

Under conditions of improvement, the perception of logistics business processes in the format of non-ideal systems, which can be constantly improved (Kaizen philosophy). In the situation of reengineering, activities are aimed at the radical transformation of business processes, and in some cases the creation of completely new processes.

By geographical affiliation: local; regional; interregional and international type of partnership:

A format of cooperation that involves local activities, within a particular region or regions, or with operational activities in other countries.

By partnership term: short-term and long-term:

Usually business process reengineering is a long process that radically changes the functioning of the enterprise and partners involved in the formation of supply networks. However, quite often, due to the high risks and significant costs of reengineering all logistics business processes, companies focus on local (small) processes that can be carried out in short periods of time, at relatively low cost and assess the ability to cooperate with partner in the format of changes (Bowersox, 2016).

The supply chain is always a complex union both from the standpoint of material flow management and from the standpoint of cooperation between the actors in the supply chain. This type of enterprise is: the presence of a unique structure of the hierarchy, where on the one hand provides freedom of action, and on the other provides clear control over the highest structural element; well-coordinated units of different actors in the supply chain, where the number of tasks that arise during the implementation of operational and tactical tasks is solved on the spot. the presence of relationships that are built on trust and partnership; coordination and synchronization with the use of information technologies are clearly standardized processes with a clear algorithm of actions for all participants in the supply network; market relations function; cooperation is ensured, in particular, by sharing not only its own assets and common information environment, but also by providing its own funds to ensure the

effect of synergies and economic benefits; specialization is the main factor of success, which clearly prevails in logistics business processes.

In summary, logistics networks unite the subjects of the logistics system, as elements of the generators of the movement of material, financial, information and human flows. Business process logistics, as a complex set of actions combined into one system, the goal of which is to achieve, taking into account the optimality factor of logistics goals, is always extremely integrative. Integration into a single system allows companies with minimal losses to resolve conflicts in the logistics chain, to attract additional finance on a more efficient basis, more consumer-oriented to form a strategic marketing.

The integrated logistics system provides for: coordinated planning of cooperation with consumers; logistics customer service; order implementation management; ensuring efficient logistics of all production, warehousing and distribution processes; integration of inventory management processes between all actors in the supply chain; joint control and settlement of deviations in the product life cycle from the standpoint of logistics; availability of a well-thought-out management strategy for reverse logistics and waste logistics (Stock, 2018).

Table 2 compares simple logistics systems and systems that involve close cooperation and sometimes integration into the system of all logistics business processes.

Table 2.

Features of the formation of logistics business processes in terms of cooperation in the form of partnership or outsourcing *

Properties		Partnership	Outsourcing relationships
Type of flow	Material	Complementary flows	The streams are clearly separated
	Information	The only information network, possible failures at certain intervals due to the merger.	Close integration of certain information systems. Usually due to the specialization of enterprises avoids the mistakes inherent in the partner.
	Financial	There is a great interest in investing in partner competencies	Flows exclusively according to the contract
	Human	Close cooperation of employees, sometimes exchange of specialists	Mutual learning in certain areas, hierarchical cooperation
Relationship format		Contractual, complementary	Contractual, built on specialization
Crisis resolution		Together, compromise	Jointly or exclusively under contract
Purposes		Synergy	Specialization
Willingness to reengineer or change based on Kaizen		High	Rather low

** formed by the author*

Reengineering of logistics business processes also allows for more efficient selection of supply chain participants. Usually the selection of potential partners in the supply chain is based on the analysis of their ability to meet the goals of the enterprise, but in the case of reengineering processes is also assessed for their ability to make radical changes, including for significant synchronization of business processes. Very often the involvement of additional partners allows to expand the scope of activities, to meet the needs of consumers in a more differentiated way. The process of analysis of partners in the supply chain can not be clearly determined due to diversity as forms of management, goals, consumer needs, features of existing interpersonal relationships, but the analysis must be carried out and based on it must select partners to reengineer business processes. who will not be able to this process (Ballou, 2018).

Discussion of research results. Given that the analysis of supply chain entities is carried out in order to increase the level of competitiveness of all its participants, important factors for choosing who to conduct further reengineering are: clear specialization

of the enterprise, which fully corresponds to the life cycle of the analyzed business process; the presence and level of conflict resolution; the level of structuring areas of responsibility; availability and / or readiness to deploy an information system to ensure the continuity of information flows in the analyzed business process; partially mutually cooperative logistics business processes, which involve incomplete interconnection and partial differences in goals; partner companies that redirect available own assets for the implementation of relevant orders, thereby implementing the required level of efficiency in small periods of time; there is diversity in certain areas of activity; the volume of cooperation is not significant; mutually cooperative logistics business processes, which in turn require changes and improvements in existing relationships within certain logistics business processes; fully integrated participants in logistics business processes, the goals of which completely coincide, partners of this type complement each other, well-established processes of joint use of movable and immovable property, information flows move without additional obstacles, and are almost always open, planning processes are both strategic and usual tactical take place with the participation and taking into account the needs of all participants in supply chains.

Conclusions

Given the dynamics of market conditions, and therefore the risk of reengineering logistics business processes, the lack of guarantees of full readiness of partners for structural change, openness and trust is important to choose the type of partnership, as well as format (if necessary) outsourcing, type of enterprise and them relationship. However, the opportunities that open up for companies in the case of reengineering supply chains on an outsourcing or partnership basis are significant, and planning and trust builds to eliminate the possible risks of achieving the company's goals.

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COMPETITIVE POSITIONS OF PRODUCTS FROM UKRAINIAN AGRICULTURAL ENTERPRISES IN EU MARKETS

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JEL Classification: Q12SECTION "ECONOMICS".

Abstract. The article describes the directions for i mproving the competitiveness of the agro-industrial complex. The place of agriculture in the economic system of the country is substantiated. The methodological approach for calculating the level of comparative advantages of agricultural products in the EU markets has been applied. The index of comparative advantages of the products from Ukrainian agricultural enterprises in the European markets was calculated. The classification of agricultural products was carried out according to the level of comparative advantages.

Key words: *products from agricultural enterprises, agricultural sector, comparative advantages, development.*

Introduction

Improving the competitiveness of the national agro-industrial complex involves the sustainable functioning of all its interconnected subsystems: agro-industrial production; food markets; sale, distribution and consumption of food; personnel, financial, logistical, technological, informational and scientific support. However, in modern conditions, the functioning of agricultural enterprises is accompanied by a number of problematic aspects that significantly hinder their forward-looking development. In the context of European integration, there is an objective need for the formation of effective mechanisms to strengthen the competitive position of Ukrainian enterprises, both at the agricultural sector in domestic and foreign markets.

Purpose of the work is to determine the competitive positions of products from Ukrainian agricultural enterprises in EU markets.

Literature review. Many works of domestic and foreign scientists are devoted to the problems of development of agricultural enterprises in the conditions transformations of the agro-industrial complex, in particular L. Abalkin, P. Haidutsky, V. Heitz, F. Gorbonos, M. Zubets, G. Kaletnik, I. Kirilenko, M. Kropivka, M. Malik, M. Pugachev, P. Sabluk, M. Fedorov and others.

Research methodology. In the context of European integration, it is important to determine the competitive position of domestic agricultural products in EU agricultural markets. To calculate the level of comparative advantages of agricultural products, we used the methodological approach proposed by the market analysis sector of the UNCTAD / WTO International Trade Center in the French Research Center for Forecasting and International Information (Fedoryshyn, 2007, p. 6):

$$RCA = \frac{1000}{(X_i + M_i)} * \left((X_{ij} - M_{ij}) - (X_i - M_i) * \frac{(X_{ij} + M_{ij})}{(X_i + M_i)} \right),$$

where X_{ij} – *the volume of exports* by *j*-branch (products of enterprises from the agricultural sector) of the *i*-th country to the EU countries; M_{ij} – volume of imports of*j*-branch (products of enterprises from the agricultural sector) of *i*-th country from EU countries; X_i – *total exports of the i*-th country to the EU; M_i – *the total volume of imports of the i*-th country from the EU.

If, according to the results of the calculations, the Revealed Comparative Advantage (RCA) is bigger than 1, then the country has a competitive advantage over others. The growth of the index confirms the increase in its value in the export structure.

The indicators of foreign economic activity of agricultural enterprises by main types of agricultural products was the basis of the assessment (table. 1).

Table 1.

Foreign economic activity of agricultural enterprises by main types of products

	2013	2014	2015	2016	2017	2018	2019
Exportation (thousand US dollars)							
Meat and edible offal	1116,8	51973,7	66507,4	70190,9	136406,5	237549,5	198164,6
Fish and crustaceans	7215,2	9133,9	8612,5	9091,8	20174,9	18589,1	23709,9
Milk and dairy products, poultry eggs, honey	41864,9	69424,3	84299,1	92401,5	120819,4	116177,9	117573,9
Vegetables	22702,5	23915,4	11890,9	19955,7	35672,6	92281,3	70399,7
Edible fruits and nuts	82451,0	88905,0	87536,6	85190,0	139214,8	152927,8	161463,2
Cereals and grains	1719275,1	1805431,6	1625849,5	1278396,8	1709341,8	2223132	2628520,4
Flour Milling and cereal Industry Products	8293,8	10204,5	14330,8	15759,2	18282,3	25047,6	23678,4
Seeds and fruits of oilseeds	1247637,7	919003,2	645289,0	607027,7	1095171,6	1163531,7	1539434,1
Fats and oils of animal or vegetable origin	500500,1	792967,2	678335,7	1204266,8	1475659,4	1143823,4	1544502,7
Ready-made food products	775925,4	899322,9	762111,2	703422,5	865181,6	908515,4	942493,2
Importation (thousand US dollars)							
Meat and edible offal	305156,4	177826,3	94209,3	78152,8	108367,7	157375,5	146855,9
Fish and crustaceans	106757,8	93974,6	49589,9	67924,9	78284,7	97020,8	117425,6
Milk and dairy products, poultry eggs, honey	133465,3	98735,1	65191,3	55140,1	80158,0	101092	163300,6
Vegetables	62092,5	63802,7	22163,4	23363,7	24024,3	28955,7	60996,2
Edible fruits and nuts	257409,3	172581,9	104864,9	84364,1	95956,1	75315,8	117951,7
Cereals and grains	221259,2	266309,7	103879,1	105630,6	113002,6	117247,7	117688,5
Flour Milling and cereal Industry Products	7815,3	6050,5	4570,0	7191,1	8556,2	10816,6	12457,9
Seeds and fruits of oilseeds	145587,5	119531,5	82665,9	110584,8	128829,3	140755,1	139799

Fats and oils of animal or vegetable origin	104499,8	72854,6	47894,5	55982,7	53079,5	59959,2	68899,4
Ready-made food products	1411532,9	1197624,0	777186,7	971449,5	1161883,5	1444842,1	1683983,3

Source: formed according to (Official website of the State Statistical Service of Ukraine; Official Internet Representation of the Ministry of Trade, Agriculture and Agriculture of Ukraine).

Discussion of research results. Despite significant scientific achievements, a number of strategic issues important for the development of agricultural enterprises, in particular related to European integration, remain insufficiently researched challenges of their competitive positions, which determines the relevance of the topic of the article.

Research results. The functioning of the agricultural sector of Ukraine is characterized mainly by positive dynamics, where the following trends are revealed (Table. 1.):

– increase in the number of employed population from 2860.7 thousand people in 2017 to 3010.4 thousand people in 2019 against the background of reducing the number of hired employees from 515 thousand people in 2016 to 463.2 thousand people in 2019;

– the gradually increases in the average monthly salary of employees from 143.7 US dollars in 2015 to 338.1 US dollars in 2019;

– the reduction of capital investments in 2019 (USD 2,265.6 million) after their gradual growth during 2015-2018;

– increasing the volume of gross value added in agriculture from 10,946,6 million USD by 2016 to 13,854 million USD in 2019;

– sharp increase of fixed assets from 8045.6 million US dollars in 2015 to 15458.2 million US dollars in 2019.

Table 2.

Dynamics of the main indicators at the agricultural sector for 2015-2019.

	2015	2016	2017	2018	2019
Number of employed population (thousand people)	2870,6	2866,5	2860,7	2937,6	3010,4
Number of hired employees (thousand people)	502,7	515,0	490,9	481,4	463,2
Average monthly salary of employees (US dollars)	143,7	153,3	216,6	263,5	338,1
Capital investments in agricultural sector (million US dollars)	1341,7	1943,5	2383,8	2391,8	2265,6
Ggross value added (million US dollars)	10977,8	10946,6	11428,1	13278,2	13854,3
Fixed assets (million US dollars)	8045,6	9958,4	12327,1	15458,2	–

Source: calculated according to (Official website of the State Statistical Service of Ukraine; Official Internet Representation of the Ministry of Trade, Agriculture and Agriculture of Ukraine).

The role of the agricultural sector in the country's economy is rising:

– the share of agricultural production in GDP was 10.1% (in 2018);

– the exports of agricultural products reached 18.618,6 billion US dollars (in 2018), which was 39.4% of total exports;

– net profitability of agricultural enterprises has reached 13% (in 2018), while the average level of profitability of enterprises of other types of economic activity was 4,5%;

– labor productivity per 1 person employed in agricultural production was 314 thousand UAH (at constant prices in 2010) in 2018.

Ukraine's place in the world food market is rather high, which is confirmed by the leading positions in many types of agricultural products, in particular: sunflower oil and sunflower seed meal - 1st place; rapeseed - 2nd place; walnuts - 3rd place; corn, barley, rye, honey, sorghum - 4th place; wheat - 5th place; rapeseed flour, butter - 6th place; rapeseed oil, poultry, soybean - 7th

place; oats, milk, soybean oil, soybean meal - 8th place; skimmed milk powder - 9th place; cheese - 10th place [3].

According to the assessment results, 3 groups of agricultural products were set apart, namely: 1) with high level of RCA; 2) with medium and low level of RCA; 3) with no RCA values (table 3).

Table 3

The calculations results of the Revealed Comparative Advantages of products from Ukrainian agricultural enterprises in European markets

	2013	2014	2015	2016	2017	2018	2019
High level of RCA							
Cereals and grains	45,09	46,24	58,68	43,65	45,69	52,36	60,45
Seeds and fruits of oilseeds	32,99	23,91	21,95	18,99	27,93	25,70	34,00
Fats and oils of animal or vegetable origin	12,42	21,34	24,33	42,37	40,51	26,95	35,53
Low level of RCA							
Meat and edible offal	-5,35	-2,66	-0,51	0,32	1,28	2,49	1,82
Vegetables	-0,45	-0,80	-0,26	0,06	0,44	1,66	0,47
Edible fruits and nuts	-2,19	-1,46	-0,06	0,69	1,65	2,16	1,52
Flour Milling and cereal Industry Products	0,10	0,15	0,40	0,37	0,31	0,39	0,32
No RCA values							
Fish and crustaceans	-1,68	-1,94	-1,28	-1,62	-1,30	-1,62	-1,76
Milk and dairy products, poultry eggs	-1,16	-0,30	1,10	1,79	1,51	0,70	-0,43
Ready-made food products	-2,79	-1,95	3,90	-2,25	-3,23	-8,54	-10,86

Source: calculated by author

The calculations results of the Revealed comparative advantages for products of 1-st group (cereals; seeds and fruits of oilseeds; fats and oils of animal or vegetable origin) display positive dynamics since 2016 for cereals, as well as seeds and fruits of oilseeds (fig. 1). The highest competitive positions in the EU market are cereals (*RCA* – 60,45).

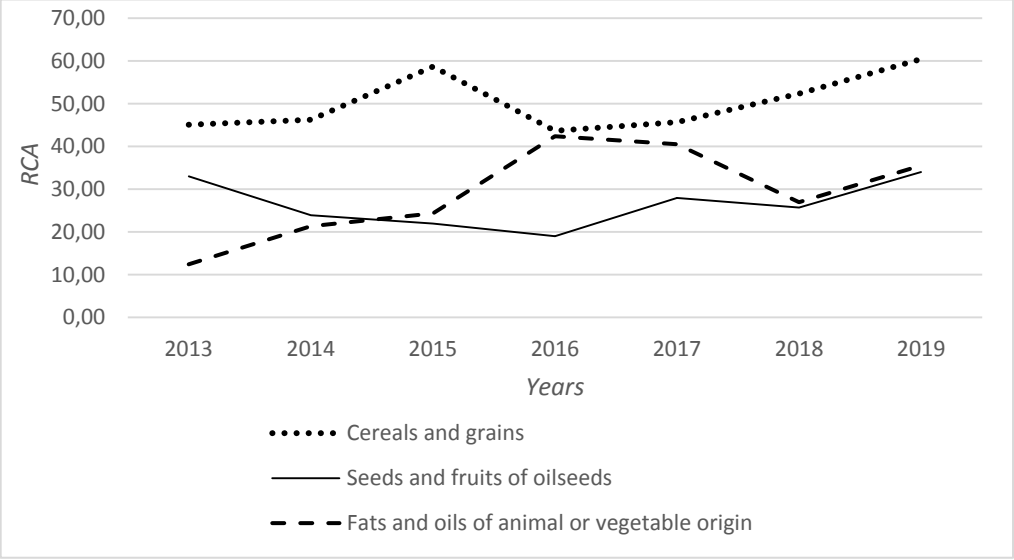

Fig. 1. The calculations results of the Revealed comparative advantages for products of 1-st group
Source: calculated by author

Almost all agricultural products of the second group (meat and edible offal; vegetables; edible fruits and nuts) despite the positive dynamics only since 2016 showed their comparative advantages (RCA> 0) and by 2018 were constantly growing (fig. 2). Products of the flour and mill cereal industry are characterized during 2013-2019 by approximately the same level.

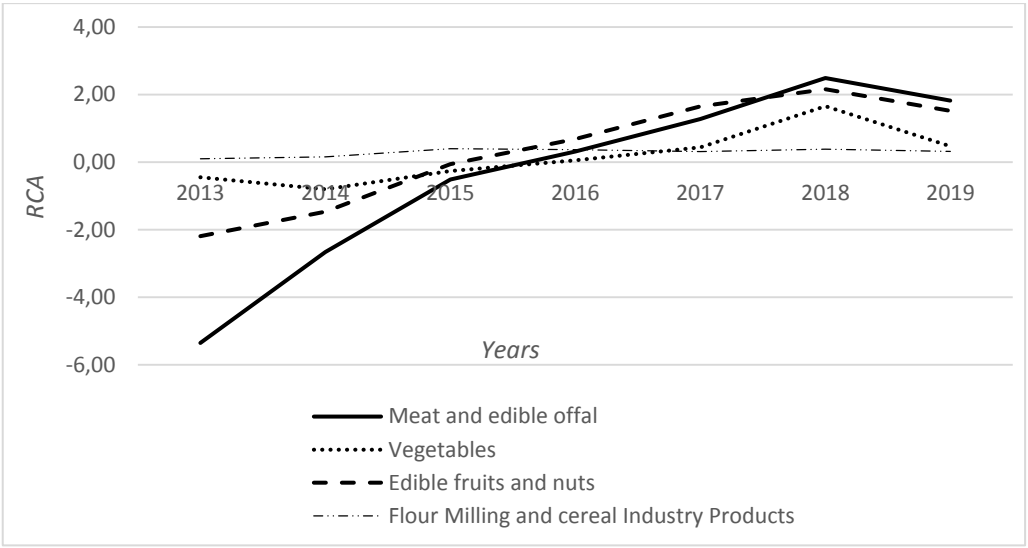

Fig. 2. The calculations results of the Revealed comparative advantages for products of 2-nd group
Source: calculated by author

The 3-rd group of agricultural products (fish and shellfish; milk and dairy products, poultry eggs; Ready-made food products) is characterized by lack of competitive advantages and negative dynamics (fig. 3).

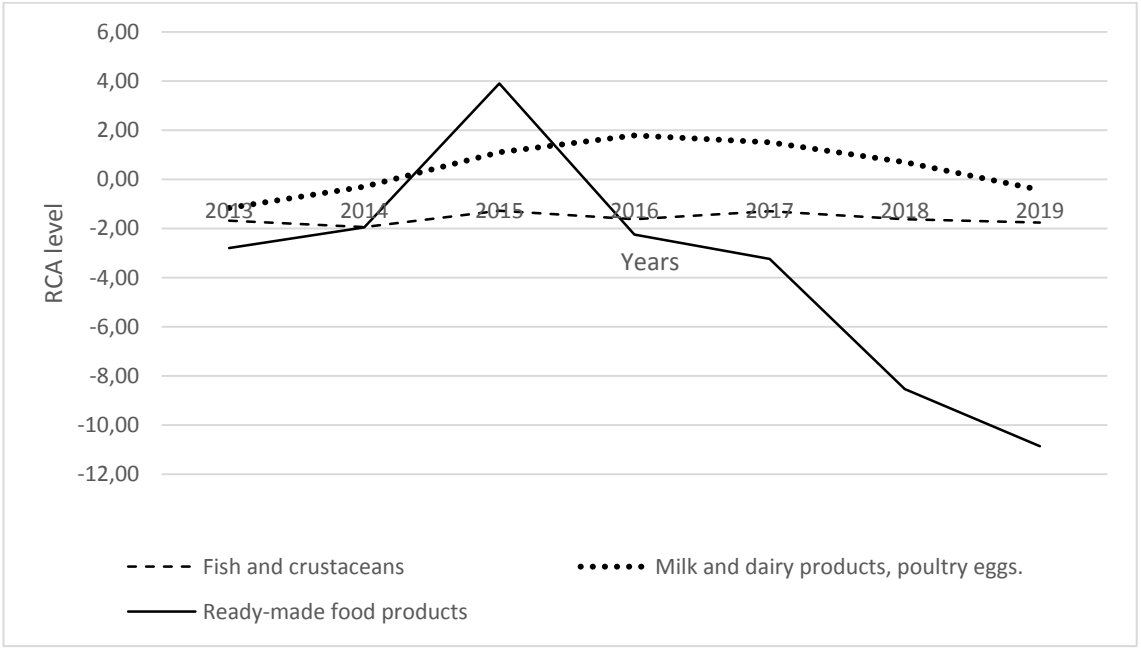

Fig. 3. The calculations results of the Revealed comparative advantages for products of 3-rd group
Source: calculated by author

Conclusions

Summarizing the calculations results, we admit that the high competitive advantages are mainly agricultural raw materials and primary processing products. Despite the high potential of natural resources, the development of enterprises of the agro-industrial complex of Ukraine should be based on the balance of resources; technologies adapted to local conditions, which will minimize material and monetary costs and maximize production and economic results; as well as a balanced institutional framework adapted to EU requirements and standards, which would promote microeconomic organizational, economic and industrial diversity and freedom of enterprise. It must be developed in strict accordance with objective economic laws and principles, while taking into account the laws of biological development.

We consider further research to be a promising area features of foreign experience in the functioning of agricultural enterprises in the context of European integration processes.

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SPECIFICS OF INDUSTRIAL INTEGRATED SYSTEMS FUNCTIONING

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Abstract. The article deals with the main advantages of the cluster approach in the context of the fact that it makes efficient use of the innovative potential of the regions, stimulates small business development, which in turn improves the living standards, to prove that cluster policies should be selective, that is at the State level it is necessary to decide which economic activities should be supported and which should be left to market forces.

Keywords: *industrial integrated systems, cluster, innovation, integration.*

Introduction

For a full understanding the functioning of industrial integrated systems as effective tools for managing the development of the regional economy, it is necessary to define the characteristics, to provide classification characteristics of the clusters, to provide a cluster model, as well as identifying the main participants.

Literature review. Clustering is not considered to be a very special phenomenon. In the second half of the 19th century the English economist Marshall Alfred identified and highlighted the significance of the emergence of two clusters: the textile cluster in the Manchester area and the metalwork cluster in Sheffield.

A little later, in half 20th century, serious contribution to practical and theoretical researches of development of industrial associations – clusters, under the name «industrial districts» made by Italian practitioners and scientists.

A number of authors (Stupak, Sidun, 2012; Tkachenko, Moroz, 2016; Fedorenko, Tugai, Goyko & Azhabeylo, 2018) used the term «filieres» to describe groups of technologically related sectors of the economy. The formation of the «filieres» was explained by the dependence of one sector on another on the technological level. Thus, the «filieres» foreshadowed the broader concept of clusters, emphasizing at least one of the reasons for their emergence – the need to create technological links between industries and sectors of the economy in order to realize their potential advantages. The term «filieres» is still widely used in scientific literature (mainly French and Italian) to describe these processes.

Today the cluster approach of regional economic development is being promoted in the economically advanced countries as one of the most justified times of functioning, progressive vectors of industrial development of the economy of a region. Some clusters of small and medium-sized businesses have been well established, namely: furniture production and footwear; meat and dairy farming groups; vegetable and fruit production, sunflower production and agricultural grain production; information technology, Internet and cable television, etc.

A number of economists studying the formation, development and results of industrial integrated clusters are inclined to the opinion that the clusters are the locus of international «centers» of innovation. Therefore, the cluster development of regions is considered as the most balanced and economically justified way of development of «off-line» economy.

Research results. At the joint of the 20th and 21st centuries it is widely believed that strategic plans for the development of a cluster approach to the development of the national economy becomes a regional «pray» which prevents the identification of a State regional policy programme with a territorial

support programme in some sense. It is clear that Ukraine should not be on the «roadside» of the leading world trends.

Importantly, the cluster is based on a market mechanism and the initiative of the participants, who come together to increase their benefits.

In contrast to vertically integrated corporate structures, which are created with the aim of maximizing the profits of the financial industrial group as a single entity, the cluster preserves, along with cooperation, a competitive atmosphere, autonomy and cluster members flexibility. Here, a single financial relationship does not dispute the realization of their own interests. Clusters have different shapes depending on their depth and complexity, but most of them include:

- company of «finished product» or service;
- suppliers of specialized factors of production, components, mechanisms, services; financial institutions;
- firms in related industries;
- grass-roots firms (with distribution channels or customers)
- by-product manufacturers; specialized infrastructure providers;
- State and other organizations providing special education, education, information, consulting, research and technical support (such as universities, training structures);
- suppliers of raw materials, products, technological equipment, companies producing goods and services, financial institutions and educational organizations for personnel training, carry out marketing and advertising activities, transport companies;
- logistics and export associations, trade and insurance companies (Oliynyk 2009, p. 258).

The cluster general structure can be considered as a living organism having a «core» and a «complement», «serving» and «auxiliary» objects. The core is formed by large industrial businesses that are involved in the main type of production, the result of which is the final product through which the cluster has its own defined positioning on the market. In addition, businesses operating around the main businesses guarantee the success of the core members. They are directly related to the operation of the cluster kernel. Service providers are grouped around.

The auxiliary businesses attached to the core have no direct influence on the activities of the cluster, but their presence is desirable as auxiliary to the other members of the Other Clusters adopted by the European Union. They include both large, core-building cluster and small companies – the «Scottish model» (e.g., Hollywood or German chemical industry cluster). Some clusters are based on university research, while others have no significant links with universities. These differences in the nature of clusters affect the economic and technological levels of development of the clusters' industries. Some clusters may be in the shadows or recognized altogether, cause the cluster's parts often belong to different traditional industry or service categories. For example, in the Massachusetts more than 400 companies providing at least 39,000 high-paid jobs, so workers are somehow involved in medical engineering.

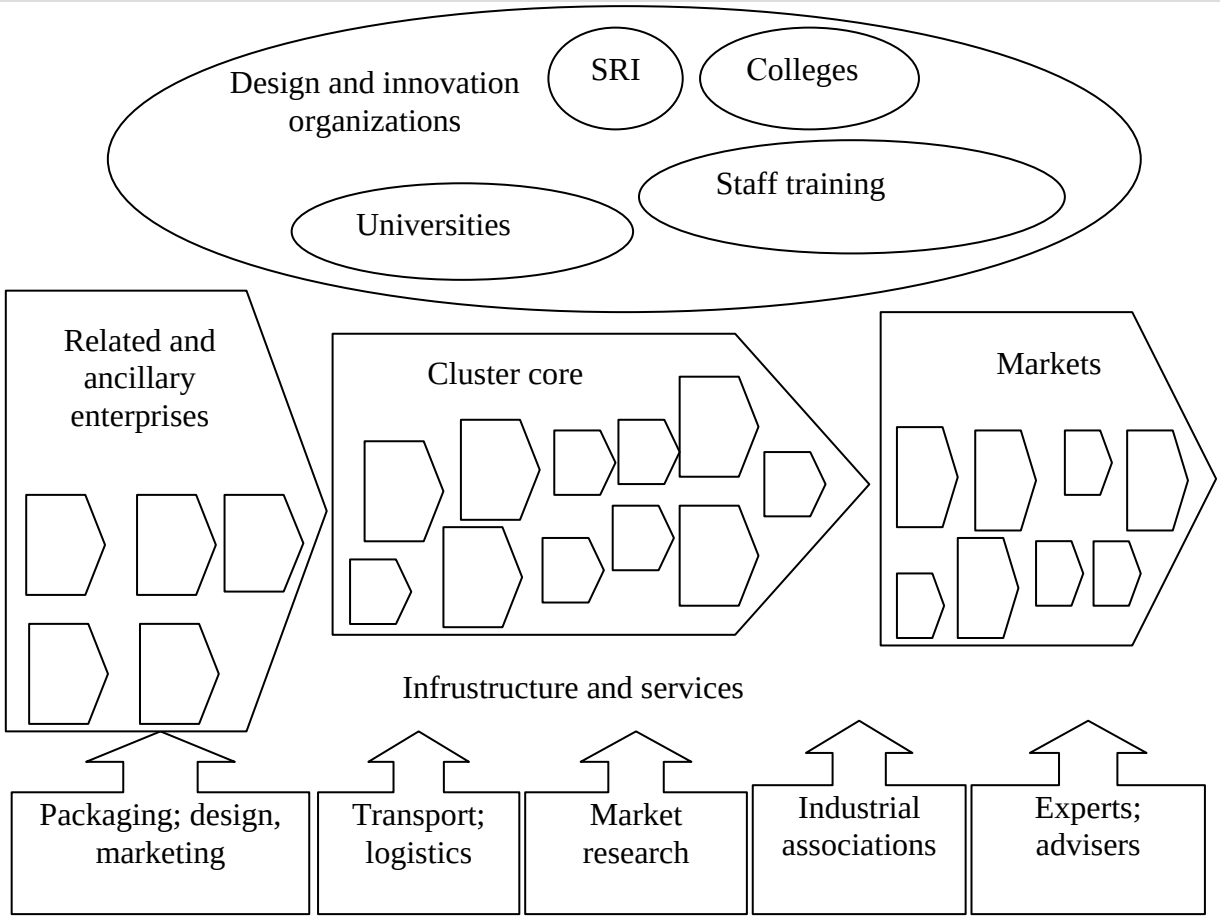

Figure 1. Cluster model
Source: (Moroz, Okorkova, 1998, p. 15).

It is possible to consider the possible structure of the cluster and its purpose in more detail, to present the interface scheme of the different structure in the cluster.

Clusters have the ability to respond quickly, in addition to, and sometimes even in a dramatic way, changes in management principles, to adapt to today's realities, making them more flexible and effective. Clearly, the creation and operation of clusters require certain environmental conditions. We consider the main ones that actually support the existence and successful development of cluster industrial production systems.

The essence of this concept consists in providing the totality of «five – I» (hereinafter – «5-i») important circumstances that are needed for the cluster to take place as an association and position itself on the market of a competitive and efficient organization. Thus, these «5-i» are (Belima, 2002, c. 28):

1. The initiative is an initiative staff with an entrepreneurial and progressive view of production and a professional image, the staff who are able to cooperate with the authorities, preferably members of the team of social organizers, representatives of scientific and educational institutions with high organisational abilities, who have proved the advantages of the operation of the cluster by their infatuation and ability to combine and create, both for each participant and for the region as a whole. I believe that this is an essential factor for the success of the clusters, as the lack of initiative precludes even the implementation of the project.

2. Innovation – learning and translating into industrial production, marketing, organization, management, learning of the latest technologies – opens up new opportunities for the formed association to improve the self-improvement and competitiveness of businesses. I believe that exceptionally new ideas and unconventional, unique solutions can make the attractive cluster for investment and introduce a new fresh stream of economic development.

3. Information – phrase «who possesses information, that owns the world» has not lost, but has sharpened its relevance in the present. The saturation, and sometimes even over-saturation of information, of resources, especially on the Internet offers a tremendous opportunity to analyse, to exploit, to benefit, to be ahead. In turn, businesses are able to exchange useful information in a timely

manner, have wide access to new supply and markets, find and train qualified staff online and cooperate with industry internationally. The Internet provides an opportunity for an accessible, open information to the general public about the advantages, promising possibilities of development of regional industrial production and investment attractiveness. The participants in the exchange of information have the opportunity to quickly adopt the previous, agree on the starting points of the strategic cooperation and the final decision. But there is a considerable time saving and it is vital.

4. Interest provides the basic condition for the existence of life, in principle. The basis of clustering is the mutual interest, the existence of economic interest in each of the members of the group, which manifests in the form of material remuneration and economic reciprocity in the cluster life. The attracting key for the investors to the region and to the successful implementation of investment projects is the return on invested funds.

5. Integration – involves the use of new cluster methods of cooperation between businesses, firms, organizations and institutions at the regional level in the various sectors of the national culture, with the active assistance of the authorities and the practical application of the scientific innovations technology development and information and innovation technologies also. This combination is the guarantor of investment attractiveness and investment in clustering, and hence regional development.

As we can see the cluster is an industrial complex (group, cooperation of industrial and production businesses, which complement each other and allow for development), formed on the territory of local concentration of businesses of leading production, as well as systems specializing in the supply, marketing, logistics and marketing of products and are intertwined by technological schemes and chains. Real-life clusters unite 3-5 participants in 12-15 thousand independent businesses.

The cooperative activities of cluster entities provide an opportunity for businesses and other actors to earn significantly more in the form of a financial result than they would if they worked separately (synergistic effects) (Campbell, 1997, p. 9).

Synergy is the effect of improving performance through the use of linkages and synergistic effects between different activities, where the overall impact exceeds the sum of all resources operating independently. The practical form of synergies between the elements (subsystems) of a system takes the form of the new qualities emergence, functions or mechanisms for the functioning of the composite entity. The appearance of new qualities and properties makes it possible to achieve a much greater effect from the combined action of subsystems than the mechanical sum of the results of their independent work. Each system – acquires necessarily new positive properties that are not present in its constituent elements. The value of the synergistic effect is determined by the difference between the value of the effect obtained by the combined action of the elements of production activity of the system again and the simple sum of the effects of the individual constituent elements of production. Synergistic features: synergistic effects occur only in complex systems that are not in a stable equilibrium, which allows them to develop; synergistic effects are possible only in systems, which are capable of harmonious internal interaction without external management influence; active cooperative interaction of many elements of the existing system is necessary to create synergies, the unifying factors of their successful interaction, the existence of unique properties and functions, the combination of which expands their possibilities (Gugler, Keller, p. 44).

The specific characteristic of the clusters functioning, which is the main result of the long-term impact, is the ability to conduct business negotiations and agreements in a constructive manner, reasoned, supported by mathematical calculations the dialogue between the participants, which make up «the core» and «complement», «serving» and «auxiliary» elements of the clusters.

In scientific publications of the American V. Price it is claimed that clustering the economy is «a means, a mechanism for restoring trust between the government and business and transforming individual firms into a community of entrepreneurs common goals» (Moroz, 2006, p. 26).

In order to identify it with confidence among other non-profit associations, among the peculiarities of the cluster's activities the following can be distinguished:

- association (non-profit partnership)
- voluntary membership without legal personality;
- trust between participants;
- export orientation of products;
- the availability of quality standards is higher than in the home region (country);
- arbitration tribunal;

- savings on procurement through joint work with suppliers;
- reduce transaction costs;
- collective brand;
- redistribution of production;
- shared distribution network;
- interaction of the cluster with authorities.

I believe that the specifics of cluster functioning have a certain classification characteristic. In general, the following criteria for classifying the identified clusters of businesses can be distinguished:

- business clusters can be distinguished by performance: production clusters, producing or manufacturing business clusters, clusters of service providers;
- industrial integrated clusters can be divided into industrial, traditional product, and intellectual or innovative clusters seeking to create innovative solutions to meet needs;
- industrial business cluster systems can be classified according to industry, for example: mining and processing clusters;
- the size and specialization of aggregate units (Marshall clusters) unite small and medium-sized business in different sectors of the economy, such as services, restaurants, information technology, etc., in which owners tend to located in areas where their own business is located;
- in terms of ownership, known government clusters in the territory where the local business serves the needs and interests of unprofitable but necessary institutions or businesses in the region. Examples include military industrial clusters, military bases, institutes and innovative technology research laboratories.

The following types of clusters are also identified, namely: vertical-internal associations within one production line, such as the chain of «supplier – producer – seller – customer»); horizontal (common customers, technologies, intermediaries, manufacturers' associations of different industries in mega-cluster, e.g., agro-industry); regionally defined cluster around a large industrial cluster of production or scientific business (Table 1.).

Table 1.

Cluster typology

Characteristic	Cluster types	Remarks
Opennes	open - trans-border; - induction; closed	Open – clusters that interact with businesses in other regions, but: Trans-border clusters – a group of existing businesses whose activities revolve around the circulation of a range, a list of inbound and outbound flows from other regions, and the usage of their internal regional resources; Induction Cluster, which operates on resources in the middle of the region but which induces external flows; Closed – operating only in the region.
Usage of primary resource	Full utilization; substantial; partial; weak	Full utilization – 100% of primary limited resource utilization; substantial – more than 80 per cent; partial – more than 50 per cent; weak – less than 50 per cent
Channel reliability	reliable; long-term; risky	Reliable – provided by cities strategically important to the State as a whole or to the region, in particular by cluster businesses; Long-term – market rules, well-established channels proven over time; Risky – relatively new channels.
State support	substantial; weak; lack of the State support	Substantial State support – a complete set of State programmes to support cluster businesses (grants, preferential taxation, active State investment, etc.); Weak – partial form of State support; Lack of the State support – total lack of support.

Source: (Zhelezniak, Rozhok, 2005, p. 14).

The cluster formation should start with the entities that are structuring, which cannot be bankrupt or in a state close to it. Implementing a cluster mechanism requires certain conditions, as set out in table 1. A cluster is not a grouping of outsiders whose main goal is to survive under modern conditions. Its main objective is to expand markets and stimulate economic development. This does not mean that an business should be a leader in its field, as long as its products satisfy consumers, are in demand and are already being joined by packaging companies that are interested in the new niches in the market, which contributes to the further improvement of the financial situation, lowering the cost of production, which in turn makes it possible to regulate the flows of goods and financial resources and to stabilize the markets.

The opportunity for business and for the region to develop dynamically and comprehensively, not by inertia, is the main offer thing that industrial integrated cluster systems is.

Based on the experience of the developed economies in the cluster economy, it can be concluded that the tangible results of the cluster economic development are not visible at any day. It takes from three to five years to build and develop a cluster system, and it takes decades to develop deep competitiveness and maintain a competitive advantage – a long time. This is linked to the implementation of strategic planning projects, the trust of time-tested results and the achievement of an image.

Natural factors such as resources, location on major trade routes, and the presence of a river may affect the presence of special clusters and may be felt many years after loss of direct influence.

Another premise for cluster development may be the existence of primary institutions, such as companies or universities, which, after a certain period of time, act as a basis for the creation of new companies in the cluster and for attracting investment from companies outside the region. Every cluster goes through certain development stages. They may not be identical, and their pace may change. However, there is an internal system logic of the way in which clusters evolve.

Even though the exact shape and direction will depend on certain circumstances, the cluster passes through certain stages of the life cycle. It has certain specific characteristics, key elements, benefits of creation, functions provided to both cluster members and the regional industrial integrated cluster system where the cluster is located.

Individual businesses that have conceived of industrial integration systems to address global or regional economic development issues need to spend years organizing them. And any «branch» in which so-called «cluster associations» are created turns into an investment magnet for domestic businessman and foreign investors. The process of ensuring certain advantages of the cluster is connected with the close position of the firms, personal contacts, close and constant ties, «internal» access to information, reduction of costs during conclusion and execution of transactions, simplifying the extraction of information and its exchange, and thanks to constant interaction, the speed with which information is disseminated, the image and the desire to maintain a stable position in society. Local organizations are more responsive to the cluster's specialized needs, and peer pressure and competitive pressure are increasing. In addition, cluster members tend to engage constructively and effectively, which has a positive impact on their long-term interests. Only with this approach Ukrainian industrial production businesses can generate investment interest from prospective investors.

Without a well-functioning system infrastructure, existing industrial producers will not be able to claim development, generate income and remain at a low level, from which the State loses (Oliynyk, 2009, p. 316).

In this context the main advantage of the cluster approach is that it makes efficient use of the innovative potential of the regions, stimulates small business development, which in turn improves the living standards.

Cluster policies should be selective, meaning that the State should decide which economic activities should be supported and which should be left to market forces. The State must choose either an offensive strategy or a protective strategy in the developing cluster policies.

The advantages and disadvantages of modern cluster policy are shown in figure 2.

The advantages and disadvantages of modern cluster policies have been highlighted

for their outstanding role in increasing the competitiveness of the urban and regional economies.

There are various ways to support cluster development, including:

- analysis, cluster mapping;
- priorities in choosing clusters to support;
- State targeted support programs;
- promote specialization and entrepreneurship;
- improve the quality of support services (information, training, consulting, joint initiatives);
- local partnerships (public and private);
- property support (incubators, technology parks, business centres);
- coordination (brokers);
- attracting investment;
- providing training;
- support existing clusters and newborn clusters.

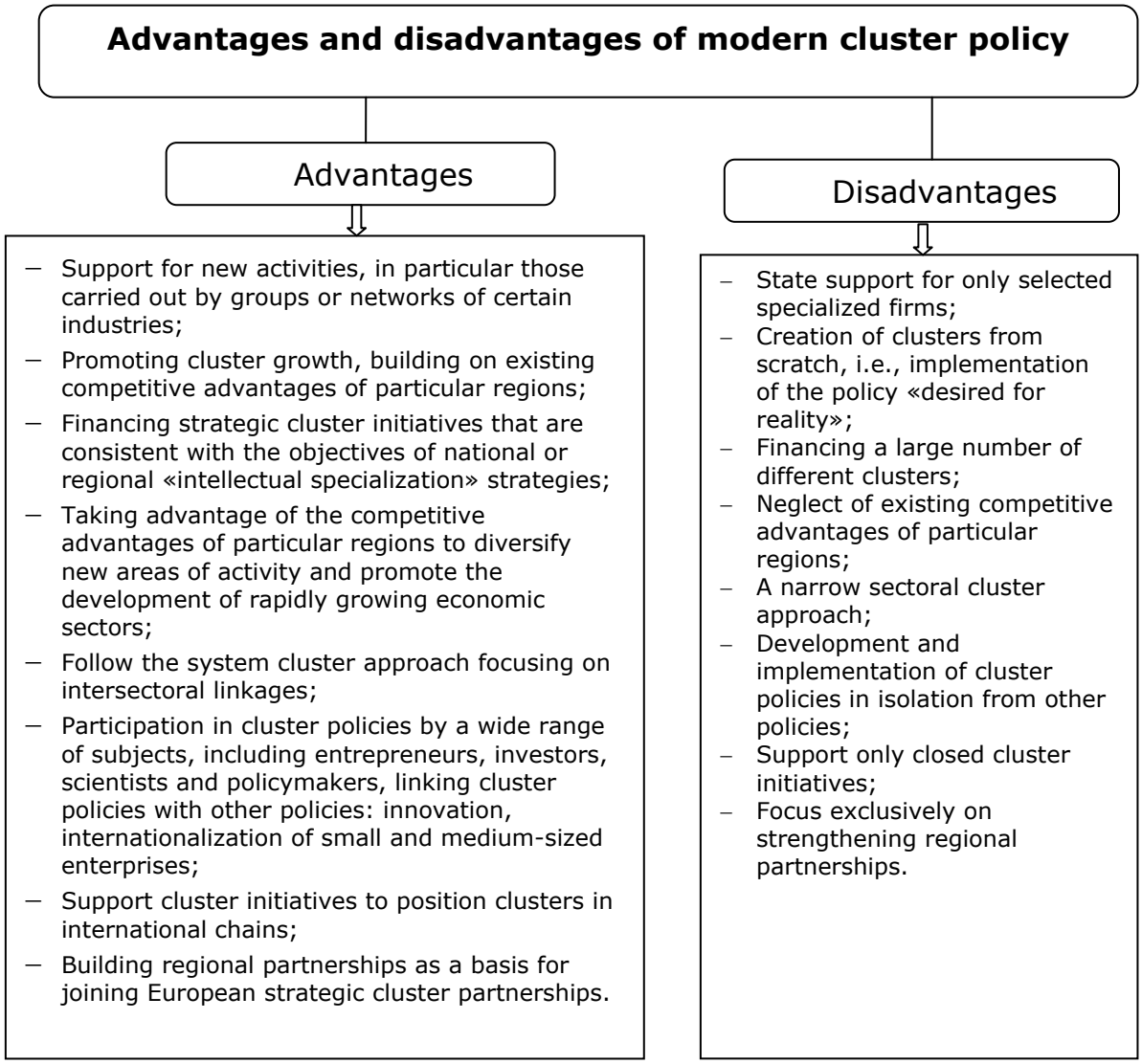

Figure 2. Main advantages and disadvantages of modern cluster policies
Source: by the author based on
(Smart guide to cluster policy. Guidebook series. Belgium, Brussels: European Commission, 2016).

Conclusions

The research findings are as follows:

1. As it is presented in the article the research of theoretical bases of cluster formation and functioning, as effective tools for the regional economy development management made it possible to provide the author's definition of the «cluster», representing the territorial productive form of

integration of locally legal entities, infrastructure, etc., characterized by the industrial production of competitive goods or services; its activities are based on the strategic development program agreed upon by the members of the cluster and harmoniously take into account the personal interests of each member of the group and the activities of which raise the social standards of the population and the growth of the region's economy.

2. The distinctive features and characteristics of the cluster form of the merger that distinguish them from other integrated structures are as follows: unlike the territorial production complex, the cluster is based on a market mechanism and the participants' own initiative, which unite to increase their competitiveness, as opposed to vertically integrated corporate structures that are created to maximize the profits of the financial and industrial group as a single entity, the cluster preserves, along with cooperation, an atmosphere of competition, autonomy, flexibility of the cluster members, and the unified financial relations do not dispute the realization of their own interests.

3. The main feature of the model of the organizational and economic mechanism for regulating regional development on the basis of clusters is the establishment of a systematic and targeted interaction among all the members of the association aimed at achieving the common objective of functioning, which is to improve the management of the region's development and to achieve a high level of regional competitiveness. The internal motives that lead businesses, organizations, institutions to create a cluster and to revitalize it include the economic factors that increase the efficiency of cluster members, the external ones that are negative, instability of regulation by the economic system of the State in general and the region in particular. The prerequisites for the creation of clusters are: appropriate opportunities in the territory (diversified farm structure, availability of related and interconnected production, scientific and human capacity); interest in integration among potential participants, enhanced material, moral and authoritative motivation.

4. Regional governments have a good reason to become a force that supports and unites local economic subject in cluster development. The regional authorities have the advantage of being close to the potential cluster project, to its participants, and of being highly motivated to implement the project, which may lead to economic, budgetary, social impact and additional source of efficient of the regional economy development management.

5. Cluster approach for effective regional economic development management is the improvement of the region's economic growth and competitiveness as a result of the efficient functioning and utilization of the territory's cluster potential and the joint collaboration of the cluster companies, and has significant social and economic relevance to the region has certain advantages and possible difficulties, i.e., pros and cons are presented in the work. Pros: the access to each other's resources, both raw materials and labour, increases access to skilled staff; demonstrates the ability of businesses to take advantage of innovative opportunities; and builds knowledge through a network of suppliers, research centres and educational institutions.

6. The advantages and disadvantages of modern cluster policies highlighted their outstanding role in increasing the competitiveness of urban and regional economies. The main advantage of the cluster approach makes efficient use of the innovative potential of the regions, stimulates small business development. In turn it improves the living standards of the population.

7. The cluster policy should be selective, meaning that the State should decide which economic activities should be supported and which should be left to market forces. In developing cluster policies, the State must choose either an offensive strategy or a protective one.

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PECULIARITIES OF THE CONSTRUCTION SECTOR DEVELOPMENT ACROSS THE WORLD ECONOMIES

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Abstract. The importace of the construction sector and its place in the country's economy are highlighted. The development of the construction sector in different countries of the world is analyzed by using the industry indicators: level of industrial production, material intensity, energy intensity, market import dependence, export orientation, import dependence of production. The integral index of development in the construction sector in some countries of Europe is determined. We assessed the impact of sectoral performance indicators of the construction sector in 36 countries on their GDP by using dynamic balance cross-sectional regression within years 2013-2018. Due to multidimensional statistical analysis we could identify 6 groups of countries, each with common features of the construction sector.
Keywords: *building, construction sector, country's economy, development.*

Introduction

The construction sector is one of the basic economic branches of every country in the world. The level of its development has a significant impact on the state economic security. Participation of construction sector in many socio-economic processes and its interconnection with all sectors of the economy make it an important element of the economic growth of the country. With its participation the primary physiological needs of society in housing and protection are being realized. Due to the fundraising function, basic funds (buildings and structures) are provided to the subjects of private, state and communal ownership regardless the type of economic activities. At the same time, capital markets, goods and services, labor resources are being formed; develop commercial, transport and socio-cultural infrastructures.

The development of the construction sector in Ukraine is hampered by some different issues of socio-economic, financial, institutional, technical, technological and organizational nature. Despite

the significant scientific contribution of researchers, a number of issues remain unresolved such as: the development of housing, commercial, industrial, and infrastructural construction, especially, the expansion of opportunities for using public-private partnership mechanisms in the construction sector; harmonization of construction and socio-economic needs of society; fornation of institutional environment for the effective functioning in construction sector; innovative support for the construction development**.** All this actualizes the need for a theoretical and methodological substantiation of strategic priorities and mechanisms for the development of the construction sector of Ukraine, in particular using the valuable experience of Ukraine in the development of construction, which led to the choice of research topic.

The purpose of the article *is* to study the features of the construction sector development in the economies of the world.

Research methods. The development of the construction sector in different countries of the world will be analyzed with the use of industry indicators, the most favorable of which based on expert estimates, in particular: the level of industry production; material consumption; energy consumption; import dependence of the market; export orientation; import dependence of production (Table 1).

To evaluate the impact of sectoral performance indicators of the construction sector production, gross value added (GVA) in construction; intermediate consumption in construction; intermediate consumption of imports in construction; direct material costs of energy in construction; exports and imports in construction in 36 countries) gross domestic product (gross) GDP) we use multivariate dynamic regression modeling tools, in particular, dynamic cross-sectional regression within years (2013, 2015, 2018), which allows us to make a broad general pattern (756 cases). The software package Statistica 10.0 is used for calculations.

Table 1.

Calculation of industry indicators to analyse the construction performances in different countries of the world

Indicator Name	Calculation formula	Feature
Industry Production Level	$BP_{cs} = \frac{GVA}{output}$ (1) where GVA is – gross value added in construction; ВИП is – output in construction.	Reveals the economic efficiency of production in the industry.
Material consumption	$MC_{cs} = \frac{ICwER}{output}$ (2) where $ICwER$ – intermediate consumption without energy resources in construction.	Determines the efficiency of the use of material resources in the construction sector.
Energy intensity	$EI_{cs} = \frac{DMCEC}{output}$ (3) where $DMCEC\ is$ – direct material costs of energy in construction	Defines the level of consumption of fuel and energy resources for the manufacture of construction products.
Export orientation	$E_o = \frac{E}{Output}$ (4) $where$ E is– export in construction;	Demonstrates the efficiency of export activity in construction.
Market import dependency	$I_{dCM} = \frac{I}{output - E + I}$ (5) where I is – importation in construction; $(OUTput - E + I)$ – capacity of the domestic construction market.	Determines the dependence of the domestic construction market on imported products.
Import dependence of production	$I_dP_{cs} = \frac{IdPcs}{output}$ (6) where IdPcs is – intermediate importation consumption in construction.	Reveals the dependence of industrial production in construction on imported products.

** Source: Formed by the authors*

For grouping countries of the world according to various indicators of the development potential in the construction sector of economy we use the multidimensional analysis (MDA), what allows to form taxonomic groups (Electronic textbook on statistics StatSoft). Using the MDA we determine the most favorable solution; the grouping and unification analysis allows us to reveal taxa with defined distances, which can be displayed in the form of a vertical and horizontal diagrams (Mokey & Vasiltsiv ed., 2010, p. 54). The Euclidean metric to calculate distances between objects (in multidimensional space) is used for that goal. (Chobal, 2015, p. 29). The software package Statistica 10.0 is also used for calculations.

Main Features. The construction sector plays an important role among economies of the world. Namely, it accounts for 9% of GDP in the European economy and provides about 18 million jobs. It is considered the driving force of economic growth and business for 3 million enterprises, mainly small and medium-sized businesses. Construction is the main consumer of semi-finished products (raw materials, chemical products, electrical and electronic equipment, etc.) and related services. The quality of construction products (its technical and technological properties and energy efficiency) has a significant impact on the socio-economic development and European standard of living. (Eurostat: Your key to European statistics; Strategy for the sustainable competitiveness of the construction sector and its enterprises).

The research results. The most active in the construction sector while shaping the economy within recent years among the studied countries were Australia, Slovakia; Romania, Lithuania, Canada, Mexico, Poland. The Netherlands, Poland, Estonia, Belgium, Denmark, Latvia, Portugal, Slovenia have the highest level of export oriented construction (World Input-Output Database; Official site of the State Statistics Service of Ukraine).

High industrial production indicators in construction are observed in those countries: Mexico (0,56), USA (0,55), Lithuania (0,55), Slovakia (0,47), Sweden (0,46), Brazil (0,46), Germany (0,44), Japan (0,44). The group of countries with the most material consumption in construction sector includes Ukraine (0,76), Bulgaria (0,76), China (0,75), Latvia (0,71), Ireland (0,70). Below-mentioned countries show a high level of energy consumption: Romania (0,0571), Spain (0,0238), China (0,0155), Russia (0,0151), Turkey (0,0135), Ireland (0,0112), Czech Republic (0,0112), India (0,0108), Poland (0,0104). The most import-dependent construction markets are in Estonia (0,0892), Belgium (0,0648), Denmark (0,0574), Slovakia (0,0405), Netherlands (0,0367), Hungary (0,0348), Germany (0,0288), Czech Republic (0,0218), Slovenia (0,0208). Significant dependence on imported products while the construction process is observed in Ireland (0,3025), Hungary (0,2641), Estonia (0,2308), Denmark (0,2225), Ukraine (0,2206), Bulgaria (0,2164), Belgium (0,2155) (Table 2).

Based on the above indicators, the integral index of construction sector development was calculated in the article, where for each indicator (the level of industry production, material consumption, energy consumption, market import dependency, export orientation, import dependence of production in the construction sector), a reference value was determined (best indicator among countries). The ratio to the reference value for each country determines the appropriate level for each indicator (in case of negative economic impact, the ratio is reversed (the reference value is divided, the value of the country is a divisor). Their sum forms an integral indicator of development in the construction sector (Table 2).

Table 2.

Development level of the construction sector in Europe, in 2018.

№	Country	BP_{cs}	MC_{cs}	EI_{cs}	E_o	I_{dCM}	I_dP_{cs}	IID_{cs}
1.	Slovakia	0,470	0,510	0,003	0,041	0,036	0,117	1,000
2.	Lithuania	0,550	0,420	0,005	0,021	0,059	0,102	1,000
3.	Estonia	0,370	0,600	0,005	0,089	0,106	0,231	0,996
4.	Denmark	0,360	0,610	0,003	0,057	0,069	0,223	0,934
5.	Greece	0,410	0,560	0,003	0,024	0,044	0,124	0,855
6.	Germany	0,440	0,540	0,008	0,029	0,008	0,116	0,824

7.	UK	0,400	0,560	0,006	0,011	0,005	0,062	0,808
8.	Belgium	0,300	0,680	0,005	0,065	0,075	0,216	0,805
9.	Austria	0,400	0,590	0,004	0,021	0,019	0,141	0,767
10.	Sweden	0,460	0,520	0,005	0,007	0,011	0,136	0,763
11.	Spain	0,420	0,550	0,024	0,006	0,019	0,062	0,738
12.	Hungary	0,380	0,580	0,006	0,035	0,042	0,264	0,732
13.	Italy	0,350	0,630	0,009	0,011	0,009	0,062	0,697
14.	Netherlands	0,330	0,650	0,006	0,037	0,193	0,200	0,679
15.	Finland	0,380	0,590	0,005	0,006	0,001	0,137	0,679
16.	France	0,390	0,590	0,005	0,009	0,120	0,120	0,676
17.	Portugal	0,370	0,590	0,008	0,012	0,048	0,113	0,644
18.	Turkey	0,430	0,520	0,014	0,003	0,019	0,152	0,629
19.	Poland	0,350	0,630	0,010	0,014	0,074	0,117	0,588
20.	Romania	0,370	0,550	0,057	0,014	0,026	0,147	0,586
21.	Slovenia	0,330	0,630	0,009	0,021	0,063	0,166	0,577
22.	Czech Repub.	0,300	0,680	0,011	0,022	0,033	0,121	0,550
23.	Latvia	0,260	0,710	0,009	0,020	0,030	0,155	0,464
24.	Bulgaria	0,210	0,760	0,006	0,025	0,036	0,216	0,433
25.	Ireland	0,260	0,700	0,011	0,010	0,006	0,303	0,321
26.	Ukraine	0,230	0,760	0,008	0,004	0,015	0,221	0,243

*** BP_{cs} – Level of branch production in the construction sector; MC_{cs} – Material consumption in the construction sector; EI_{cs} – Energy intensity in the construction sector; E_o – Export-orientated construction sector; I_{dCM} – Import dependence of the construction market; I_dP_{cs} – Import dependence of production in the construction sector; IID_{cs} – Integral indicator of development in the construction sector.*

****** Source: Formed by the authors.*

The last position of Ukraine in terms of construction sector development among 26 European countries is due to the low level of industry production (0.230), high material consumption (0.760) and energy consumption of construction process (0.008), low export orientation (0.004), high import dependence of production in construction (0.221) and other economic factors.

The results of the balance cross-sectional regression are statistically significant, as evidenced by the relevant indicators: correlation coefficient (0,9881); adjusted coefficient of determination (0,9756); Fisher's F-test F(3,104)=1428,2; Standard error (0,25324); p- level (0,0000). The results of the research prove a significant impact of the construction air condition on the GDP of states (X_2 = 0,975). The low impact on GDP is made by intermediate consumption of imports in construction (X3 = 0.263) and the inverse small impact is shown by intermediate consumption of construction (X_4 = -0,245).

The results of the cluster analysis allow to identify 6 groups of countries in the world, with common features of the construction sector (Table 3).

Table 3.

Clusters formed according to the results of 2018 research on the performance of the construction sector in some states of the world

Cluster №	Cluster Countries	Cluster features and common traits
I	USA	High level of economic development; the first place in the world on GDP; the highest level of construction output; high level of industry production; low level of import dependency and export orientation in the construction sector.
II	Australia, UK, India, Germany, France,	Mainly high level of economic development; average level of industrial production and material consumption in the

	Japan	construction sector; high energy consumption; significant intermediate consumption; low export orientation and average import dependence of the construction sector.
III	China	Significant dynamics of economic development; second place in the world GDP; the highest level of output, GDP, intermediate consumption, of direct material costs of energy in construction sector; second place for export and third largest import in the construction sector.
IV	Brazil, Italy, Canada, Russia	High and low level of economic development; high level of industrial production in the construction sector; low power consumption; extremely low export orientation of construction; low import dependency of the construction market and average import dependence of production in the construction sector.
V	Belgium, Spain, Korea, Mexico, Netherlands, Poland, Turkey	Mainly average level of economic development; average level of industry production, high material and energy consumption in the construction sector; mostly high export orientation; significant intermediate consumption of imports in the construction sector.
VI	Austria, Bulgaria, Greece, Denmark, Estonia, Ireland, Latvia, Lithuania, Portugal, Romania, Slovakia, Slovenia, Hungary, Ukraine, Finland, Czech Republic, Sweden.	Mainly average level of economic development (most EU countries and Ukraine); the lowest level of GDP, intermediate consumption in construction, intermediate consumption of imports in construction, direct material costs of energy in construction; high import dependency of the construction market and highest import dependence of production in the construction sector.

**Source: Formed by the authors.*

Ukraine joined the sixth group together with countries such with countries as Latvia, Lithuania, Estonia. Since 2013 to this group has been added Bulgaria, Greece, Denmark, Ireland, Portugal, Romania, Slovakia, Slovenia, Hungary, Finland, Czech Republic. In 2015, Austria and Sweden joined there. These are countries, mainly with an average level of development, a low level of Gross value added (GVA), intermediate consumption in construction, intermediate consumption of imports in construction, direct material costs of energy resources in construction; high import dependence of the construction market and high import dependence of production in the construction sector. These important features should be taken into account in further studies of mid- or long-term development prospects in the context of active globalization.

Conclusions

Analysis of the theoretical researches and actual trends of sectoral development allows us to state that due to peculiarities of its economic structure, each state has a number of specific features concerning the definition and support of dominant industries and sectors of the economy, which are related with different stocks, opportunities and policies of rational use, conservation and enhancement of natural, material, financial and labor resources and, consequently, different levels of socio-economic development.

We believe that the strategic priorities for the development of the construction sector should be chosen for high-tech construction based on innovative principles of energy conservation, alternative energy use and environmental friendliness practiced by the world developed countries and which outlined expediency has been confirmed by their high socio-economic indicators. It substantiates the need to develop capacities for the production of basic building materials using the local raw materials and also their high technical and technological support.

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EVALUATION OF THE COURTS EFFECTIVENESS IN THE CONTEXT OF DEVELOPING AN ORGANIZATIONAL AND LEGAL MECHANISM TO STRENGTHENING THE AUTHORITY OF THE JUDICIARY

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JEL Classification: K1

Abstract. The article examines the issue of assessing the effectiveness of the courts in the context of developing an organizational and legal mechanism to strengthen the authority of the judiciary. A review of the current level of authority of the judiciary indicates that in the absence of a unified strategy for strengthening the authority at the state level, the main burden of such activities rests with the courts. This statement is confirmed, in particular, by the well-known pattern of significant differences in the public assessment of the quality of court work by respondents who applied directly to the court and other respondents who did not have personal experience. This pattern encourages an in-depth study of the relationship between the authority of the judiciary and the authority of a particular court.

According to the results of the study, it is established that the evaluation of the efficiency of courts and purposeful work to improve the key indicators measured during such evaluation is an important condition for strengthening the authority of the judiciary in general. The proposed approach will help to clarify the methodological basis for assessing the effectiveness of the courts by shifting the emphasis from economic efficiency to social efficiency in the context of strengthening the authority of the judiciary. The importance of improving the methodology for assessing the effectiveness of courts and wider coverage of relevant data sets is emphasized, which will allow to applying the methods of legal statistics for their analysis. A promising area of further research is to substantiate ways to strengthen the authority of the judiciary at the judge level.

Keywords: *judicial power, authority of the judiciary, court, efficiency of court activity, assessment of court efficiency.*

Introduction

A review of the current level of authority of the judiciary indicates that in the absence of a unified strategy for strengthening the authority at the state level, the main burden of such activities rests with the courts. This statement is confirmed, in particular, by a long-known pattern of significant differences in public assessment of the quality of court work by respondents who applied directly to the court and other respondents who did not have personal experience. Let's pay attention to the results of the survey within the USAID New Justice Program, conducted in October 2018 (Results of the second all-Ukrainian survey of the population of Ukraine on trust in the judiciary, judicial reform and perception of corruption USAID's New Justice Program, 2018, pp. 12–15).

This survey showed a general level of trust in the judicial defect of 16%, a level of distrust – 59%, which was the highest after distrust in the Verkhovna Rada, the President, the government, and political parties. However, as it turns out in the further analytical study, the level of trust in the judiciary among the participants in court proceedings is more than twice as high (34%)! This pattern was observed during previous periods when similar measurements were performed.

This pattern encourages an in-depth study of the relationship between the authority of the judiciary and the authority of a particular court. It is important to clarify the conceptual foundations and study the possibilities and prospects of such differentiation is to find the nodes of the distinction between the authority of the judiciary and the authority of the court.

The issue of implementing the concept of the authority of the judiciary at the court level in recent years has not been studied in scientific papers. Therefore, the **purpose** of the study is to generalize the features of reproducing the concept of the authority of the judiciary at the court level.

Literature review. According to Part 1 of Art. 3 of the Law, the courts of Ukraine form a single system. Yurevych I. V. emphasizes that the unity of the judiciary is an integral part of its status, which is established and enshrined in the Constitution of Ukraine, and the powers, establishment and operation, organizational support of bodies and institutions belonging to the judiciary should be established by one law. Regarding the organizational aspects of unity, the scholar notes that neither the organization of the judiciary nor any process within it can contradict the uniform principles of structure and functioning of the judiciary (Yurevych 2012, p. 1116). Prylutskyi S. V. emphasizes that "the unity of the judiciary lies in the integrity of its organization and activities, which ensures its external independence and, among other things, is embodied in the subordination of all court cases to the supreme cassation supervision of one court" (Prylutskyi, 2012, p. 26). We should also take into account the opinion of Serdiuk V. V. that the lack of a holistic, comprehensive, scientifically sound concept of the unity of the judiciary leads to unsystematic, ill-considered reform of both courts of general jurisdiction and other state institutions that do not directly administer justice but work closely with the judiciary. in resolving issues of organizational, logistical, and personnel support (Serdiuk, 2007, p. 25).

One of the obvious areas of research on the implementation of the concept of the authority of the judiciary at the court level is the efficiency of work. The efficiency of the court is directly related to its formal and informal authority. Thus, Moskvych L. M. considers the authority of the court as one of the criteria for the effectiveness of the judicial system, which allows for the assessment of the level of legitimacy of the institution of the court in society. According to the scientist, the standard of judicial authority will assess the status of the judiciary in the transformation of society, and the perception of the judiciary as an independent, independent institution for dispute resolution, awareness of the binding nature of court decisions will contribute to the formation and establishment of a truly effective judicial system (Moskvych, 2010, p. 35).

Research methodology. The research methodology is formed within the framework of theories of the judiciary, judicial law and the concept of the authority of the judiciary. The research uses methods of critical analysis of scientific sources, structural-logical and formal-dogmatic methods. The conclusions of the study were formed using the methods of generalization and abstraction.

The source base of the study was regulations and scientific works on jurisprudence.

Research results. It should be noted that the functioning of the judiciary of Ukraine based on unity and adherence to key principles by all courts does not preclude different efficiency of the courts. As stated in the CREC Opinion № 18 (2015), "The judiciary (like the other two branches of government) is a civil service body. It must report (in the sense outlined above) to the people she serves. The judiciary must exist in the interests of the rule of law and those in need of protection and justice. Therefore, the judiciary is faced with the need to demonstrate to other authorities and society as a whole the exercise of power, authority, and independence that have been entrusted to it. Demands for the efficiency of the judicial system on the part of litigants have increased. Simplified access to justice has grown. Efficiency and accessibility are aspects that determine "responsibility" (Conclusion № 18 (2015) of the Advisory Council of European Judges (CCJE) "The position of the judiciary and its relationship with other branches of government in a modern democracy").

Martianova S. M. notes the existence of different approaches to the interpretation of the concept of efficiency of the judiciary. The scientist notes that in the narrow sense the efficiency of justice is seen as making a lawful and reasonable decision in a particular case, while in a broad sense the efficiency of the judiciary is understood as the ability of justice as a state activity to achieve its goals (Martianova, 2018, p. 97). Moskvych L. M. under the term "efficiency of the judiciary" suggests understanding its ability to have a real beneficial effect on certain legal relations, resulting in

resolving social conflict and achieving social justice. The scientist distinguishes between the upper and lower limits of the efficiency of the judicial system, where the upper is a situation of complete agreement between the results of its operation and the goal, and the lower - the threshold of efficiency at which the judicial system loses its optimality, becomes less manageable and eventually loses its meaning (Moskvych, 2010, p. 31).

As rightly points out Chupryna Yu. Yu., Proper implementation of the function of justice is based on the effective implementation of tasks and functions assigned to the judiciary, created on the principles of territoriality, specialization, and instance, provided they provide a fair and impartial hearing within a reasonable time (Methodology of analysis of court activity: approved by the Order of the SJA of Ukraine dated 07.06.2018 № 286, p. 1).

It should also be noted that the Conclusion of the CJEU № 18 (2015) emphasizes that "the function of the judiciary is to resolve disputes between members of society and the state and directly between members of society. The judiciary is often involved in resolving disputes between two or even three branches of government. All this must be done according to the principle of the rule of law. An independent and efficient judiciary is the cornerstone of the rule of law. The goal of any independent and effective judicial system must be to guarantee a fair, impartial settlement of legal disputes while respecting the rights and freedoms of all people seeking justice" (Conclusion № 18 (2015) of the Advisory Council of European Judges (CCJE) "The position of the judiciary and its relationship with other branches of government in a modern democracy").

At the present stage, the assessment of the effectiveness of local and appellate courts of general jurisdiction is carried out by the State Judicial Administration of Ukraine based on the Methodology of analysis of courts, approved by the SJA of Ukraine dated 07.06.2018 № 286.

According to the Methodology, the analysis of court activity "is aimed at making objective management decisions to improve the status of court proceedings and the rational use of budget funds". According to the results of the assessment, the courts are given ratings: "AA" - the court considers court cases promptly, effectively using labor and financial resources; "AB" - the court considers court cases on time, but uses resources inefficiently due to excess labor and financial resources (measures should be taken to limit labor and financial resources); "BA" - the court does not cope with the consideration of court cases while using resources efficiently (indicates a lack of labor and financial resources, measures should be taken to select staff and increase financial security); "BB" - the court does not cope with court proceedings and uses available resources inefficiently (urgent measures should be taken to improve the work of the court) (Methodology of analysis of court activity: approved by the Order of the SJA of Ukraine dated 07.06.2018 № 286).

Open access as of the fourth quarter of 2020 is available to assess the effectiveness of local and appellate courts of general jurisdiction for 2017 – the first half of 2020. Besides, it should be noted that the data are incomplete – for 2019 and 2020 there is no information about the efficiency of local general courts. So, first of all, let's analyze the effectiveness of local general courts.

Demianenko I. V. emphasizes that local general courts occupy a central place in the judicial system of Ukraine and bear the main burden of considering and resolving legally significant cases. The researcher emphasizes that in the context of ongoing judicial reform, the problems of organization and operation of local courts need priority attention (Demianenko, 2016).

As Chycherska M. I. rightly points out, the efficiency of the judiciary in Ukraine depends on many factors, in particular, the quality of judicial reform and the optimization of the work of the lowest judicial level – local courts. In the study of the functioning of local courts, the researcher emphasizes that "the fact that today it is a defining link in the judicial system, there is no doubt, as well as no doubt that local courts are extremely overloaded with court cases, and the effectiveness of organizational and functional support their work is extremely low" (Chycherska, 2016, p. 142).

According to judicial statistics (Analytical tables on the state of justice in 2019), the average monthly receipt of cases and materials per judge of the local general court was 64.2 and 65.8 in 2018 and 2019, respectively. For district administrative courts, these figures were 28.9 and 30.9, for local commercial – 13.3 and 15.3. For appellate courts, the figures are even lower at 7.0 and

10.7, respectively. According to the above data, it should be assumed that the main point of direct contact between society and the judiciary is the local courts.

Let's take a closer look at the performance indicators of local general courts presented in the data for 2017-2018 (The efficiency of the courts in 2017; The efficiency of the courts in 2017).

In total, the assessment data of 585 courts are presented. Of these, in 2017, 361 received the lowest rating "BB", 82 – "BA", 80 – "AB" and only 62 – the highest rating "AA". In 2018, 323 courts received the BB rating, 210 courts received the BA rating, 8 courts received the AB rating, and only 44 courts received the highest AA rating.

As follows from the above assessment methodology, the most problematic in terms of efficiency and potential impact on the authority of the judiciary are the groups of courts "BB" and "BA". Let's take a closer look at the factors of low efficiency of the courts of these groups. First of all, let's pay attention to the factors that can be directly related to the authority of the judiciary – the percentage of resolved cases and waiting time for consideration of the case. The second group of factors – cost-effectiveness and productivity of the courts, can, in our opinion, affect the authority of the judiciary only indirectly in the case of preparation and publication of relevant critical materials by media or civil society institutions and their widespread dissemination in the media. In our case, it should be recognized that the interest of citizens in public finances and the efficiency of public authorities at this stage is not high enough to form a significant impact of the outlined factors on the authority of the judiciary. On the other hand, these indicators are extremely important for assessing the applied aspects of the formal authority of the judiciary, ie the component that is formed regardless of public opinion.

Thus, referring to the available data, we note the following trends in the efficiency of the courts classified in the group "BB". In 2017, the average deviation of the percentage of resolved cases from the model indicator was -16.5%. The deviation was higher in 143 courts; in 22 courts the deviation was two or more times higher than the average. Particularly low (-73 and -74 percent of the model indicator, respectively) were the indicators of the Karlivsky District Court of Poltava region and Putilsky District Court of Chernivtsi region. For these courts, the deviation from the model indicator at the time of the case was -1544% and -1235%, respectively, and cost-effectiveness and productivity indicators were low. The average deviation from the model time of the case was -100.8%. The above-average deviation was observed in the case of 137 courts. Deviations above the average of more than ten times were recorded in the already mentioned courts, as well as in the Yaremche City Court of Ivano-Frankivsk region.

According to the data of 2018, the average deviation from the model indicator of the percentage of resolved cases increased and reached -19.1%. The highest deviations were in Shirokivsky District Court of Dnipropetrovsk Oblast and Teplytsky District Court of Vinnytsia Oblast. The average deviation from the model time of the case also increased, it amounted to -168.1%. The largest deviations -2445% and -1378% were observed in Veselivsky District Court of Zaporizhia Region and Shirokivsky District Court of Dnipropetrovsk Region, respectively.

It should be noted that the Karlivsky District Court of Poltava region according to the results of the evaluation in 2018 received a rating of "BA", deviations in the main indicators decreased to -20% and -452%, respectively. A decrease in the deviation with the transition to the group "BA" was observed in the case of Putilsky district court of Chernivtsi region (-49% and -879%, respectively), but Yaremche City Court of Ivano-Frankivsk region remained in the group "BB" with -39% and - 894% respectively. A review of Internet resources indicates that there are almost no substantiated critical reviews of their work by the courts.

Discussion of research results. It should be noted that the proposed methodology to some extent compensates for the methodological vacuum in assessing the impact of the effectiveness of individual courts on the authority of the judiciary. However, due to the lack of sufficient data for a longer period, it is impossible to study trends in this area in more detail using the methods of legal statistics. We emphasize that the assessment of the effectiveness of courts in the light of developing a mechanism to strengthen the authority of the judiciary can be supplemented by a case study of problems in the field of disorder in court, as well as cases of widespread publicity in the media and social networks.

Conclusions

According to the results of the study, it is established that the evaluation of the efficiency of courts and purposeful work to improve the key indicators measured during such evaluation is an important condition for strengthening the authority of the judiciary in general. The proposed approach will help to clarify the methodological basis for assessing the effectiveness of the courts by shifting the emphasis from economic efficiency to social efficiency in the context of strengthening the authority of the judiciary. The importance of improving the methodology for assessing the effectiveness of courts and wider coverage of relevant data sets is emphasized, which will allow applying the methods of legal statistics for their analysis.

A promising area of further research is to substantiate ways to strengthen the authority of the judiciary at the judge level.

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HISTORY OF CREATION AND GENERAL DESCRIPTION LEGAL ASPECTS OF THE CONSTITUTION OF SWITZERLAND 1874

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Abstract. The contemporary Ukrainian state has chosen a European development strategy, is carrying out all necessary measures and reforms to become a full member of the European community. Having signed an association agreement with the European Union in 2014, Ukraine's European choice is being implemented through a comprehensive reform of legislation, bringing it in line with European standards. One of the manifestations of this process is a meaningful study and analysis of the constitutions of European countries. The article is devoted to the study of the Swiss Constitution of 1874, its individual articles, legal features. The provisions of the Basic Law affect the legislative system, its condition and further development. The optimal models of the state system, that will ensure its stability and sustainable development, can be found through the study of the history of constitutionalism.

Keywords: *Constitution, federal assembly, referendum, democracy, cantons, constitutional reforms.*

Introduction

Switzerland is unlike any other European country in terms of its formation and development. Suffice it to look at the history of the formation of the Swiss state and compare it with similar processes that took place in neighboring countries such as France or Germany. In France or Germany, there has always been a dominant titular nation, a common language and culture, absent in Switzerland. The Swiss state arose as a result of a treaty or, more precisely, as a result of a kind of political compromise, which, in turn, led to the creation not of a nation united by a single culture, but 4 nations that united different cultures. In addition, there has been not only the creation but also the preservation of such a state for centuries, the improvement of its state and political forms, which could not have happened without building a solid foundation laid down in the constitution. Such a solid foundation was the state and political system, which allowed the newly formed Swiss state not to disintegrate throughout history, but, on the contrary, to find true unity.

Switzerland is not involved in major European politics and, on the one hand, does not attract the same general attention as many other European countries, but, on the other hand, attracts by virtue of its mystery and obscurity. While maintaining constant neutrality, being considered the oldest republican federation in Europe and decentralized, Switzerland is of considerable interest to lawyers.

The aim of the article is to carry out a historical and legal analysis of the formation and development of the Swiss Constitution of 1874 as a component of the continental legal system.

Literature review. In domestic jurisprudence, there was almost no comprehensive study of the constitutional foundations of the state system of the Swiss Confederation and its legal features. Some aspects of this topic were considered in the research and works of such domestic scientists as M. S. Gorshenyova, M. B. Onishchuk, V. F. Pogorilko, V. O. Riyak. General problems of the constitutional law of the Swiss Confederation and the development of federalism, interaction between the Confederate authorities and the cantons, the implementation of the competence of the cantons were studied in the works of such jurists as T. D. Matveeva, S. L. Avramenko, I. P. Ilyinsky, N. V. Queen Borsodi, J. J. Blumer, Y. I. Leibo, W. W. Maklakov, T. D. Mat-

veeva, B. A. Strashun, K. Eichenberg, A. Auer, J. J. Blumer, A. Gabriel, R. Hermann, D. Farney. In view of this implementation, the study of the Swiss Constitution is relevant.

Research methodology. The author used general and special scientific methods of the historical and legal processes and phenomena cognition. The general scientific methods, namely: dialectical, historical, comparative-historical, method of general philosophical dialectics, comparative analysis, system-structural, from special-scientific – historical, historical-legal, comparative-legal, formal-legal and other methods, are also used in this research.

The empirical basis of the research consists of the scientific publications, archival documents and materials, as well as legislation, collections of documents on the period under the research, the results of the study of the Constitution of Switzerland 1874.

Research results. In the second half of the XIX century, in Switzerland, quite strong ties have been established between individual parts of the state. This was accompanied by a weakening of particularist aspirations, the expansion of the competence of federal bodies. Switzerland is a relatively small country, and this process was intense. Over time, it demanded adequate constitutional changes. By the mid-1870s vol. it became obvious that there were omissions in the Basic Law of 1848, and some of its provisions were noticeably outdated. The first attempt to reconsider at the request of the Radical Party was made by the Swiss Parliament in 1866. The Radicals demanded that the federal constitution, which existed at the time at the cantonal level, enshrine a legislative referendum.

The democratic opposition demanded constitutional reforms, namely, "expanding the rights of the people in the country's political life and improving the system of representative democracy by enshrining in the Constitution the instruments of direct democracy." Slogans were raised about free secondary education, tax cuts, the creation of a child protection program and the restriction of working hours, i.e, giving the state a social function to maintain balance in society. In the cantons there was talk of expanding the rights of residents. In 1869, the first reforms at the cantonal level were implemented in Zurich: the local government was elected by the people, and all laws passed by parliament had to be approved by popular vote. A similar wave of democratic reforms swept across other cantons.

The changes and additions adopted by the Federal Assembly were submitted to a referendum on January 14, 1866. Of the nine articles put to the vote, only one was adopted, which spoke of the legal equality of all Swiss citizens, including Jews. Other provisions enshrining the right of settlers to vote in public and cantonal voting and the obligation to pay taxes by settlers, freedom of religion and worship, expansion of the Federation, abolition of corporal punishment, protection of copyright in industrial and artistic works and industrial products, unity of measure and weights, as well as the ban on lotteries and gambling, were rejected.

In 1869, after the regular elections to the National Council, the majority in it were representatives of the Radical Party, who advocated a revision of the Constitution and the further strengthening of the central government. In the early 1870's, they initiated a new attempt to revise the Basic Law. The country has long had a need to create common commercial and civil codes to all of Switzerland, and this could not be done without significant changes to the current Constitution. The intensification of the religious struggle also pointed to the need for centralized protection of the spiritual freedom of the population. In addition, the unification processes taking place in the nearby German Empire could not but affect Switzerland.

In 1872, the radicals submitted to parliament a draft Basic Law, which significantly expanded the list of subjects of the Federation by giving it the right to issue laws on railways, banks, insurance companies and factories, as well as laws governing marital and family relations. Military affairs were transferred to the Federation, primary school education was declared compulsory and free, executions and corporal punishment were abolished, and complete freedom of conscience and religion was guaranteed. In addition, an optional referendum was introduced not only at the cantonal but also at the federal level. Most parties in parliament opposed the bill. On May 12, 1872, it was rejected in a referendum: 261,096 votes to 255,585 and 13 cantons to 9. The federal government had to draft a new, "more careful" draft Constitution, changing the original text to less centralization.

By the end of January 1874, the Federal Assembly drafted a new Basic Law, which was put to a referendum on April 19 of that year. 340,199 citizens and 14 cantons voted for it. The new Constitution came into force on May 29, 1874. It was in force for 125 years, until the adoption of the Basic Law in 1999, and was considered, along with the American, one of the "oldest" written constitutions.

The changes to the original draft were that some areas of military construction were placed under the jurisdiction of the cantonal governments, and federal legislatures were given the right to issue laws only on clearly defined issues. At the same time, in ecclesiastical matters, the new Basic Law significantly expanded the rights of the Federal authorities. According to T. Kurta, "the fact that this Constitution was adopted by such an overwhelming majority, gave it more respect and strength than is usually achieved by constitutions introduced against the will of the people" (Kurti, 1906).

As D. Farn notes, "this Constitution had a dual character: on the one hand, in the economic sphere it became the top of the liberal system, because within it a single economic space was created, on the other hand, it marks the end of the era of radical democrats'' (Fahrni,1982). It was the Constitution of 1874 that introduced the institution of a referendum of petitions into the country's political life. According to D. Farn, "the transition to a modern democracy of referendums, in which the population, having collected a certain number of signatures, could demand a vote on any law passed by parliament, was the most important step towards a new political system" (Fahrni,1982).

The structure of the Constitution of 1874 was completely copied from the Constitution of 1848. It consisted of 123 articles, 3 sections and transitional provisions. In terms of volume, the original text of the Constitution turned out to be only 9 articles larger than the previous Constitution.

The Constitution of 1874 was based on the same principles as the Constitution of 1848: people's sovereignty (Article 1), recognition of rights and freedoms (Article 2.5), equality before the law (Article 4), separation of powers (Article 71), the federal state system (Article 1), the republican form of government (Article 6), the democratic political regime (Article 6).

The Constitution of 1874 has a religious color, as the preamble begins with the words "In the name of Almighty God", which reflects the role of the church, which played a significant role in political life. Now this formula is in tune with the religious sentiments of the majority of the country's population. Actually, the text of the constitution includes 1% of the article in numerical order. Throughout its history, it has undergone numerous changes and by 1985, 54 new articles were included in this act, and 52 of them were left under existing numbers, but with the addition of the Latin words "bis", "ter", etc., and 54 articles were canceled or changed (39 of them – once, 9 – twice, 3 – three times and 3 – five times). Two articles (51 and 52) have only numerical designations without text. Of the actual 173 articles (number 121), only 84 reflect the original text of the 1874 Basic Law. As a result of frequent changes, the constitution has largely lost its unity and internal coherence. In comparison with the new and latest constitutions of other Western European countries, Swiss law loses both in form and content. The current Constitution lacks, for example, a special section on rights and freedoms, does not enshrine many of them, does not name the principles of internal organization of the Swiss state. Although the preamble mentions the chains of the Swiss Union - the maintenance and strengthening of the unity, strength and honor of the Swiss nation - this act does not say anything about the goals of the state, the tasks assigned to the confederation and cantons. Moreover, there is no section in the Constitution on the division of competence between the federation and the cantons. The first chapter contains various rules – on the preemptive rights of the federation, on the rights and freedoms of Swiss citizens, citizenship, financial and tax provisions, etc. The second section focuses on the structure of central government and the third – the revision of the federal constitution.

The text of the Constitution of 1874 was formed in different historical epochs, so it reflects different political events, conditions, needs. "Different-caliber", "diverse", the inequality of different parts and provisions of the constitution was greatly facilitated by the change in the procedure for amending it, made on July 5, 1891, when the basic law introduced the possibility of changing it by popular initiative. You can, for example,

specify a number of articles of this act, reflecting the struggle in the country on various issues, conflicts of interest of different groups and organizations. Among such norms were: Article 25 bis, introduced in 1893 and in force for more than 80 years, prohibiting the slaughter of cattle without prior stunning before the release of blood (in December 1973, the content of this rule was changed, it now speaks of animal protection); current regulations on grain harvesting (Article 23 bis); on water management (Article 24 bis); on the protection of swamps and wetlands of special beauty (paragraph 5 of Article 24 of the Sixth); on the right of the confederation to issue legislation on hunting and fishing, especially in order to preserve large game in the mountains (Article 25); about alcoholic beverages (Articles 32 bis, 32 ter, 32 boats); about gambling establishments (item 35); on taxes on fuel (Article 36 ter) and more.

The Constitution of 1874 established in Switzerland a federal form of territorial organization, which during its existence has undergone significant evolution. About half of all changes to the constitution are related to the strengthening of the central government in the country.

According to the form of government, Switzerland is a parliamentary republic, which has some features in comparison with the classical model. There is no head of state in the country – a specially elected president; nominally, the head of the confederation is recognized as the head of the government, who receives his powers for a term of one year. The head of the confederation has only representative and technical functions, and as the head of government, this person does not have any special rights; he is only the "first among equals" of ministers. One of the defining features for establishing the form of government is, as is well known, the question of government responsibility. There is no answer to this question in the constitutions, laws and regulations of the chambers of the Federal Assembly, although deputies have some traditional forms of control. They can ask questions, make interpellations that are actually questions with debate. Nowhere is there any mention of the possibility of the government's resignation and the conditions for such resignation. The constitution does not provide for the most important rights of parliament in relation to the government - a vote of no confidence and a resolution of condemnation.

In parliamentary republics, and it is generally accepted, the question of government partisanship is always quite clear - the right to form a government is given to the political party or parties that have a majority in parliament (usually in the lower house). The constitution of 1874 and the rules of procedure of the chambers of the Federal Assembly, which sit together (namely, they form the government) do not say anything about the influence of parties in this process, although they certainly participate in the formation and chambers are party factions. If in the classical model of a parliamentary republic received by the investiture, the head of government represents its members to parliament, in Switzerland, these members are elected by secret ballot and separately for each position. Given that Switzerland does not currently have a monopoly party, the government may be multi-party (although consultations between faction leaders are held), and second, the personal moment in the vote may probably be of greater value than in classical parliamentary countries.

As already mentioned, the Constitution of 1874 is a very heterogeneous document that regulates not only state and legal relations, but also issues of administrative, financial, environmental and other branches of law. However, we can call a defining trend in the development of the constitution – the constant, continuous strengthening of central, i.e. federal power, which is expressed in the growth of areas of federal and mixed (competing, parallel and other) regulation.

Another notable result of more than a century of development of the Constitution of 1874 was some expansion of the rights and freedoms of citizens. As early as 1879, an amendment was introduced banning the death penalty for political offenses, in 1880 – on sickness insurance, in 1891 – on the inclusion of popular initiative in the procedure for amending the Basic Law, in 1945 – on family protection, in 1971 – on granting women the right to vote, in 1981 – on equality in the rights of men and women and some others.

It is safe to say that Switzerland, during the Constitution of 1874, had a "clearly established system of rights of direct democracy" (Schaffhauser, 1994), at all levels: federal, cantonal and communal. Apparently, there was no other country where

citizens were so active in the legislative process and where so many popular votes were held on specific issues. The humorous literature states that the country holds the world record for holding all sorts of referendums, "which force the state not to sleep all twenty-four hours a day and three hundred and sixty-five days a year" (Schaffhauser, 1994).

According to the method of change, the Constitution of 1874 is considered to be "rigid". There are two types of viewing – full and partial. One or both chambers of the Federal Assembly or 100,000 voters may initiate a full review; after the initiative is introduced, a national referendum is held. If a majority of voters support such a revision, both houses of parliament will be re-elected to draft a new constitution. The draft is then submitted to a referendum, which requires a double majority to be approved – a majority of voters and a majority of cantons. During the current constitution, a full revision was repeatedly proposed (for example, in 1917 and 1945), but only once was a referendum held on the need for such a revision. On September 8, 1935, such an initiative was rejected by 511,578 voters against 196,135 with 60.9% of the electorate participating in the vote. In 1965, a procedure of full revision was initiated in both chambers of the Federal Assembly, which continues to this day and is characterized by detail and thorough preparation. The new version of the draft constitution, drafted by the Department of Justice and Police on October 30, 1985, has a completely modern look.

The result of the development of the Constitution of 1874 was the constant strengthening of central government, which was reflected in the growing number of areas of federal and mixed regulation.

Conclusions

Thus, the Swiss state was and remains one of the most developed and successful in all respects, states of the planet. Switzerland has stayed away from many events that shook Europe in previous centuries. In many respects it is a merit of the state system put in the constitution and its creators – Swiss.

The Swiss Constitution of 1874 completely replaced the previous Constitution of 1848. The new Constitution entered into force on May 29, 1874.

The legal features of the Constitutions of 1848 and 1874 are largely the same, which allows us to conclude the formation of the Swiss constitutional succession. The structure of the Basic Law of 1874 was also clear and logical. The same use of terms was observed throughout the text. This Constitution can also be called incomplete, as many issues were allowed to be regulated by current legislation. Among the techniques used by the Swiss legislator, the inclusion in the Basic Law of both articles containing detailed regulations and shorter declarative articles is still noteworthy. In addition, some long wordings, difficult not only to understand but also to perceive, were not removed from the Constitution, which significantly complicated the work with the text.

The Constitution of 1874 was in force for 125 years, before the adoption of the Basic Law of 1999, and was considered, along with the American, one of the "oldest" written constitutions.

Future studies of the Swiss Constitutions will focus on a comprehensive review of the Swiss experience of scientific and practical interest in terms of building a modern multinational state, consideration of the peculiarities of the central authorities and the authorities of the Swiss Confederation.

For some, Switzerland remains a dream, for some an ideal, and for others an example to follow. Of course, the Swiss constitutional experience is invaluable in many ways. This small nation, which lives in a rather small area, has such a rich history, and we can learn a lot and adopt a lot from it.

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APPEALS REVIEW OF CASES BY THE GRAND CHAMBER OF THE SUPREME COURT

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Abstract. The article examines issues related to the activities of the Grand Chamber of the Supreme Court as a court of appeal to conduct an appellate review of cases in accordance with the provisions of paragraph 8 of Part 2 of Article 129 of the Constitution of Ukraine. Attention is paid to the concept of "system" in the context of the system in its semantic sense and it is proved that both the system of courts of general jurisdiction and the judiciary have in common a systemic criterion for the establishment and existence of these concepts. The peculiarities of the formation of the Grand Chamber as a structural subdivision of the Supreme Court are determined: such a judicial body within the Supreme Court operates on a permanent basis; is a collegial body; a judge of the Grand Chamber may be only a judge of the Supreme Court; representatives from each court of cassation are elected to the Grand Chamber by the meeting of judges of the court of cassation; limitation of the term of stay of a judge of the Court of Cassation in the Grand Chamber and the number of times of election; only the judge of the Grand Chamber, who is elected by the Grand Chamber by secret ballot for 3 years, may be the secretary of the Grand Chamber; observance of the principle of proportional representation of judges of each court of cassation in the composition of the Grand Chamber; adherence to the principle of unity of all jurisdictions in the organizational structure of the Grand Chamber of the Supreme Court. Attention is also paid to the specifics of consideration of administrative cases in the order of their appellate review. It is argued that the Grand Chamber is an integral and unique component of the Supreme Court, whose main task is to achieve consistency and unity of case law.

Keywords*:* *Grand Chamber of the Supreme Court, Supreme Court, judge of the Supreme Court, appellate review, administrative case, system.*

Introduction

The implementation of reformist approaches based on amendments to the Constitution of Ukraine (regarding justice) on June 2, 2016 prompted the reformatting of the court of cassation. The Law of Ukraine "On the Judiciary and the Status of Judges" of June 2, 2016 updated the concept of "the highest judicial body in the system of courts of general jurisdiction" with its replacement by the concept of "the highest court in the system of courts of Ukraine".

For the average person, this is not a problem, but from a scientific and theoretical point of view, such changes indicate the latest aspects of understanding and the role of the Supreme Court as the highest court in the judicial system of Ukraine. In particular, Part 3 of Art. 125 of the Constitution of Ukraine (as amended by June 2, 2016), the Supreme Court of Ukraine was determined by the highest judicial body in the system of courts of general jurisdiction. This indicated that in Ukraine there was a state system of courts of general jurisdiction, which included general courts and specialized courts (administrative and commercial local, appellate and higher specialized courts).

Many works of scientists and practitioners are devoted to the functioning of the court of cassation. At the same time, the Grand Chamber of the Supreme Court as a court of appeal is currently out of the attention of researchers. Therefore, the **purpose of studying** this article is to

analyze the legislative provisions on the organization and functioning of the Grand Chamber as a structural entity of the Supreme Court.

Research methodology. In the process of research (in realizing the goal - substantiation of provisions, conclusions and search for new solutions to selected issues) used the following general and special methods, in particular, methods of systematic analysis, systematization and generalization, method of specification and argumentation in the study of theoretical and legal principles of appellate review cases and when disclosing the features of such review in the manner prescribed by the Code of Administrative Procedure of Ukraine, the Grand Chamber of the Supreme Court; statistical analysis to assess judicial statistics for 2019-2020, which are presented in the Supreme Court's review of exemplary cases; systematic analysis, method of induction and deduction and other scientific methods aimed at obtaining scientific and practical results, in developing theoretical provisions and practical recommendations for solving scientific and applied problems on appellate review by the Grand Chamber of the Supreme Court, to formulate proposals of theoretical and applied nature concerning the directions of improvement of the corresponding norms of the legislation of Ukraine in this sphere.

Research results. To replace the concept of "system of courts of general jurisdiction" in the wording of the Constitution of Ukraine of June 2, 2016, the constitutionalist introduced the concept of "judicial system". In general, "system" is of Greek origin ("σύστημα", "systema") and means formation, addition (Dictionary of foreign words, 2000, p. 529). Modern explanatory editions under the term "system" understand the order caused by a planned (correct) arrangement and mutual communication of parts of something, a slender number, the connected whole; form, method of construction, organization of something; ordinary, habitual, accepted established order of something; set of parts connected by a common function (Large explanatory dictionary, 2005, p. 1320). Semantic understanding of the concept of system includes the terms "connection", "element", "whole", "unity", as well as "structure" – a scheme of connections between elements (The latest philosophical dictionary, 1998, p. 619). It is also noted that the system is a limited set of interacting elements, therefore, the system is the integrity of interconnected elements (Litovchenko, 2015, p. 79-84).

In turn, the judiciary means the construction of the judicial system (Judicial system, 2003, p. 717). According to the constitutional provisions, the judicial system is certainly based on the systemic connections of the relevant courts, which are derived from the organizational principles of the judicial system. Such connections have different characteristics, but the main ones are territoriality, specialization, instance. Thus, the position will be correct, according to which the main factor in building a system of courts (judicial system) is its structuring and hierarchy in accordance with the constitutional principles, which are continued in the legislation.

Thus, both for the system of courts of general jurisdiction and for the judiciary, there is a common systemic criterion for establishing and understanding these concepts. At the same time, the definition of the Supreme Court by the highest court in the judicial system specifies the affiliation of this court and any court in the state to such a system (structure, hierarchy) and eliminates a certain tautology between the concepts of "court of general jurisdiction" and "general court".

The constitutional provisions concerning the Supreme Court do not provide for its internal construction, referring the law enforcer to legislative provisions. Part 2 of Art. 37 of the Law of Ukraine "On the Judiciary and the Status of Judges" defines the structure of the Supreme Court, a full element of which provides for the activities of the Grand Chamber.

The Grand Chamber of the Supreme Court is a fairly new organizational institution, introduced in accordance with the Law of Ukraine "On the Judiciary and the Status of Judges" as amended on June 2, 2016. According to Art. 45 of the Law of Ukraine "On the Judiciary and the Status of Judges" the Grand Chamber of the Supreme Court is a permanent collegial body of the Supreme Court, which consists of 21 judges of the Supreme Court. The filling of the Grand Chamber of the Supreme Court has its own peculiarities. In particular, judges of the

Supreme Court are elected to the Grand Chamber by a meeting of judges of the respective courts of cassation from among the judges of such courts of cassation. enters the position.

Under such legislative regulation, it is possible to single out some organizational aspects of the formation of the Grand Chamber of the Supreme Court. First, such a judicial body within the Supreme Court operates on a permanent basis. Second, the Grand Chamber is a collegial body and administers justice exclusively in a collegial composition. Third, a judge of the Grand Chamber may only be a judge of the Supreme Court who has passed the relevant competitive selection and is a judge of the Supreme Court in the relevant court of cassation. Fourth, representatives from each court of cassation are elected to the Grand Chamber by a body of judicial self-government – the meeting of judges of the court of cassation. Fifth, limitation of the term of a judge of the Court of Cassation in the Grand Chamber (3 years) and the number of times of election (not more than two consecutive terms). Sixth, only the judge of the Grand Chamber, who is elected by the Grand Chamber by secret ballot for 3 years, can be the secretary of the Grand Chamber, and the law does not contain restrictions on the re-election of a judge to this position. Seventh, adherence to the principle of proportional representation of judges of each court of cassation in the Grand Chamber. Eighth, adherence to the principle of unity of all jurisdictions in the organizational structure of the Grand Chamber of the Supreme Court.

The Judicial Law contains the powers of the Grand Chamber (Part 2 of Article 45 of the Law), the main of which are as follows: 1) review of court decisions in cassation in cases specified by law in order to ensure uniform application of law by courts; 2) carrying out an appellate review as a court of appellate instance in cases considered by the Supreme Court as a court of first instance. Thus, in general, the Grand Chamber is a court of both appellate and cassation instances, which is characteristic of the procedural powers of the Supreme Court today. That is, within one structural unit of the body of justice – the Supreme Court – the legislative provisions provide for and implement the merger of two instances – appellate and cassation in the respective categories of cases.

Part 1 of Art. 125 of the Constitution of Ukraine defines territoriality and specialization as constitutional principles for the construction of the judiciary in Ukraine, but does not provide for the principle of instance. At the same time, for consideration of the most important disputes for citizens and the state, in particular with the participation of higher subjects of state power, as well as exemplary cases in Part 1 of Art. 17 of the Law of Ukraine "On the Judiciary and the Status of Judges" along with the above constitutional principles defines the principle of instance. Based on this, for example, in the cases provided for in Part 5 of Art. 266, part 3 of Art. 278, part 5 of Art. 285, part 11 of Art. 290 Code of Administrative Procedure of Ukraine, according to the results of the Supreme Court in the panel of judges of the Administrative Court of Cassation of these categories of disputes as a court of first instance, the appellate court is the Grand Chamber.

In other cases, the Grand Chamber of the Supreme Court acts as a court of cassation, as the powers of this structural entity and the procedure for their implementation are regulated in the relevant provisions of procedural laws. Given the need to comply with the constitutional requirement on the possibility of cassation appeal in a case specified by law, it should be noted that the cassation review in general and the cassation appeal in particular have one specific feature – the issue of cassation is decided by the court of cassation and judgments may be subject cassation review of this court, while the cassation review in case of transfer of the case to the Grand Chamber is carried out by the Grand Chamber of the Supreme Court. At the same time, the fact of opening cassation proceedings by the relevant court of cassation is the main criterion for determining the boundaries of the study in this article, as the Grand Chamber receives not only a cassation appeal, but a cassation appeal for cassation proceedings together with the requested case.

Based on such considerations, in our opinion, it would be appropriate to focus on the examination of the appellate review of a case in which the Grand Chamber of the Supreme Court is the court of appeal. The functions of the appellate court are performed by the Grand Chamber of the Supreme Court only in administrative proceedings. Thus, in cases provided by the Code of Administrative

Procedure of Ukraine, the Grand Chamber of the Supreme Court on appeal as a court of appellate review court decisions in cases considered by the Administrative Court of Cassation within the Supreme Court as a court of first instance (Part 3 of Article 23). The procedural law includes the following categories of cases: 1) regarding the legality (except for constitutionality) of resolutions of the Verkhovna Rada of Ukraine, decrees and orders of the President of Ukraine; legality of actions or inaction of the Verkhovna Rada of Ukraine, the President of Ukraine, the High Council of Justice, the High Qualification Commission of Judges of Ukraine; legality of acts of the High Council of Justice, the High Qualification Commission of Judges of Ukraine (Part 5 of Article 266); 2) to appeal against decisions, actions or inaction of the Central Election Commission to establish the results of elections or an all-Ukrainian referendum (Part 3 of Article 278); 3) on early termination of the powers of the People's Deputy of Ukraine in case of non-compliance with the requirements of incompatibility (Part 5 of Article 285; 4) in exemplary cases (Part 11 of Article 290).

Consider them in more detail. Thus, the rules of Art. 266 by the Code of Administrative Procedure of Ukraine apply to administrative cases concerning: 1) legality (except for constitutionality) of resolutions of the Verkhovna Rada of Ukraine, decrees and orders of the President of Ukraine; 2) legality of actions or inaction of the Verkhovna Rada of Ukraine, the President of Ukraine, the High Council of Justice, the High Qualification Commission of Judges of Ukraine; 3) legality of acts of the High Council of Justice, the High Qualification Commission of Judges of Ukraine; 4) legality of decisions of the High Council of Justice adopted as a result of consideration of appeals against decisions of its Disciplinary Chambers.

Here are some examples of case law. Thus, the decision of the Grand Chamber of the Supreme Court of January 29, 2020 reviewed the decision of the Administrative Court of Cassation of the Supreme Court of October 9, 2019 in the case of a complaint of a number of individuals to declare illegal and cancel the decision of the High Qualification Commission of Judges of Ukraine on announcing a competition for 505 vacant positions of judges of local general courts for candidates who are in the reserve.

According to the court of first instance, the High Qualification Commission of Judges of Ukraine, announcing the competition only for those candidates for the position of judges who are in the reserve to fill vacant positions of judges, put in an unequal position (discriminated) other participants entitled to participate in it, namely: judges who intended to be transferred to vacant positions in local courts. Therefore, the terms of the competition announced by High Qualification Commission of Judges of Ukraine on July 2, 2019, contain signs of discrimination.

The Grand Chamber of the Supreme Court, satisfying the appeals of 200 people (including the High Qualification Commission of Judges of Ukraine) and revoking the decision of the Administrative Court of Cassation of the Supreme Court of October 9, 2019 in this case arose about ensuring equal access to the competition for the positions of judges of local courts and understanding of Part 8 of Art. 79 of the Law of Ukraine "On the Judiciary and the Status of Judges", namely the following part of the sentence: The complainants asked the Grand Chamber the main question – can such an interpretation of the law ensure equal access to the competition of these persons?

In the disputed legal relations that arose in this case, the judges and candidates for the position of judge who were in the reserve were from the very beginning in different conditions of the qualifying examination and with a difference between the barrier of 25% (not in favor of those candidates who were in reserve). Given the provisions of Part 13 of Art. 79 of the Law of Ukraine "On the Judiciary and the Status of Judges", which provide for certain advantages of judges in determining the winners by rating, compiling a single rating would put candidates for judges who were in reserve since 2012, 2013, 2017, in a obviously disadvantaged position.

At the same time, the Grand Chamber of the Supreme Court noted that the only possible understanding of the legislative provision and the scores must be identical (equal) for all participants (candidates and judges) to fairly determine the winners on the basis of a single rating. That is, it is possible to hold a competition in which both candidates for the position of judge and judges who have expressed their intention to be transferred to another local court will participate only if no discrimination is discriminated against.

The Grand Chamber agreed with the applicants' arguments in the present case that the literal application of Part 8 of Art. 79 of the Law of Ukraine "On the Judiciary and the Status of Judges" and the compilation of a single rating for candidates for judges and judges who apply for transfer on the basis of paragraph 6.6 of section VI of the Regulations on competition, would indirectly discriminate against candidates vacant positions of judges of local general courts.

In addition, the appellate court pointed out that the discretion of the High Qualification Commission of Judges of Ukraine in finding a legitimate way out of a situation that is not regulated by law cannot be unlimited. In making the relevant decisions, the High Qualifications Commission of Judges of Ukraine had to take into account the priority needs of the judiciary and the existing public interest in access to justice and the consideration of cases by courts within a reasonable time. Therefore, the High Qualifications Commission of Judges of Ukraine had to act transparently and as consistently as possible.

The Grand Chamber of the Supreme Court took into account that the main purpose of announcing a competition for judges was to exercise their right to transfer, however, such a competition and its results did not solve the problem of shortage of judges. Thus, the High Qualification Commission of Judges of Ukraine decided on July 2, 2019 to announce a competition for 505 vacancies for candidates who were in the reserve. In addition, it was noted that Part 6 of Art. 79 of the Law of Ukraine "On the Judiciary and the Status of Judges" does not contain an imperative to hold a competition to fill vacant positions of judges for all vacant positions of judges in all local courts where they are registered (Resolution of the Grand Chamber, 2020).

Thus, the first group of administrative cases in which decisions are subject to appeal by the Grand Chamber of the Supreme Court are cases related to the activities of higher state authorities. The second group consists of cases related to the assessment of the legality of acts and decisions of judicial authorities.

With regard to election cases and cases related to the holding of an all-Ukrainian referendum, the courts of appeal in this category of cases are the relevant administrative courts of appeal. The appellate court in cases considered in accordance with Part 3 of Art. 273 by the Code of Administrative Procedure of Ukraine, the Supreme Court is the Grand Chamber of the Supreme Court. Thus, the third group of cases consists of cases related to the implementation of election cases.

In cases of early termination of powers of the People's Deputy of Ukraine in case of non-compliance with the requirements of incompatibility (Part 5 of Article 285 of the Code of Administrative Procedure of Ukraine) the appellate court also determined the Grand Chamber of the Supreme Court, which distinguishes the fourth group of cases – cases of early termination.

With the amendments to the Code of Administrative Procedure of Ukraine in October 2017, a new institute of procedural law was envisaged – the institute of exemplary cases. This novella was aimed at achieving unity of law enforcement practice, but the institution of "exemplary case" is widespread only in administrative proceedings. The concept of an exemplary administrative case has also been introduced – it is a typical administrative case accepted for proceedings by the Supreme Court as a court of first instance for making a model decision. According to Art. 290 Code of Administrative Procedure of Ukraine, if one or more administrative courts are typical administrative cases, the number of which determines the appropriateness of a model decision, the court hearing one or more such cases may apply to the Supreme Court to consider one of them by the Supreme Court as court of first instance. The decision of the Supreme Court in a model case is subject to review by the Grand Chamber of the Supreme Court according to the rules of review of decisions on appeal.

The main advantage of the procedure of consideration of an exemplary case is that when there is a series of monotonous cases on the application of the rule of law, the higher court immediately expresses its legal position, which will be taken into account in all similar cases (Oksyuta, 2018). That is, exemplary cases are aimed at unloading the courts and serve to establish judicial precedent.

The advantages of the researched institute are fully used by the Supreme Court. At the same time, among the shortcomings of this institution is the high dependence of the fate of hundreds of disputes on one particular

case, which may have some shortcomings due to some circumstances, or if the plaintiff is not qualified to defend his position. Moreover, in the future it will be almost impossible to change or reconsider such a decision. This risk, according to Professor T. Podorozhna, can be offset only by high-quality and impartial consideration of the dispute by judges, who, if necessary, will fill the gaps (Podorozhna, 2019).

In total, the Supreme Court considered 85 exemplary cases: passed 17 decisions in exemplary cases, 12 of which entered into force, some decisions were appealed to the Grand Chamber of the Supreme Court, although not all of them have now completed the appellate review (Exemplary cases, 2020, p. 2). At the same time, the question of qualifying cases as exemplary constantly arises in the Grand Chamber of the Supreme Court. Yes, the largest is the category of cases that cannot be classified as exemplary, as they are related to disputes concerning the referral of a case by a court of first instance, similar to those in which the Supreme Court and previous courts of cassation have already formed. The quantitative criterion for refusing to initiate proceedings in an exemplary case is the second largest category, but this is a small number of typical cases in such legal relations, which does not make it appropriate for the Supreme Court to consider them as exemplary.

In addition, compliance with the purely quantitative criterion alone is not sufficient to consider an administrative case essentially exemplary. Therefore, the Supreme Court is subject to legal assessment, first of all, the criterion of typicality of the case. However, according to the case law of the Supreme Court, the case has no typical features under the following conditions: there is no dispute over the correct application of the substantive law; in the case of a court decision on the merits of the claims, the dispute between the plaintiff and the defendant in a particular case will be resolved.

Conclusions

It should be noted that an important element for the development of the institution of an exemplary case is the appellate review by the Grand Chamber of the Supreme Court of cases in which decisions are made by the Supreme Court in the first instance. Thus, the fifth group of cases to be reviewed by the Grand Chamber are decisions taken in exemplary cases.

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COMPARATIVE ANALYSIS OF THE QUANTITATIVE INDICATORS OF THE CONSTITUTION OF THE REPUBLIC OF POLAND 1997

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Abctract. The article sets out the main provisions of the Constitution of the Republic of Poland 1997, which have been analysed using the quantitative indicators of the legal act. It has been established that the greatest amount of text is devoted to the rights, freedoms and duties of human and citizen, as well as to the guarantees of their protection. The comparative analysis of the description and quantitative indicators of the law sections that determine the activities of the President of the Republic of Poland, the Sejm, the Senate and the Polish judicial system is carried out. The article deals with the proven facts devote considerable attention to religious issues, as reflected in the preamble to the Constitution of the Republic of Poland and in separate Articles of the document, because of the historical development of Poland and the outstanding role of the Catholic Church in the process of national renaissance.
Keywords: *legal regulation, Constitution, Republic of Poland, human and civil rights, public authorities, concordat.*

Introduction

The relevance of the study stems from the constitutional reform under way in Ukraine. In order to achieve this, it is necessary to consider similar experiences of other countries at different stages of their State development. From this standpoint, the development of the constitutionalism of the Republic of Poland is of considerable interest in view of the similarity of the historical and legal processes that have taken place in that country in the past and are currently taking place in Ukraine. These are, for example, periods of statelessness and renewal, the transition from the socialist model

of the politico-legal order to the market model, the existence of a long period of communist rule during which declarative constitutional acts were adopted, which were only partially implemented. Ukraine and Poland share what can reasonably be regarded as the first European states to adopt constitutional acts, the Pylyp Orlyk Constitution 1710 and the Constitution of Poland 1791 known as the May Constitution.

The interest in the Constitution of the Republic of Poland 1997 is also non-university because it laid down the legal bases for Poland's accession to the European Union, the harmonization of legislation and the holding of elections to the European Parliament. Now Ukraine faces a similar situation with regard to joining the European Union, which requires a solution based on foreign experience, including Polish.

Thus, the study of the basic provisions of the Constitution of the Republic of Poland 1997 (hereinafter referred to as the Constitution of Poland 1997) will help to avoid errors in the reform of the legal system of Ukraine, taking into account the updated vectors of law and the State development.

The scientific novelty of the work is the use of the system of quantitative indicators proposed by B. Kindiuk and O. Kopylenko, which makes it possible to move from the descriptive characteristics of constitutional acts to their substantive analysis.

The analysis of publications shows that research on the 1997 Constitution of Poland is a topic not frequently addressed by domestic scholars. For example, V. Shapoval, B. Tyshchyk, O. Rever, M. Marchuk, P. Stetsuk and some other authors have addressed this issue. In the implementation of this publication, two editions of recent years have been important, which are directly concerned with the analysis of the history of the establishment and development of Polish constitutionalism. A considerable number of scientific studies have been carried out by Polish scientists such as M. Bartoshevich, E. Kowalski, M. Khashkovska, P. Vinzorek, J. Schumanek. Thus, the issues related to the study of the Constitution of Poland 1997 are of considerable scientific and practical interest and require further elaboration.

The purpose of the article is to study the basic provisions of the Constitution of the Republic of Poland 1997 using the method of calculation of quantitative indicators.

Presentation of the main research material should be presented in three ways: 1) review of the background of the document; 2) calculation of the quantitative characteristics of the Constitutional Act; 3) analysis of the structure and provisions of the Constitution of the Republic of Poland 1997.

Polish Constitutionalism has a long and complex history, which began with the adoption of I. Piłsudski in the Decree on the Most Representative Power 1918, the Small Constitution 1919, the Constitution of II Rzeczpospolita 1921, the Constitution of II Rzeczpospolita 1935, the Constitutional Law on the Organization and Competence of the State authorities 1947, the Constitution of the Polish Republic 1952.

The latest constitutional process was started by the adoption in April of the Constitutional Law «On the Preparation and Procedure for the Adoption of the Constitution of the Commonwealth» 1992, which established the obligatory submission of the draft Constitution to a referendum. In October 1992, a Small constitution was adopted.

A Constitutional Commission consisting of 46 members of the Sejm and 10 senators was formed to draft the document, and leading scholars and practitioners were engaged. A total of seven draft laws of the Basic Law were submitted, but for reasons of dissolution by the President of Poland in May 1993, they were not considered. A new Constitutional Commission was reconvened by Parliament. During this period, 6 more drafts of the Constitution of Poland were drafted and the Parliament began its consideration in 1994. A consolidated draft of the Basic Law was subsequently approved. Under the legislation in force at the time, a referendum was held in Poland on 25 May 1997 in which 52.7 per cent of the electorate voted in favour of the draft Constitution of Poland, on the basis of which the President of Poland, Alexander Kwasniewski, signed the text of the Constitution of Poland on 16 July 1997, entered into force on 17 November 1997. In the opinion of B. I. Tyshchyk, the Constitution of Poland is democratic, it regulates in detail the issues of socio-economic, State-political life and contains a significant list of rights, freedoms and duties of human and citizen (Tyshchyk, 2012, p. 465).

A study of the main provisions of the Constitution of Poland 1997 requires methodological tools. As noted by V. Kampo, a new generation of methods based on the synthesis of natural-legal, civilizational, legal, sociological, psychological and many other methods is on the agenda of the methodology of constitutional and legal research (Kampo, 2014, p. 161).

The research uses a methodology for calculating quantitative indicators, which contains a definition of the number of signs included in Articles, sections and, in general, all legal acts. For the analysis of the distribution of the material, statistical indicators are used - the coefficient of variation Cv, which shows the variation of the sum of the signs according to their average value, and the coefficient of asymmetry Cs, by which the part of the act contains the bulk of the text can be determined. This method was used by B. Kindiuk and O. Kopylenko to study the Criminal Code of Ukraine and the Law of Ukraine «On Environmental Protection», which made it possible to obtain important scientific results. Therefore, it makes sense to apply the quantitative methodology to the study of the Constitution of Poland 1997 (Constitution of the Republic of Poland. Constitution of the States of Europe, 2001).

Table 1.

Quantitative indicators of the Constitution of the Republic of Poland 1997

Number	Section	Total number of signs	Number of Articles	%
	Preamble	1563	-	1.74
I	Republic	5711	29	6.37
II	Freedoms, Rights and Duties of Human and Citizen	17589	57	16.6
III	Political rights and freedoms	3531	8	3.94
IV	Sejm and Senate	11628	31	12.9
V	The President of the Republic of Poland	10015	20	11.8
VI	Council of Ministers and Administration of Government	7056	17	7.88
VII	Territorial self-government	3019	10	3.37
VIII	Courts and tribunals	9936	29	10.1
XIX	State monitoring and rights protection authorities	4105	14	4.58
X	Public finance	4776	12	5.33
XI	Emergencies	4078	7	4.55
XII	Constitutional amendment	1459	1	1.6
XIII	Transitional and final provisions	4934	8	5.5
	Total:	89524	243	

Calculations have shown that the total number of signs comprising this legal act is 89,524 and they are located in 243 Articles, grouped into 13 sections (Table 1).

In comparison, the Constitution of Ukraine 1996 contains 114,904 signs in 161 Articles contained in 13 sections, which is 22 per cent more than the Polish Act.

The analysis of the results obtained shows that the largest amount of Section II «Freedoms, Rights and Duties of Human and Citizen» of the Constitution of Poland 1997, which has 17,589 signs located in 57 Articles, accounts for 16.6% of the total amount of material. It consists of five parts:

1. General provisions.
2. Personal rights and freedoms.
3. Political rights and freedoms.
4. Economic, social and cultural rights and freedoms.
5. Responsibilities.

Such details of rights and obligations are linked to Poland's historical experience, the occupation of foreign States and the total violation of human rights during the communist era, and the imposition of martial law by General V. Jaruzelsky in 1981. Therefore, Article 30 of the Constitution of Poland 1997 proclaims the inviolability of the dignity of human beings, the safeguarding of their freedoms and rights, and indicates that their protection is a fundamental duty of the State. The subsection 2 «Personal rights and freedoms» regulates in detail the prohibition of torture, cruel inhuman treatment, use of corporal punishment and subjection to

scientific experimentation without the person's consent. Considering the numerous crimes of the Fascist invaders during the Second World War, as well as the Soviet forces suppressed the protests in the territory of Poland, Article 43 of the Constitution of Poland 1997 contains a norm, which determines the non-applicability of statutory limitations for war crimes against humanity.

The subsection 3 «Political rights and freedoms» defines guarantees of freedoms and organizations of peaceful assemblies, associations, participation in them, the right to receive information about the activities of public authorities. The historical experience of the Polish State development related to the activity of the trade union «Solidarity», which led to the collapse of the communist regime in the country, was reflected in Article 59 of the Constitution of Poland 1997, dedicated to trade unions and consists of four paragraphs. Thus, the right to freedom of association, the right to organize strikes and to negotiate for the settlement of collective disputes is provided for. It is noted that the scope of freedoms of association in trade unions may be restricted by law, but only in accordance with international treaties.

The subsection 4, which deals with economic, social and cultural rights and freedoms, regulates the right to property, the right to safe working conditions, social security, health care and education. The humanization of Polish law and respect for the family are reflected in Article 72 of the Constitution of Poland 1997, which consists of four parts and is devoted to the protection of the rights of the child. Of interest is Article 72, paragraph 4, of the Constitution of Poland 1997, which introduces the post of Ombudsman for the Rights of the Child and the need to adopt a law defining its powers. A special feature of this unit is its presentation of the rules for the protection of nature, which are reflected in Article 74 of the Constitution of Poland 1997, which contains four paragraphs: they emphasize the duty of the State to ensure environmental security and to support citizens' actions aimed at protecting the environment.

The novelty of the Constitution of Poland 1997 is the existence in Section II Article 85 of the alternative variants of the exercise of the military duty of a Polish citizen, providing for the replacement of the latter by other types of service determined by law, where there are religious beliefs or moral principles which impede the military service performance.

The second largest part is Section IV «Sejm and Senate», which consists of two parts: a) deputies, senators; b) organizational activities. It contains 31 Articles and 10,015 signs, or 11.8% of the total material.

The Polish Parliament has an upper chamber, the Senate – 100 senators, and a lower chamber, the Sejm – 460 deputies. Deputies are elected by direct universal suffrage for a term of four years. Dissolution of the Sejm means simultaneous termination of the powers of the Senate. A feature of the Constitution of Poland 1997 is the decisive role of the Sejm in law making, since it considers draft laws, after which they are submitted to the Senate. This authority has the power to call a referendum, decide on the course of the war. to make peace and establish commissions of inquiry.

The third largest Section in the Constitution of Poland 1997 is Section V «The President», which contains 10 015 characters in 20 Articles, accounts for 11.8% of the total volume of the document. The President of the Republic of Poland, according to Article 126 of the Constitution of Poland 1997, is vested with the supreme representative functions of the State at the international level, he is the guarantor of the continuity of State power and the supreme commander-in-chief (Article 134 of the Constitution of Poland 1997). The President is elected by universal suffrage for a term of five years and may be re-elected only once. He has wide powers, some of which are exercised at its discretion and without the signing of its acts by the President of the Council of Ministers of Poland. V. M. Shapoval is talking about the varying degree of participation of the President of Poland in the work of the Government. For example, in order to resolve issues, it is of particular importance that the President of the Republic of Poland is authorized to convene a Government Council, which meets under his chairmanship (Shapoval, 2007, pp. 366-367).

A characteristic feature of this section is the use of Article 131 of the sanctions rules, which make it possible to eliminate the President of Poland by decision of the State Tribunal. At the same time, Article 145 of the Constitution of Poland 1997 enumerates the reasons why the President of Poland may be prosecuted, namely: for violation of the

Constitution, for violation of the law, for commission of an offence. The indictment requires the approval of at least 2/3 votes of the lawful number of members of the National Assembly upon the proposal of at least 140 members of the National Assembly.

The fourth largest part in the Constitution of Poland 1997 is Section VIII «Courts and Tribunals», which consists of 29 Articles containing 9936 signs or 10.7% of the total amount of material. Under Article 173 of the Constitution of Poland 1997, these authorities have a separate authority independent of the other authorities. Thus, the judiciary consists of the Supreme Court, courts of general jurisdiction, administrative courts, including the Supreme Administrative Court, military courts, the Constitutional Court and the State Court. The State Court exercises a control function, the Constitutional Court resolves disputes over competence between the central constitutional authorities of the State (Article 189 of the Constitution of Poland 1997).

The smallest number of signs (1459, or 1.6% of the total volume of material) is in section XII, containing 1 Article. However, this section plays a significant role in the Constitution of Poland 1997. It defines the procedure for amending the Basic Law. The consideration of the provisions of Article 235 shows the existence of a complicated procedure, which begins with the submission, signed 1/5, of the total number of Sejm deputies. However, the Senate and the President of the Republic of Poland may introduce such a bill. Another important provision is that the Act amending the Constitution of Poland shall be adopted by the Sejm by a majority of at least 2/3 votes in the presence of at least half of the legal number of deputies, and the Senate – by an absolute majority of votes in the presence of at least half of the legal number of senators.

The digital values of the quantitative indicators of the Constitution of Poland 1997 sections make it possible to construct a graph of the volume of the material which shows the uneven distribution of the material in the document (Figure 1).

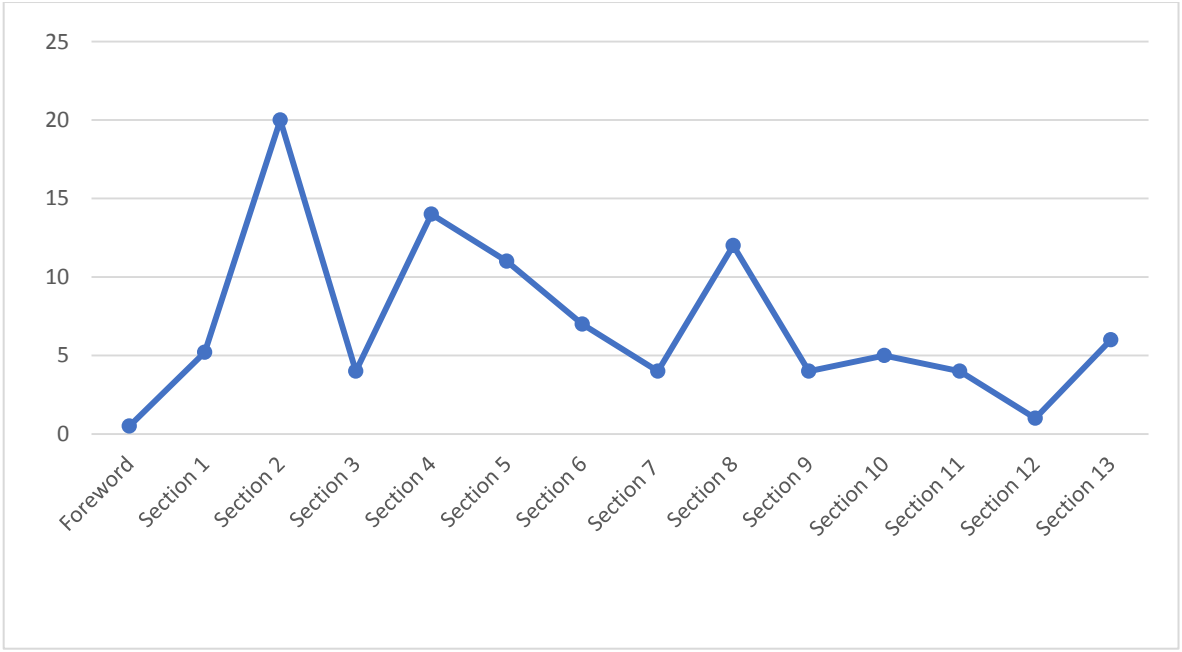

Fig. 1. Distribution of act material of the Constitution of the Republic of Poland 1997 (%)

The review of the results shows that there are three maximums, which show that the authors of the document have not been able to distribute the legal material evenly. Another proof of this provision is the calculation of the coefficient of variation showing the scale of variation relative to the mean value Cv, equal to 0.97; the value of the coefficient of asymmetry Cs is 2.21, which means that the bulk of the textual material is concentrated in the beginning of the Constitution of Poland 1997.

An analysis of the structure of the Constitution of Poland 1997 shows that it meets the formal requirements of legal technique, that is, it consists of a preamble, a general part and transitional and final provisions, and contains a list of acts that cease to have effect with its adoption, and the date of entry into force.

The Constitution of Poland 1997 has a three-tiered structure (Constitution -> Section -> Article). Some sections are divided into subsections. These are Section II, Section IV, Section IX, which do not have through numbering. For example, section IV «Sejm and Senate» contains the following subsections: Elections and terms of office; Deputies and senators; Organization and activities.

The Constitution of Poland 1997 begins with a preamble that sets out its main objectives, namely the establishment of a sovereign, democratic State in which justice reigns. Reference is made to the enormous sacrifices made by the Polish people in the struggle for independence. An important provision is the need to protect human rights and freedoms, preserve human dignity and respect for justice and social dialogue. Attention is drawn to the tradition of republican rule in Poland. According to O. Mazaieva, the preambles reflect the basic ideas, concepts and doctrinal views that make up the text, while at the same time providing value guidelines for the national legislation development (Mazaieva, 2012, p. 304).

The social and legal meaning of constitutions is reflected in the types of constitutional norms, the different relationships they regulate, the legal significance and form of expression, namely, norms-rules, norms-principles, norms-definitions, norms-symbols, norms-issues (Habrieva, 2005, pp. 53-56).

In the construction of Section I of the Constitution of Poland 1997, the authors of the act used the task rules which determine the direction of the Polish State development and law making. For example, Article 1 states: «The Republic of Poland is the common good of all citizens».

The Constitution of Poland 1997 is characterized by a significant amount of religious material, which is set out in the preamble, Articles 25, 53 and amounts to 1,842 signs, or 2.1 per cent of the total material. This was due to the historical development of Poland, which was long divided between the Russian and Austro-Hungarian Empires, part of the land belonged to the Kingdom of Prussia and later to the German Empire. For this reason, the Polish population, which was mainly Catholic, was subjected to religious persecution by German Protestants and the Russian Orthodox Church. Under foreign occupation, Catholicism was the centre of the unity and revival of the Polish nation, which effectively countered German influence during the Second World War and Soviet influence in the post-war period. With this in mind, the authors of the Constitution of Poland 1997 in the preamble point to the belief in God as a source of truth, justice, goodness and beauty, as well as to the Christian heritage of the Polish people. In considering this peculiarity, it must be borne in mind that the content of the Constitution of Poland 1997 was influenced by the existence of a concordat signed in 1993, which introduced religious education in secondary schools and kindergartens, introduced pastoral service in prisons and hospitals, established a special mechanism of financial relations between the State and the Church.

Under Article 25 of the Constitution of Poland 1997, churches and other religious organizations were recognized as equal, and the Polish authorities were required to ensure freedom of expression of religious views in public life. One of the provisions of this Article is the stipulation that relations between the State and the churches. It is based on the principles of mutual independence and cooperation for the benefit of individuals and society. As stated in paragraph 4 of this Article, the relations between the Republic of Poland and the Catholic Church are determined by an international treaty concluded with the Apostolic Chair.

Freedom of religion, in turn, is enshrined in Article 53 of the Constitution of Poland 1997, according to which every Polish citizen is guaranteed freedom of conscience and religion, the right to worship, rites, prayers and the right to religious education. The Basic Law imposes on parents the obligation to provide children with moral and religious instruction in accordance with their beliefs. In addition, Article 53, paragraph 4, of the Constitution of Poland 1997 stipulates that religion may be studied at school without violating the freedom of conscience and religion of others.

Conclusions

The findings of the study are as follows:

1) the reason for the Constitution of Poland 1997 adoption was to ensure the transition from the socialist model of the democratic State to a market model based on the rule of law, to stabilize the national statehood and to proclaim a policy of accession to the European Union;

2) the research of the Constitution of Poland 1997 structure revealed its three-tiered structure, the presence in some parts of it sections which do not have through numbering. According to the calculations carried out, it has been proved that the issues of freedoms, rights and duties of the human and the citizen receive the most attention. Section XIII of the Act, which deals with the complex procedure for amending the Constitution of Poland, has the lowest number of signs and ensures its stability;

3) the Constitution of Poland 1997 devotes considerable attention to religious issues, which are reflected in the preamble and in separate Articles of the document, due to the historical development of Poland and the outstanding role of the Catholic Church in the process of national reconstruction.

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INTRODUCTION OF INTERNATIONAL EXPERIENCE IN THE LEGAL REGULATION OF HIGHER EDUCATION INSTITUTIONS INTO UKRAINIAN PRACTICE

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Abstract. The article deals with the processes taking place in higher education institutions in the context of the use of international experience in the legal regulation of their economic activities. As well as finding effective measures to introduce world experience in the field of educational services is a priority in the organization of State policy in the country.

The article highlights the main factors inherent in the domestic educational sphere, identifies trends in the development of higher education in the world community and the application of the concept of the establishment of higher education, traditionally used in higher education in leading countries of the world community. It is *determined* that the effective application of the processes of the world experience of foreign countries, whose educational activities are characterized by the latest teaching methods, modernization and innovative provision, a fundamental change in the quality of educational services in Ukraine. *It has been* shown that the use of economically advantageous types of education to meet the needs of the labour market, to ensure a growing proportionality in the number of entrants without a significant increase in government spending on higher education, curriculum development teaching-oriented research can improve the existing level of vocational education. The research *highlighted* factors that have a positive impact on the formation of a single innovative process aimed at improving the economic activities of higher education institutions. It *has been established* that the implementation and improvement of economic activities should take place simultaneously at the State and local (regional) levels.

It was concluded that the process of legal regulation of the economic activity of higher education institutions should necessarily be characterized by the provision of quality educational services, effective teaching methods and upgrading to conform to new technologies, taking into account innovation.

Keywords: *higher education institution, foreign countries, innovative support, modernization of processes, education activities, professional education.*

Introduction

Drawing on international experience in the regulation of the economic activities of higher education institutions is a priority in the organization of State policy in the education. To study the effectiveness of the experience of countries whose educational activities are characterized by the latest teaching methods, modernization and innovative provision of competitive advantages of higher education institutions, priority areas for the application of such methods in domestic education have been analysed and prioritized.

Review and analysis of the recent publication. Many domestic and foreign scientists studied the world experience in educational processes, among which the work of N. Borovskaya, R. Gurevich, E. Mcguinness, Du Yanyan and others deserves special attention. The usage of international experience in the legal regulation of the economic activities of higher education

institutions, including in education, has been neglected.

The purpose of the article is to study the international experience of the economic activities legal regulation of the higher educational institutions and to introduce such practice to the extent appropriate in Ukraine.

Research methodology. The study of the state's experience in organizing educational activities in the world is based on the use of comparative jurisprudence, systemic, statistical and analytical methods, this permitted the analysis of the legislation of such countries as the United States, Israel, Canada, China and others and the legal, socio-philosophical literature is studied, statistical data on the cost of educational services in various educational institutions are processed. The proposals on the possibility of using foreign experience in the legal regulation of educational activities in Ukraine are developed in this article.

Research results. The main objectives of higher education institutions (HEI) in foreign countries are to introduce vocational and economically advantageous types of education to meet the needs of the labour market; increasing the proportionality of enrolment without a significant increase in government spending on higher education; development of teaching-oriented curricula that involve applied research; improvement of existing vocational education. Addressing these challenges encourages the search for other tools that will facilitate the understanding of the skills information obtained.

As in other countries of the world higher education is recognized as one of the leading sectors of the social development. The strategic directions for the development of higher education are defined by the Constitution, the Education Acts, the National Doctrine for the Development of Education, the decrees of the President of Ukraine, the decisions of the Cabinet of Ministers of Ukraine (Ilchenko, Cheiko, Poltava, 2014).

In connection with integration processes and the creation of a world educational space, such a paradigm should be fundamentally relevant and broadly shared throughout the world (Ortynskiy, 2009).

Educational reforms have become central to the renewal of the world's economies: China, the USA, Canada, and others. The race for excellence in education requires investment. The level of spending on education largely determines not only a country's economic potential but also its competitive advantage in the international arena.

One of the most important issues in the development of education remains its financing. There are various types of financial support for a student around the world. This support is provided in different ways, namely: preferential educational credit (Great Britain, Austria), grants (USA, Germany, France, Ukraine), housing subsidy for the period of full-time education (United Kingdom).

We can talk about the most common model of educational organization. So, for example, the American model assumes of course the autonomy of HEI in the virginal issues of functioning (usually by the independence professional association), built on the foundation of free and mobile coordination of educational organizations»(Baieva, 2010).

The Federal Government of the United States has no right to establish a national education system, i.e. higher education system, or to determine curricula for educational institutions (Amendment 10 to the Constitution of the United States). Relevant matters are the prerogative of the state or county government. In fact, the process of devolving administration and control to the local level was completed in 1972 when the United States Government finally decided to discontinue the provision of unearmarked funds to educational institutions (Johnstone, 2003).

The role of relevant non-State actorss in the management of higher education in the United States is very significant. They are called the «second power», which, along with the «first power» (Minister of Education and other officials of the Ministry who manage the departments of the Ministry, presidents and rectors of higher education institutions») forms the Institutional and the Public Policies of higher education in the United States (Supian ed., 2009).

In fact, the subjects of control are: State authorities (federal authorities) to the minimum extent necessary, regional authorities, non-State entities (regional and professional), and the leadership of the fastest-growing higher education institutions (as subjects of the previous stage - self-control - by State and non-State actors).

As E. Mcguinness proposed the type classification of the relationship between HEI

and regional authorities may also be the basis for the identification of control relationships between HEI and regional authorities in higher education (Mcguinness, 2005), and control of higher education in the United States is characterized by certain specifics for the individual states, taking into account the models of relations «state power – university» and differs in character within the range – «from strict total control (high level) to position narrow, generalized (low level)».

However, despite the high level of development and educational efficiency, the education sector currently faces many challenges: the high cost of education; the predominance of private institutions over public ones; the role of limiting the function of State authorities in the formulation and implementation of funding programs, and monitoring of compliance with legislation.

Israel is another country where positive experiences of educational services can be learned, which remains the leading country in the world for the development of education. Therefore study of economic activity and the adoption of the positive experience of that State will be relevant to the current legal and regulatory framework of Ukrainian education.

Every year, Israel allocates 10% of the country's GDP to education. It's several times more than in Ukraine (Romanovskyy, 2012). Education in Israel is regulated by a complex of laws: «On compulsory education» 1949 with subsequent amendments, «On public education», 1953, «On special education» 1988 (Nemyrovskaia, 2014).

Consequently, the educational process in the Israel HEI is managed independently by the student. The system of educational services in Israel follows the Western model, more precisely, the Anglo-Saxon model. At the same time, it should be noted that Israel is a participant in the TEMPUS program (the European Union-Partner Countries Divestiture Program in higher education) but is not included in the Bologna Process: at the forums of the Bologna Process Israel is listed as a observer-country and implements European standards at his discretion. This may make it difficult for Israel diplomas to be evaluated by Western experts – the number of points achieved by a student may differ from the standards set in Europe. Despite this, education in Israel universities is considered prestigious.

The experience of Canada is interesting as it has been identified as one of the best-known significant methodological and teaching experiences, characterized by high-quality research, high-quality professionals' training (Rusnak, 2004; Shapoval, 2011; Gurevych, 2006).

It should be noted that educational services in Canada are mostly provided by public education nstitutions. The provision of such services should be gradual, from the lowest level (pre-school education) to the highest level (higher education). Comparing the Canadian experience with the United States private colleges and universities make up a significant proportion of educational institutions. In Canada, the situation is different, and there will be fewer than three dozen private universities.

In considering the legal framework for educational governance, Canadian universities consider the Supervisory Board to be the highest management structure. It may include not only teachers but also students. As an important authority the Supervisory Board considers the financing of the university and has the right to dismiss employees by agreement and on the recommendation of the Rector.

The provision of «financing of Canadian universities is carried out from various sources, however, by the beginning of the 90th of the last century, the state allocations amounted to almost 85% » as H. Kozlakova asserts (Kozlakova, 2011).

One of the basic documents ensuring the right to education is the Canadian Charter of Rights and Freedoms, according to which the whole educational process is oriented to the needs and interests of the student and to ensuring adequate feedback in the system of «teacher – student» (teacher assessment forms completed by students, student satisfaction survey)» (Mykytenko, 2006).

Attention is drawn to the close relationship between the education system and the labour market. This relationship exists not only in Canada but also in other countries. Program changes and new directions are frequent and mobile. Overall, in Canada, the provision of education services is characterized by a high level of requirements, both for the producer of education services and, as a result for the quality of education services as well as for the consumer.

Exploring the foreign experience of the HEI activities it is also useful to look at the organization of higher education institutions in China. The main feature of Chinese education is its historical genesis: the first «Shuyuan» (academies) appeared there almost 1,500 years ago. Today, the education system of the People's Republic of China (PRC) has changed significantly and it's closer to the European system and is represented by colleges, universities and higher schools.

Educational services in the HEI are provided for three levels, namely: the first level (four or five years) culminates in the award of a bachelor's degree, the second level (two or three years) gives the chance to become a master, and the third level is a PhD.

In general the modernization of educational content in China is influenced by political, economic, cultural reforms, as well as the introduction of new technologies in the educational process. The content of higher education in China is being updated in line with developments in science and technology and world trends in educational development. This was manifested in the emergence of new subjects (computer science, online English, film and television, modern management, modern world economics and political science, basic computer design, computer programming, etc.), new specializations (computer science teacher, economics teacher, etc.), modernization of curricula and programs, etc.

In addition to the positive trends in higher education in China there are also negative trends, among them: maintaining the excessive ideological focus of the educational process in the institutions; uneven distribution of the HEI throughout the country; gap in the provision the logistical support to the training process in humanitarian HEI. However, positive trends prevail and it can be said that the process of modernization of education in the PRC is gaining new level.

Discussion of research results. In general, studying the legal regulation of the HEI economic activities it is useful to point out the problems that hinder the application of international experience in Ukrainian practice, namely: the different nature of the educational processes and the conditions in which they are carried out; the adaptation of one educational system to another or to its components may lead to the impossibility of practical application within the framework of existing legal regulations; rejection of the educational innovations implementation by the State, Government or educational authorities; lack of human resources to enable the practical introduction of innovative processes; lack of actual uniform standards of educational processes between Ukraine, Israel, Canada, USA, etc. in the education.

At the same time, carrying out the research of the legal regulation of the economic activities of the HEI from the standpoint of advanced educational systems, we note the following basic elements, which could be usefully implemented in Ukraine: The high percentage of GDP spent on education, the high cost of education on the market of educational services, and the possibility to choose courses of study independently within the limits of the specialization of studies, taking into account their peculiarities and proposed mandatory and selective disciplines; the student must play a core role in educational process, which pays for educational services and wishes to obtain them qualitatively; economic activity is directed to a high level of performance of the economic functions of the HEI; application of innovations in the economic activity process aimed at involving representatives of education and the authorities in the discussion and resolution of current issues; involvement of young people and students in the identification; discussion and proposals within the educational process. The combination of all of these implementation processes identified through international experience should ensure the formation of a single innovation process aimed at improving the economic activities of the HEI.

Conclusions

In the course of studying the problems of the use of international experience in the legal regulation of the economic activity of higher education institutions, it can be concluded that the provision of quality services in the educational activity becomes possible by such elements as the implementation of the 10-Top country best practices; ensuring effective teaching methods; ensuring the competitive advantage of one HEI over others and obtaining a high rating among the HEI; including efficiency in doing business and availability of investment resources.

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A SYSTEMS APPROACH TO SOCIAL RESPONSIBILITY MANAGEMENT

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Abstract. The purpose of the article is to substantiate the feasibility of a systems approach to the formation of social responsibility management as a result of corporate culture introduction. Theoretical aspects of the social responsibility essence in business are covered. It is determined that social responsibility management is a source of corporate social responsibility emergence. The basic principles of the enterprise socially responsible management in the system of corporate culture are identified. The internal and external structures of social responsibility management subsystems are designed. The list of measures within the social responsibility management in the external environment in accordance with the centers of responsibility is structured.
Keywords: *business social responsibility, social responsibility management, system of the enterprise corporate culture.*

Introduction

Profiting ceases to be a strategic goal of enterprise management. Awareness of the relationships between business and its external environment promotes the better understanding of the "social responsibility" concept. It should be carried out at the philosophical, sociological and psychological levels of cognition. But socially responsible business begins at the level of the proper management staff actions and their own vision of such process necessity.

Literature review. A. Lakhina points out that "business participation in solving social problems is either strictly regulated within the existing commercial, tax, labor, environmental legislation, or carried out independently under the influence of social and ethical principles and norms, specially established incentives and benefits in different countries" (Lakhina, 2009). However, the existence of at least one of these approaches is a obligatory condition for the proper functioning of any state. L. Golinach says that "state bodies can only establish the rules of such relationships, and the managers of enterprises should implement … idea of social responsibility in practice based

on specific situations in a particular area" (Pushkar, Holinach, 2018).

A. Kolot emphasizes that modern market systems stimulate market relations, which not only ethically achieve the main goal (profit) but also spend money on social projects (Kolot and oth., 2012).

Till now the essence of the concept of "social responsibility" is the subject of theoretical and practical discussions. The scientific community recognizes that the beginning of the modern literature on social responsibility was laid in 1953 when the first fundamental work "Corporate Social Responsibility" was published by Howard R. Bowen, Professor of Economics at the University of Illinois (USA) (Bowen Howard, 1953).

The author reveals the meaning of the of "social responsibility" concept as well as demonstrates how the social responsibility concept can be extended to business, how it is profitable for business to participate in social programs, what both economic and social benefits society can receive, and shows the possibility of further detailed study of social responsibility (Yarova, 2013).

Some scholars recognize only one area that is worth paying attention to while explaining the essence of the "social responsibility" concept. For example M. Friedman Fridman, (1970, p. 122) considers that the only business responsibility is to increase the profits of shareholders since business helps society by producing goods, providing it with the necessary services and creating jobs. According to the theory of A. Carroll (Carroll, 1979, p. 500) and G. Bowen (Bowen Howard, 1953, p. 7) support for social responsibility is in accordance with the economic, legal, ethical and discretionary expectations of society in this period of time, but such a statement, in our opinion, is rather imposing factor and pressure than own belief in expediency. Awareness of social responsibility not only as a commitment to society in terms of environmental protection, employee health, relationships with contractors based on corporate rules and regulations is set out in the works of Asher Meir (2015), Sh. M. Valitov, V. A. Malgin (2009, p. 171), O. A. Grishnova (2011, p. 54), I. P. Bulieiev, N. Yu. Bryukhovetska, O. V. Chernykh (2008, p. 36).

Addressing issues of corporate social responsibility should be systemic. This approach will increase the efficiency of this process.

The **purpose** of the article is to identify the main measures to be implemented within each of the subsystems of the corporate social responsibility system as a result of the implementation of social responsibility management.

Research methodology. The method of analogies, identification and systematization is used in the process of defining the essence of the concept of social responsibility management. The identification of measures in certain areas of social responsibility has been carried out.

Main material statement and research results. According to the World Bank definition corporate social responsibility (CSR) or the equivalent term business social responsibility (BSR) implies a set of policies and actions related to key stakeholders and values implemented within the current legislation as well as takes into account the interests of communities and the environment and the focus of business on sustainable development.

The term "the parties concerned" or "stakeholders" initially used in 1963 means "those groups without whose support the organization would cease to exist" (Demb, Noybauer, 1997, p. 26). From the very beginning the stakeholders list involved shareholders, workers and employees, customers, suppliers, creditors and society. An analysis based on the following concept and initiated in the works of I. Ansoff and R. Stewart and later M. Dosher and R. Stewart plays an important role in the planning of the corporation today. Currently the most common definition of the term "stakeholders" is the following: it includes all persons or groups of persons who influence the company's activities as well as all persons or groups of persons having been influenced by the company's activities.

Having analyzed all the above we can say that **social responsibility of management or social responsibility management** is a source of corporate social responsibility. That is modern management principles should contribute to the formation of a set of actions aimed at ensuring the safety and development of internal (welfare of employees, shareholders) and the external environment of

the enterprise (society and environment development) in particular and humanity as a whole without violating values and rules being the basis of the enterprise corporate culture.

The main reasons that motivate different companies to pay special attention to social responsibility are the following such as globalization and the associated competition growth; the growth in companies size and influence; the strengthening of state regulation mechanisms; "war for talents" – a competition to gain talented people; civic activity rise; the intangible assets (brands) role uplift (Chala, 2014).

In 1999 Kofi Annan officially used the "corporate social responsibility" concept for the first time at the World Economic Forum in Davos (Sardak, Bilskaya & Simakhova, 2017). In 2000 the UN initiated an international movement in the field of human rights, labor relations, the environment and the fight against corruption – the Global Agreement (UN GlobalCompact, 2000). The ten principles of the agreement contain the principles that should guide the management of enterprises in order to conduct socially responsible business.

Compliance with social responsibility is viewed as a definition of responsibilities and a management behavior philosophy that influences the behavior, actions of all staff at the enterprise, which in turn contributes to the sustainable development not only of the enterprise but also society as a whole.

Social responsibility should be shown to the company's employees, partners and contractors as well as the community, society and the state. This confirms the multi-vector phenomenon of conscious management social responsibility. Thus it is possible to identify the internal and external orientation of the social responsibility areas.

On the other hand, social responsibility is the result of the corporate culture existence implemented systematically in the enterprise in order to spread it to every employee of the enterprise.

From the perspective of such logic, we can describe the basic principles of socially responsible management of the enterprise in the system of corporate culture. Namely:

– the principle of responsibility. Responsibility to employees manifested in the provision of safe working conditions, decent motivation in the form of remuneration. Responsibility to the community manifested through partnership and social projects. Responsibility to society through the high quality products and services output.

– the principle of virtue. It consists in the implementation of national and international legislation on taxes, labor, and environmental requirements as well as strict compliance with the requirements of business agreements with partners and contractors.

– the principle of consistency in development. It implies creating of conditions for constant personal and professional growth of the company's staff and investing in the development of production in order to create new jobs.

– the principle of integrity and mutual benefit. It ensures the profitability of business owners and all stakeholders without violating public expectations and ethical standards.

– the principle of perspective. It aimed at taking care to ensure the conservation of resources for future generations and to avoid achieving goals in any way, regardless of the consequences.

We consider the above list to be basic principles that can be expanded or deepened depending on the strategic goals of both the owners and the management of the enterprise. But, as we see, they all have a different direction, both inside and outside the enterprise system. The given our assumption can be confirmed by the works of domestic scientists.

We agree with the conclusions of S. E. Sardak and K. S. Gaslenko (2017), P. Drucker (1994), Yu. Burlakova (2009), Zh. Zh. Balabanyuk (2012) relating CSR. It can be argued that a system approach is manifested in "the company's systematic responsibility for the product it manufactures to consumers, employees, partners, the community and the environment; effective interaction and bilateral dialogue between the company and society; an attempt to combine on a voluntary basis the social, ethical and environmental aspects of doing business in order to positively influence the company on society as a whole, the environment and solve the most acute social issues" (Sardak & Haslenko, 2017, p. 342). On the other hand it implies the responsibility of the company's management to satisfy the interests not only of society but also of the company. In our opinion, it is **the set of directions of social responsibility (vectors) that will form the sequence of actions by social**

responsibility management.

We consider the social responsibility management forms an internal corporate social responsibility within the company system. On the other hand socially conscious management emerges due to the existence of corporate culture. Getting and maximizing profits is not a goal in itself particularly when there is a need to take responsibility for the actions state and consequences of the enterprise.

There is a need to form subsystems of social responsibility management both in the internal system of "enterprise" and outside such system as a result of the system generation of corporate culture. The main internal subsystems should be those that are based on responsibility to employees, the state, contractors, consumers and society.

We offer the following structure of subsystems in social responsibility management within the system of corporate culture of the enterprise: ensuring occupational safety and health protection; motivation and staff development; subsystem of personality perception and formation of a favorable psychological climate; maintaining virtues; products quality and safety; ensuring the environmental friendliness of production.

Social responsibility management forms an internal corporate culture by carrying out activities within the above subsystem. By analyzing the state of internal corporate social responsibility, we take into account not only the basic responsibility which is determined by law but also the voluntary response of the company to social problems or issues that arise in its employees (Sethi, 1985, p. 115).

We have identified the main measures to be implemented within each of the subsystems as a result of the social responsibility management implementation.

S. E. Sardak and K. S. Gaslenko (Sardak & Haslenko, 2017) note that "one should start with the company's staff to initiate the introduction of the company socially responsible behavior since the organization employee embodies a somewhat simplified model of the organization. The statement that the degree of success of the company's employees reflects the level of success and competitiveness of the company is quite logical and not worth proving. Therefore, the company's attitude to its own staff is an internal corporate social responsibility. "The generation of a successful satisfied employee should be based on the three subsystems we offer such as motivation and staff development, occupational safety and health protection, personality perception and the formation of a favorable psychological climate.

The main measures of the motivation and staff development subsystem of should be the following: ensuring sufficient salaries to guarantee the normal existence of themselves and their families; use of motivational schemes in remuneration, providing material opportunities for the development of both personal and professional competencies; rewarding employees for personal achievements and successes; payment for employee training and advanced training; providing opportunities for participation in scientific conferences, symposia, participation in federations of specialists, international exhibitions; encouragement to learn foreign languages; formation of additional packages of social protection and pension insurance; crisis assistance to the employee or the family members; compensation payments to employees been made redundant.

Within the subsystem of occupational safety and health protection one should take such measures as: occupational safety, life and health protection; promoting safety and caution in the production process and performing their duties; motivation for the absence of accidents and injuries at work; punishment for violating safety rules; improving first aid skills; employees' interest in sports and a healthy lifestyle; smoking cessation bonus; partial or full payment of season tickets in gyms and sports complexes in the absence of their own.

The subsystem of personality perception and the formation of a friendly psychological climate should contribute to the complete absence of discrimination in the team; support for effective internal communications. This can be achieved as a result of constant analysis and consideration of the employees interests in making important management decisions, which means interaction with employees as key stakeholders (interested parties) of the company, the introduction of social programs to facilitate employee adaptation to innovation in the company, service of staff psychological support, the beginning of a joint collective recreation.

A. Kolot defines the main motives that encourage companies to use measures to strengthen internal corporate responsibility

(Kolot and oth., 2012, p. 342). Namely: guaranteed improvement of labor productivity indicators; avoidance of significant staff turnover due to professional development; the possibility of attracting the most competent specialists in the market; high probability of achieving stable development; the possibility of obtaining tax benefits and attracting additional investment for socially responsible companies; the company's goodwill is formed through Public Relations; additional opportunities to advertise a product or service through the public popularity.

In our opinion, the virtues support subsystem is one of the main consequences of the corporate responsibility system. Management's responsibility for compliance with tax, customs, economic, labor legislation in the course of economic activity should be not only as a desire to avoid administrative penalties, but as an inner conviction of managers through the perception of personal and social values. It is a set of measures to control the timeliness and completeness of additional payments, the presence of fraud in primary documents and accounting registers and transparency of financial and tax reporting. The organization's management should monitor the legality of tender procurement, bank credit lines, government grants and subventions. Avoiding corruption at the enterprise level in relation to local governments, fiscal authorities will increase the efficiency of the subsystem.

Ensuring products quality and safety is also systemic in nature and has a social focus. Two main regulators of sales on the world market such as "Requirements for specific characteristics of the product to protect human health" and "Requirements for specific characteristics of the product to ensure human safety" were identified in the work of L. Lipych, A. Fatenok-Tkachuk, K. Kutykina, (Lipych, Fatenok-Tkachuk & Kutykina, 2014, p. 127). Within these regulators it is possible to allocate the basic measures which will promote maintenance of high quality of products, goods and services. Namely: quality assurance of raw materials, components; ensuring sanitary requirements and products safety at all stages of the production process; control over the absence of prohibited components; quality assurance of finished products (compliance with storage conditions, packaging, delivery (availability of special equipment for transportation, no additional impurities to increase weight or technical characteristics), constant quality control to eliminate unforeseen situations. Implementation of ensuring products quality and safety subsystem not only ensures social contract, but also provides the company with the opportunity to increase sales and expand markets through the possibility of passing international certifications.

The subsystem to ensure the environmental friendliness of production, on the one hand duplicates some of the measures in the previous subsystem to achieve the "Requirements for specific characteristics of the product to ensure human safety" and on the other hand the mentioned subsystem is broader. Within the given subsystem the proper measures must be taken to ensure the safety of the entire production process. This is applied to such areas as: installation and commissioning of water, air, soil treatment facilities; reduction of emissions and production waste; ensuring proper and safe disposal of production waste or their recycling; attracting the possibility of using derived energy resources resulting from the processing of waste or spent resources; installation of energy saving technologies; providing measures to minimize the loss of raw materials and avoid shortages; implementation of environmental activities, in order to reduce the harmful impact on the environment (land reclamation, treatment of emissions before disposal, disposal of used products by consumers, the involvement of experts to assess the impact of the enterprise on the environment).

The enterprise management in providing all above mentioned subsystems in the enterprise system is a consequence of the enterprise corporate culture existence as well as the society expectation. By analyzing the works of domestic scientists on corporate social responsibility in Ukraine we can conclude that corporate social responsibility in the external environment should appear mainly in charitable activities aimed at certain categories of the population or objects (not directly related to the enterprise: preservation of cultural and historical heritage, targeted assistance, support for certain categories of the population, etc.).

In our opinion it is a much broader field of activity. As a result of the enterprise social responsibility management system existence an external environment is formed where

Table 1.

List of social responsibility management measures n the external environment

Social responsibility management direction	Measures
Responsibility to the community	- involvement of the local community in various social programs and actions for the purpose of its development; - participation in social programs to support socially vulnerable groups, motherhood and childhood; - participation in projects for the provision and development of housing and communal services; - support for the restoration of cultural, historical and religious sites; - health protection support, arrangement of events to promote a healthy lifestyle and involvement in sports, funding of professional sports teams; - assistance in the development of education and science, strengthening the material and technical base of educational institutions, support for gifted youth; - support for orphanages in general and orphans in particular; - support of local cultural events, development of national culture.
Responsibility for the preservation of the environment and resources	- recognition and implementation of environmental principles by the organization in its activities; - measures for land restoration, water purification …; - participation in ecological projects of the community and the state (clearing of riverbeds, forest plantations, cleaning of territories …).
Responsibility to state fiscal authorities and the state	- implementation of control measures over the filling of local and state budgets; - conducting a voluntary audit at the request of external users of information; - creation of additional jobs, investments in human staff development; - implementation of the laws of Ukraine; - interaction with the authorities, the public, the media; - assistance in eliminating the consequences of natural disasters, environmental and man-made disasters; - participation in support of victims.
Responsibility to buyers and customers	- constant improvement of the range and quality of the offered products and services; - increasing the environmental friendliness of both the product itself and its components; - ensuring fair competition; - participation in international exhibitions and competitions in order to improve; - use of non-aggressive and truthful advertising; - application of a loyal pricing policy.
Responsibility to contractors and partners	- implementation of business agreements on the timeliness of supply of goods and materials and payment for goods and services; - timely certification of products, goods and services; - control over the labeling and packaging of products.

Note: created by the author as a result of the sources analysis [2; 3; 8; 10; 17; 26]

social responsibility naturally arises in such areas as: responsibility to the community, responsibility for the preservation of the environment and resources; responsibility to state fiscal authorities, responsibility to buyers and customers, responsibility to contractors and partners.

Having studied the works of N. Bibik (Bibik, 2012), M. Deleniv (Deleni, 2014), A. Kolot (Kolot, 2013), O. Novikova (Novikova, Deych & Pan'kova, 2013), N. Sokol (Sokol, 2014) and as a result realizing that some measures may relate to different areas of social responsibility management we have identified and summarized the main activities in different areas of social responsibility management in the external environment (see Table 1).

The methods of analyzed activities can be various such as cash grants, charitable contributions and sponsorship, social marketing, equivalent funding, social investment, public-private partnership, delegation of the organization employees and others (Sethi, 1985, p. 112).

But even socially responsible business needs support and motivation. It should be manifested in a clear and non-contradictory legal support for business and charitable activities; state support of socially oriented entrepreneurship; availability of bank lending and public investment; transparency and simplification of business taxation procedures, availability of tax benefits; lack of bureaucracy and corruption. Such measures are external to the expectations of socially responsible business.

Conclusions

An implementation of all social responsibility management mentioned measures in both external and internal environment is possible only if there is a system of corporate culture based on universal, professional and moral principles at the level of the business entity and the state.

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INFLUENCE OF COMPOSITION AND TECHNOLOGICAL FACTORS OF OBTAINING COMPOSITIONAL MATERIALS OF IRON-SELF-FLUSIVE ALLOY ON PHYSICO-MECHANICAL CHARACTERISTICS

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Abstract. Studies of the mechanical properties of powder composite materials based on iron alloyed with self-fluxing alloys obtained by different technologies: pressing powder mixtures, followed by sintering in hydrogen, sintering billets in vacuum, impregnation. Depending on the method of preparation and the content of self-fluxing alloys, the hardness of the materials varies from 48 to 57 HRC, the flexural strength is from 1130 to 1350 MPa, and the tensile strength is from 550 to 660 MPa. The highest indicators are materials obtained by sintering in vacuum and impregnation.
Keywords: *powder materials, self-fluxing alloy, pressing, sintering, infiltration, stamping, hardness, tensile strength.*

Introduction

The rapid pace of development of industrial industries dictates the conditions for the creation of new materials and products from them, which would, along with high values of strength and durability, would be resistant to aggressive environments. When creating powder composite materials for work in heavy-duty units, it is necessary to take into account that such materials must be high-density, have high values of impact strength and corrosion resistance.

Literature Review. Modern production solves this problem by using alloy steel powders and high-energy methods of their compaction (Stepanchuk, Demy`denko, Biryukovy`ch, Shevchuk,

2013), (Stepanchuk, Bilyk, 2016) which are energy-intensive, technologically complex and do not always allow to obtain satisfactory performance.

One of the options for obtaining high-alloy powder materials with a high density of products is sintering in the presence of a liquid phase or impregnation of porous frames with a low-melting metal (Dubovyj, Stepanchuk, 2007) bond. In this case, as a low-melting metal component that forms a liquid phase during sintering or the melt of which permeates the porous frame, it is advisable to use self-fluxing alloys (SFA), especially on the basis of iron (Stepanchuk, 2013). The latter have a relatively low melting point up to 1100 ° C and high mechanical characteristics - hardness and toughness, wear resistance. In addition, such alloys are resistant to oxidation due to the fact that they have the property of self-fluxing (Stepanchuk., Demydenko, Demydenko, Shapoval, 2012).

Based on the above, the study of the conditions for obtaining such materials and their properties in order to determine the areas of their application is a very important task. The aim of the work was to study the influence of the composition of materials from Fe - SFA compositions and methods of their compaction on some mechanical properties - hardness, flexural strength and tensile strength. Materials for the study of mechanical characteristics were obtained by three technologies in the optimal modes defined in (Demydenko, Stepanchuk, Shapoval, 2012):

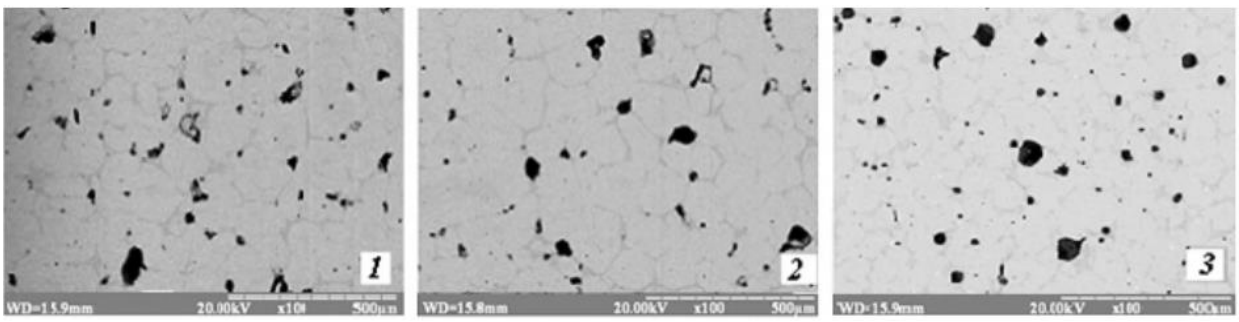
- pressing a mixture of source powders of iron and SFA, followed by sintering in hydrogen;
- pressing a mixture of raw iron powders and SFA, followed by sintering in vacuum;
- pressing from the original iron powders of porous blanks, followed by their impregnation with a melt of self-flux alloy in hydrogen and vacuum.

Research Methodology. In the case of obtaining materials by pressing followed by sintering in hydrogen, a mixture of powders of iron and self-flux alloy (Table 1) with different content of SFA - 10%, 15%, 20% and 30%, from which the samples were pressed at a pressure of 700 MPa and sintered them in a muffle furnace in hydrogen at a temperature of 1200 ° C for 45 minutes.

In the second case, the samples after pressing under the same conditions were sintered in a vacuum furnace in which a vacuum of 3.10-3 PA was created.

When obtaining samples, impregnations were pressed from iron powder into blanks with a pore volume, which would provide the content of the latter in the material in the material 10, 15, 20 and 30% when impregnated with SFA melt. Impregnation of porous blanks was carried out from below, as this leads to self-cleaning, the blanks were pre-sintered, as this contributes to minimal shrinkage and leads to the preservation of the original shape and size. The pore volume was determined by the method of work (Stepanchuk, Shevchuk, 2013).

Research results. The structure of materials obtained by the above technologies, their hardness, flexural strength and tensile strength were studied in the work. The structure was studied using a SEM-106 microscope. Hardness, flexural strength and tensile strength were determined by standard methods. The results are shown in Figures 1–3 and Table 1.



10% 20% 30%

Figure 1. The structure of composite materials with different content of SFA sintered in hydrogen

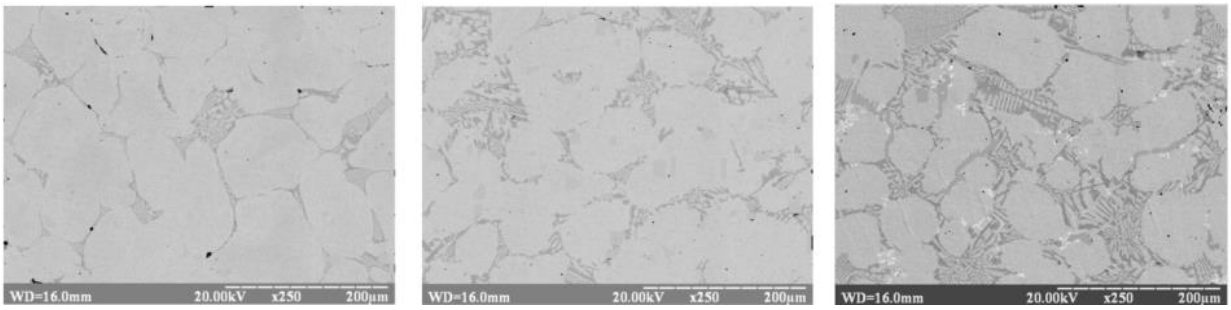


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Figure 2. The structure of the composite material with different content of SPA sintered in vacuum

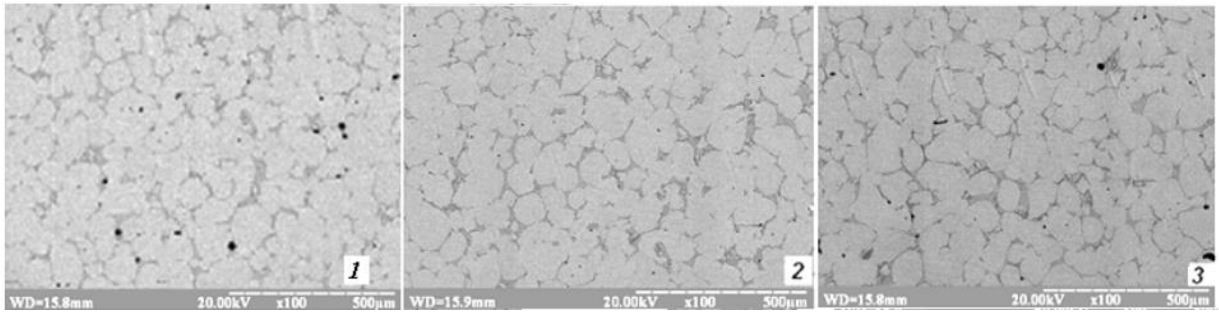

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Figure 3. The structure of the composite material obtained by impregnation

Metallographic studies have shown that the technology of production and composition of the material has a significant impact on the formation of the structure. Thus, samples sintered in hydrogen have a porosity (Fig. 1), which increases from 4% to 9% with increasing content of SFA (Table 1). The presence of porosity, as shown in (Demydenko, Stepanchuk, Shapoval, 2012) is due to the formation in the initial stages of sintering closed porosity. And the samples sintered in vacuum and obtained by impregnation have a non-porous structure (Fig. 2-3) with a uniformly distributed phase SFA. The formation of such a structure is facilitated by the absence of gas in closed pores during vacuum sintering and the absence of closed porosity during impregnation.

Discussion of research results. The study of physical and mechanical characteristics of materials shows that they depend on the porosity of the material and its content of SFA. As the content in the SFA material increases, the hardness increases from 20 to 48 HRC, and the flexural strength decreases from 1132 MPa to 965 MPa. The tensile strength remains virtually independent of the porosity (Radomyselskyj, Serdyuk, Shherban, 1985) and the content of SFA. This course of dependencies can be explained as follows.

The dependence of hardness should be consistent with modern ideas about the influence of porosity on the properties of powder products (Stepanchuk, Demy`denko, Biryukovy`ch, Shevchuk, 2013) according to which it should increase with decreasing the latter.

Table 1.

Characteristics of composite materials from compositions Fe – SFA

Method of obtaining	The content of SFA,%	Properties			
		Porosity,%	Hardness, HRC	Bending strength σ_{bs}, MPa	Tensile strength σ_v, MPa
By pressing with sintering in a hydrogen environment	10	8,86	20	1132	560
	20	8,35	35	1046	550
	30	3,80	48	965	562
Pressing with sintering in vacuum	10	1,12	30	1100	640
	15	0,82	52	1350	664
	20	0,23	57	1262	660
Melt	10	0,81	24	1260	620

impregnation of SFZ	15	0,54	28	1300	645
	20	0,61	42	1325	640
	30	0,25	52	1278	615

But the reason for the increase in the hardness of the materials studied in the work may also be an increase in their content of SFA, which has a much higher hardness (Stepanchuk, Bilyk, 2016) than iron. The reason for the increase in hardness may also be the interaction of SFA with iron. As shown in (Stepanchuk, Bilyk, 2016), the interaction between them is the diffusion of the components of the SFA (C, Ni, Cr, B, Si) in iron particles and as a consequence of the change of phase composition (Fig. 4) with the formation of solid solutions and complex iron carboborides, which have a higher hardness than pure iron.

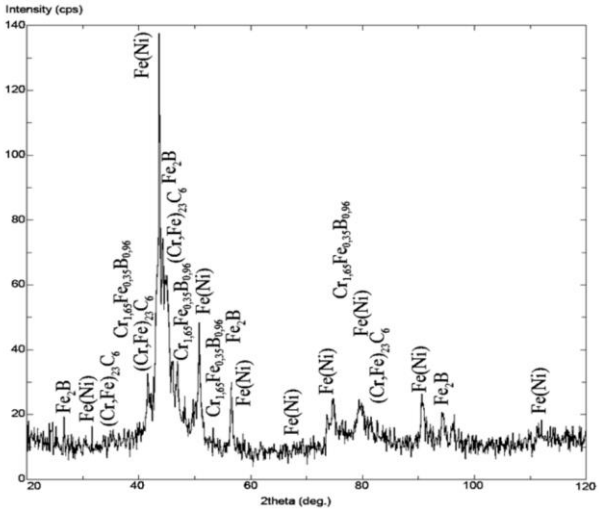

Figure 4. XRD of the composite material Iron –SFA

The study of tensile strength showed that it is weakly dependent on the porosity and content of SFA. Some non-monotonicity of the dependence may be due to competition from the effects of porosity and content of SFA. Weak dependence of tensile strength in the composition of the SPF may indicate that the predominant effect on the destruction of alloys Fe – SPF has a strength at the interface, the area of which in our case does not significantly depend on the content of SFA and can be estimated by the specific surface area of the original iron powder.

The study of the properties of the investigated materials obtained by pressing followed by sintering in vacuum showed that they are higher than in materials sintered in aqueous medium. In our opinion, the latter may be due to the fact that the obtained materials, regardless of their composition, have a porosity not exceeding 1.5 % (Fig. 2, Table 1) and have a structure with evenly distributed phase components. The phase of the SFA forms a uniform lace, inside which are placed grains of iron. Such a structure can be identified with "cellular".

Flexural and tensile strength is most important at a content of 15% SFA. An increase in the content of SFA leads to some decrease in these characteristics. The latter is consistent with the above considerations that the strength characteristics are predominantly influenced by the quality (strength) of the contact at the phase boundary. Increasing the amount of solid (brittle) component leads to some decrease in strength characteristics.

The properties of materials obtained by impregnation of porous frames from iron powder with a melt of self-flux alloy are similar to the properties of materials obtained by sintering in vacuum (Table 1). But in some cases, other things being equal (SFA content), they are slightly higher. Due to the similar structure of the materials obtained in this way, the latter can be explained by better refining of the surface between the grains and, thus, increasing its strength. The latter is consistent with the data of (Radomyselskyj, Serdyuk, Shherban, 1985) on the possibility of refining materials .

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Conclusions

Studies have shown that the use of self-fluxing alloys based on iron allows to obtain composite materials with their participation by methods of powder metallurgy with high density, mechanical properties and a given structure. By changing the conditions of obtaining materials, you can create them with predefined properties by changing the quantitative composition of the material and adjusting its structure, which should be frame. It is established that the materials obtained by the method of impregnation of porous frames from iron with a melt of self-flux alloy have the highest mechanical characteristics. In this case, along with the formation of the frame structure there is an increase in strength between the phase components due to the refining of the surface at the phase boundary during impregnation.

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MODERN APPROACHES IN EDUCATION – E-LEARNING

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Abstract. The article deals with the use of modern pedagogical learning technologies based on the use of ICT. The current need for the widespread use of other forms of education is the result of several current social phenomena, including those linked to providing access to education for members of the emerging information society. The crises that will survive today's education systems accentuate the mismatch of the traditional mission of the school with the new demands we face.

New and evolving approaches to learning and teaching that enable modern technologies are described by the author.

In the article digital technology is investigated as a common part of all areas of life. The article touches upon the issue of the forms of e-learning, its benefits and disadvantages.

Keywords: *modern approach, learning, teaching, educational process, interactive technology, e-learning, educational platform.*

Introduction

At present, significant changes due to the entry of technological innovation are indicated for education. The changes involve the teaching method and their perception by the pupils themselves. Given the trend in technology development within education, not only the teachers but also the students must be prepared for the active and creative use of new information and communication technologies. These can be used to improve quality and improve education and learning, as they can be better tailored to the needs of individual pupils and students therefore providing faster feedback. Using a modern approach to education, it is possible to support the achievement of the objectives of the Bologna process of modernizing the European Union in order to improve the quality and extend the reach of education throughout Europe.

E-learning. Education is no longer just a part of compulsory education, preparing for a future career but is becoming a lifelong mission. An ideal society should provide equal opportunities and access to education for all those who are interested. The pressure exerted on education also changes the strategy of educational institutions so that the design of education is taking into account the new requirements and possibilities of potential students' study. For all types of educational institutions, whether public, private or commercial, nowadays, if they want to meet the needs of education, only classical forms of teaching are not enough. Therefore, distance forms of education have come to the forefront in recent years.

It brings together not only didactic but also pedagogical goals and modern media, it also participates achieving the basic mission of all education: to liberate the human individual wherever possible, especially from limitation and ignorance. Telecommunications, computer networks, multimedia information and communication technologies have opened new avenues of learning for all kinds of educational institutions. Students can be educated independently of time and space. It is an easily accessible form of education, democratic and tailored to the needs of each individual, an education that will be provided everywhere and for all.

In today's globalized world, e-learning is an increasingly powerful tool, including adult education. In recent years we have witnessed

the electronification of almost all spheres of our society. E-learning, is and has ambitions to be a good tool also in higher education, given the decreasing number of full-time hours, as part of individualization in education, the personality traits of the current generation and the transformation of the current web. In terms of the quality of education provided, it is important to offer pupils and students innovative forms and methods of education, which undoubtedly include e-learning. There are a number of system solutions in e-learning that differ in the use of technology and are affordable (Piskura, 2017).

Emphasis is placed on independent learning, which has many different forms; different methodological approaches are used and it is as flexible as possible. Concepts such as independence, multimedia and interactivity are emphasized. It was created as a comprehensive set of educational principles and rules that enable people to study simultaneously with full economic and social activity and practically independent of the real distance from the educational institution.

The educational form is usually based on self-study, so that that the student will have complete study material. This can sometimes prevent a quite complicated search and collection of study materials. The study content is processed into a methodically produced and detailed study and electronic teaching materials. The study is continuously monitored and coordinated by an educational institution; Depending on the study needs, it is supplemented by a compulsory or optional meeting with the tutor (Oliveira, 2014).

Definition of e-learning. E-learning is any learning using ICT. Using new multimedia technologies and the Internet, it aims to improve the quality of the cognitive process, which will facilitate access to a variety of resources and services and allow the remote exchange of information and collaborative learning. The Educational Vocabulary defines e-learning as learning in which the acquisition and use of knowledge is distributed and facilitated by electronic devices. E-learning is an innovative approach providing a quality interactive learning environment, with a focus on learning, easily accessible to anyone, anytime and anywhere using a variety of digital technologies, as well as other forms of learning materials that are suitable for an open, flexible and distributed learning environment.

Forms of e-learning. The basic condition for e-learning is the connection of the educational process with ICT. Given the wide range of technology applications, e-learning offers a range of services that are useful in teaching and learning and to some extent determine the appearance or form of e-learning. The basic division of e-learning takes into account whether or not the computer is connected to the network (Kabátová, 2013).

There are two types according to this criterion:

- **Off-line learning:** The student's PC does not have to be connected to the computer network. The study material is distributed on various data carriers. This form of e-learning is known as CBT - Computer Based Learning. In general, the term CBT is used to denote any support for the educational process. This method is currently used primarily for home preparation of pupils or students working with educational programs. Its disadvantages can be considered the impossibility of simply and rapidly updating the education's content and direct communication between participants.
- **Online education:** the condition is the involvement of the pupil's PC in the computer network. The study material is distributed through a network of channels. In addition, distributing educational content, this form of communication also enables communication between students and teachers and between students. Communication can take place in two ways, asynchronously and synchronously.
- ***Asynchronous*** - Participants are not logged in at the same time and can only communicate with each other using asynchronous means of communication. Asynchronous learning refers to real learning anywhere, anytime; the student is not dependent on anyone and studies when and where he/she wants; such as CD-Rom learning, educational audio and video media, or discussion forums. Asynchronous studying is characterized by the fact that the student spends most of his time guided by self-learning. Greater demands are placed on student autonomy. The principle of group work is suppressed and the student is not motivated to acquire new knowledge from classmates. In the

same way, natural competitiveness is suppressed and so a higher motivation of the student is needed. The advantage is independence from time, place, as well as a weak Internet connection.

- ***Synchronous*** - all participants are simultaneously logged in and communicate in real time; this is on-line communication between students and tutor; everyone can be in different places, but at the same time, the condition is an internet connection; examples of synchronous communication include online courses, audio/video conferences, internet calls, virtual classes, chat. This is based on the assumption that the study is conducted using virtual classes, videoconferences or discussion forums. The question of group cooperation, which arises from the possibility of synchronous communication, comes to the fore. Students can work together, create projects and motivate each other (Barešová, 2011).

Education through videoconferencing. Video conference learning brings the specifics of the challenge whether we are participants as proponents, providers or trainees in educational lessons. However, there is also a need to invest in education and training for all players, in particular focusing on the methodological aspects of using videoconferencing and ensuring that the resulting work is carried out effectively. Videoconferences are a form of synchronous remote communication via audio and video transmission and the possibility of integrating text and other forms of information presentation. The quality of this form of communication depends on the communication technologies used and the transmission communication network.

The participants in the videoconferencing training process are usually spatially distant from each other. Separation in space is typical of education, referred to here as distance. Videoconferencing opens up new opportunities for education in virtually every area of life today, whether it's education for doctors, biologists, managers, and the like. This brings us to the next relevant keyword, open education. Terms such as open, distance and flexible education are based on a concept other than traditional learning (Chovanec, 2018).

Basic principles of videoconferencing. Video conferencing is currently one of the most modern means of communication between people. It is based on two-way audio and video communication, allowing participants to communicate with each other, see and hear each other, even though they are often very distant geographically. This is synchronous communication that actually requires the participants to be physically present at the same time but not tied to its location.

Generally speaking, videoconferences are taking communication to a new quality level, which is very important in today's collaborative working style. Video conferences provide the opportunity to communicate via electronic channels in the most natural form, because both audio and video are transmitted at the same time. Video transmission is not the only added value that video conferencing enriches communication. In addition to the usual communication activities performed when calling a videoconference, it not only allows us to see the partner we are communicating with, but also lets us develop new ways of collaborating between the participants in the communication. It is possible to watch documents open on a computer during one video conference meeting and even allow any participant to edit them. It is also possible to share a common desktop and actively intervene, or hold discussions and share files with the necessary data (Nemec, 2018).

Conclusions

Benefits. The benefits are obvious. The fact that video conferencing improves communication increases productivity and reduces costs. It is not necessary to travel to see and hear students who are in distant places. Students can be shown all the necessary things such as pictures, graphs, videos, computers, files, pictures, as well as allowing them to talk to experts, letting them solve various tasks while watching them solve them. And in return, students can do the same things; they can show their video sequences, charts and photos. The role of the teacher is to develop a discussion on a given topic, as well as to foster student conversation.

Videoconferencing enhances the quality of education by creating conditions for natural communication where there is no other solution. Videoconferencing meetings are often more efficient because they are usually time-limited and carefully planned. Videoconferencing is great for distance learning. With this technology distance learning is hardly distinguishable from the traditional classroom. The teacher does not have to rely on the fact that, for example, the assignment sent by post is produced by the student him/herself, but he/she can be in control of the process. Video conferencing can address situations for schools where teachers who attend lectures from a distance are taught. It would save time and money.

Video conferences help reduce the costs of educational institutions as educational needs grow in the following ways:

- new information can spread more quickly,
- participants' needs can be met more quickly by learning in real time,
- more participants can be trained more quickly without increasing training centers,
- experts in the field can participate in education at low or zero cost,
- the timetable is more flexible - courses can be offered at any time during working days,
- participants and their teachers can stay in their usual work place, increasing employee availability and significantly reducing travel time and costs (Langer, 2016).

Disadvantages. Obviously, videoconferencing is simply trying to replace the full-time form of education by using electronic means. There are areas where this compensation is not sufficient and therefore videoconferencing is not always an adequate form of reporting. The teacher must respect the technical limitations of this technology. He/she must avoid all sudden and rapid movements, not come out of the camera range, also some fine details or facial expressions may be misinterpreted in the video encoding and decoding process and even if it sounds counterproductive, using image compression is recommended to reduce the visual information we send.

Another disadvantage is that the electronic connection is a delayed communication process, interactive communication (even if it takes about one second) can hinder the rapid communication of subscribers, so it is necessary to have patience when waiting for a response. Another limiting factor is the reliability of the connection. The connection can be broken maybe because of line congestion or accidental connection error. The cause is often due to poor operating videoconferencing equipment or incompatibility with the standard. Videoconferences are used within both traditional and distance learning. The goals and methods of using them in these two different applications may differ. However, the basic methodological principles remain the same in all applications. Video conferences should be used to provide the best of traditional and distance learning: combining face-to-face meetings with well-prepared study materials (Kalaš, 2013).

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MODERN APPROACHES TO DISTANCE LEARNING IN HIGHER EDUCATION INSTITUTIONS: BENEFITS AND DRAWBACKS

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Abstract. A rather serious test for all participants of the educational process in the higher educational institutions of Ukraine, namely: scientists, educators, teachers and students - was the sudden shift to distance learning caused by the pandemic.

The development of distance education in the HEI has acquired particular relevance. After a time of confusion everyone had to take up the challenge and adapt quickly to new reality.

While distance learning is not a substitute for full-time education and has never been planned in the long term vision, it can be an effective tool not only during quarantine. And since there is no answer the question: "How soon will the epidemiological situation change in Ukraine?", teachers should be prepared to the organization and introduction of the distance learning in higher educational institutions.

Keywords: *distance education, distance learning, distance learning technologies, integrated educational environment.*

Introduction

The educational and scientific activities appear to be a high-tech process aimed at the constant and continuous renewal of the competences and competencies of its agents in a modern society in which information and technological changes are constantly taking place. The COVID-19 pandemic is a central, strategically significant new global challenge. Despite this, it is important to look at distance learning as a form of learning through the impact of the pandemic.

At the current stage of the development of the information society the importance of introducing distance education into the educational space of the Higher Education Institution (HEI) is increasing, and there is the increasing number of higher education institutions that complement traditional forms of learning with distance learning technologies that make the learning process more effective in Ukraine.

Distance education serves as a set of teaching methods, organizational and functional structures and a complex of program and technical equipment, integrated within the educational process of the HEI for the training of higher education applicants – bachelors or masters as the future professionals through distance learning. Distance learning is thus emerging as a key element of the educational infrastructure of a modern higher education institution.

Analysis of recent researches and publications. There is insufficient coverage in the national literature of the particularities, approaches, advantages and disadvantages of distance learning as a form of learning in higher education institutions. In general, the works of V. Vishnivskyy, M. Gnidenko and H. Haydur, A. Ilyin (2014), N. Grossu (2020), A. Kuzmenko (2020), O. Stechkevich (2020), S. Strelbytska (2020), V. Shvets (2015) are devoted to distance learning and distance education.

Outline of the main material. Distance learning provides an interactive, productive, time- and space-invariant process of interaction aimed at meeting the educational needs of higher education applicants through information and communication technologies,

which is realized in the information and educational space and creates conditions for corresponding internal changes in the subjects of the educational process. Distance learning is a means of individualizing education. It is opening up new opportunities for its subjects, greatly expanding the information space and information sphere of the learning process. Through the distance learning students are able to independently choose and acquire the necessary knowledge, skills and knowledge, using various information resources, such as databases and knowledge, multimedia, video and audio recordings, electronic libraries, etc. (Weindorf-Sysoeva, 2020).

At the same time the main psychological and pedagogical problems are identified, namely: establishing contacts between the participants in the educational process; formation of learning groups in cooperation; identification of students' individual characteristics; maintaining motivation; the teacher adaptation to the chosen teaching methodology and technology. Distance learning programs are implemented through the software. Its functions included:

1. formation of individual curriculum and timetables;
2. taking into account the different types of activities and the results, students' assessments;
3. academic performance monitoring, students transfer to the next term.

The distance learning education process is implemented by the teacher with support of Internet technologies and IT services. The analysis of the scientific literature on possible options for distance learning systems revealed a large number of software tools used to successfully and efficiently organize the educational process in practice in HEI.

The following most widely distributed software products are: Skype, Viber, Zoom, Microsoft Lync, TrueConf Server, OpenMeetings, DimDim, WebTutor, eFront, REDCLASS Learning, Moodle, eLearning etc. (Weindorf-Sysoeva, 2020).

By exposing the teacher's activities in distance learning using distance education technologies, researchers divided it into two attainments:

1. organization of student learning activities in a remote form, where the teacher deals with a number of methodological and organizational issues;
2. preparation of the content and implementation of a distance-learning course where the teacher deals with technical issues, he/she develops curricula, collects theoretical material, selects practical tasks and introduces them into education process.

After acquiring theoretical knowledge students carry out practical and/or laboratory work which resulted in practical skills. The formation of practical experience among students takes place during the execution of tasks and business situations, using various online services and IT technologies (Vishnivskyy, Gnidenko, Haydur and oth., 2014).

Various distance learning technologies are being used to support distance learning. Distance learning technologies are therefore defined as educational technologies that are implemented mainly through the use of information and telecommunications networks and interaction between students and teachers at the distance. The introduction of the distance learning technologies in pedagogical practice and information and communication technologies in management determines the evolution of the pedagogical system, creates a network of education institutions and significantly changes the roles of all actors of the educational process including teachers and imposes new requirements on their qualifications, competencies and skills (Strelbytska, 2020a).

This is due to a number of characteristics of the use of distance learning technologies in the organization of the educational process which define the functions of the professional activity of the teacher in HEI. Most researchers note that distance learning technologies can be applied in two modes: synchronous, on-line test, chat, web-conference, and asynchronous, i.e. forum, e-learning module, etc. (Strelbytska, 2020b).

Figure 1 shows the main educational technologies applied in distance learning in HEI.

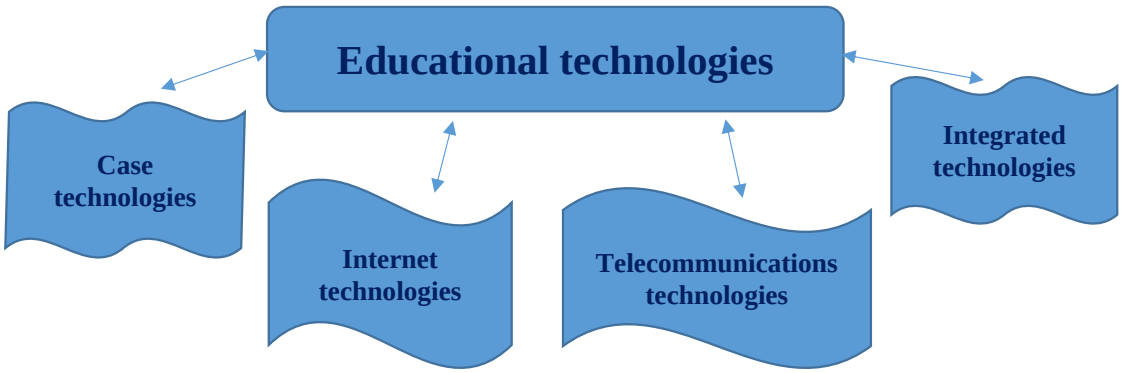

Figure 1. Basic educational technologies in distance learning
Source: compiled on the basis of elaboration (Telovata, 2020).

Basic Educational Technologies for Distance Learning in HEI:

- multiple case technologies;
- telecommunications technologies;
- Internet technologies;
- technologies based on the integrated educated environment.

Multiple case technologies are therefore a learning system that is supported by a specific set of textual and multimedia teaching materials that are well structured, properly organized, distributed and designed for self-learning by students of the HEI using various media resourses. Case technologies contains founding lectures, active seminars, trainings, games, consulting, testing and other forms.

Teaching methods that can be actively used in case technology include: training programs with guidance on the examination, practical work; textbooks and training manuals, and manuals with tests for control and self-monitoring, review (constituent) audio or video lectures; electronic textbooks and computer-based training programs in media resourses. Distance learning technologies of this group use computer networks and modern communications for consultations, conferences, correspondence and provision of students with educational and other information from electronic libraries, databases and electronic administrative systems. Importantly multiple case technologies can be applied in the educational process, both at the learning attainment and at the learning outcome testing attainment. Typically, the case consists of three parts: supporting information needed to analyse the case; a description of the specific situation; and tasks to the case (Strelbytska, 2020).

The specific features of the training materials used in this group of technologies are as follows: completeness and integrity of the systematic training package, which enable students to fully study the subject in a context of significantly reduced eye contact with the teacher; possibility of prompt supervision of the students and their education in the course of the teacher's interaction with the group. Moreover, case technologies combine interactivity and multimedia qualities, contain a large amount of information and thus greatly optimize distance learning in higher education. Overall, the introduction of case technologies into the educational process represents a less radical shift towards distance learning linked to the desire to preserve and take advantage of traditional teaching methods.

The next distance learning technologies are telecommunications technologies which consists of communication between a teacher and students using Internet TV. Then researchers identify two options for using this technology. The first option consists of video lectures which the student can watch at a convenient time and use to discuss with the teacher some of its points. The second option involves real-time communication between a student and a teacher with the possibility of general video conferency in which many students can participate. In this group of technologies scientists include webinars, video conferences, teleconferencing, chats, etc. Therefore, the chat lessons is a synchronous form of educational process' organization where each student can observe the progress of the work in real time while communicating with each of the actors of the educational

process. Such practical work is massive and not suitable for individual work. This form of organization is more suitable for the work of a group or subgroup of higher education applicants of the HEI. There are several types of the chat software implementations:

– HTTP, or web chat (looks like an ordinary web page where you can read the last few dozen phrases writed by chat participants and moderators. The chat page is automatically updated with a specified frequency);

– chats that use Adobe Flash technology where instead of rebooting a page, socket opens between the client and server, which allows instantly sending or receiving messages by spending less traffic;

– IRC, specialized protocol for the chats;

– chat programs for local networking, for example Vypress Chat, Intranet Chat, Pichat etc.;

– chats implemented beyond of other protocols, such as the chat that uses ICQ;

Client-server chats which work according to the scheme client-server that allow them to be used in a complex network, as well as to manage client applications, for example Mychat, Jabber etc. (Strelbytska, 2020).

In turn, teleconferencing is group-based form which allows students to discuss and share information among themselves and with teachers in particular. It requires the use of special technical resourses.

A distinction is made between off-line and on-line teleconferencing which allow real-time discussion. Using videoconferencing technology students are able to organize videoconferencing sessions, one of which is telepresence on two or more Internet sites. Communication is organized in the form of video and audio communication between groups of students in different cities and even countries. At the same time presentation of the reports is taking plece, challenges are discussed, views are exchanged, etc.

The next group of distance learning technologies is the Internet technologies which are characterized by the widespread use of computer-based learning programs and electronic textbooks available to students through global and local computer networks. All teaching materials are on the server which is available for self-study. Through the Global Internet it is possible to contact a teacher, to get tested (Shvets, 2015).

Another group of distance learning technologies are based on an integrated educational environment. The special feature of integrated information environment is that the teacher can design and implement his or her classes both in traditional and distance mode. A combination of major technologies is allowed. This group of distance learning technologies is the most common today among students (Figure 2).

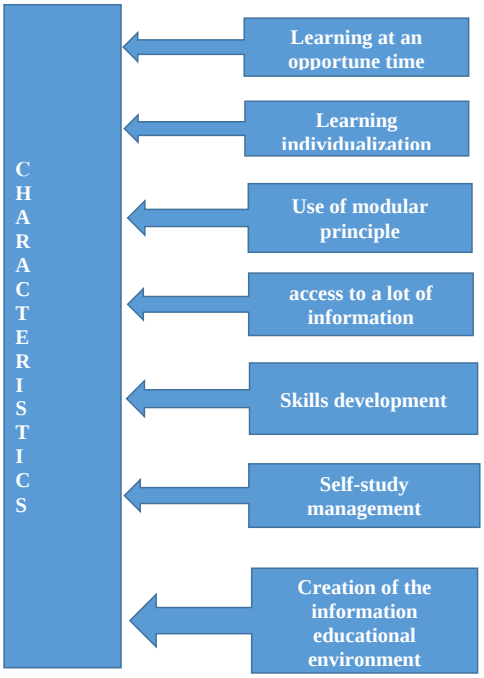

Figure 2. Characteristics of distance learning technologies Source: compiled on the basis of elaboration (Telovata, 2020).

Remote learning technologies have a number of specific characteristics:

- learning at the opportune time and place;
- learning individualization. It gives to each student the opportunity to build an individual educational trajectory, an individual timetable. This is particularly important for persons with disabilities;
- the use of a modular principle which assigns the subject to logically closed blocks, called modules in which both new material and learning tests are carried out;
- access to a lot of information in an interesting form through the use of multimedia tools;
- development of information-processing skills in computer directories and catalogues;
- student's self-study management by means of an educational process organization that provides distance learning through curricula and pre-prepared teaching materials;
- creation of the information educational environment, including a textbook, computer training programs, slide lectures and audio courses, etc.

Distance learning technologies have the following benefits (Grossu, 2020):

1. The subject who initiates the learning process and encourages students to become active participants in the learning process.
2. Active learning and generation of knowledge from different sources.
3. A multi-channel system that generates information between the teacher and the students as well as communication between them.
4. The work of the teacher is increasingly diverse and the activities of students are highly creative.
5. Learning takes place mainly in case studies and in problem situations and contributes to the development of skills to identify and address them.
6. Flexible and individualized forms of control, students' self-control and reflexion.

However, there are also drawbacks of distance learning, namely (Grossu, 2020):

1. Not every profession is available remotely.
2. The teacher does not have sufficient control over the self-study.
3. The student does not have the opportunity to be in a group, to communicate with other participants in the course.
4. The teacher's influence on the students and emotional contact during the lectures are not possible.
5. Inability of the teacher to verify the validity of the information the student processes additionally.

Conclusions

In summing up the above-mentioned research we have concluded that the introduction of distance learning and the use of distance learning technologies in the educational process of HEI gives rise to new prospects for the realization of problem-finding and project activities of higher education applicants – future specialists. Also this learning form strengthen their ownership of training activities. Students not only acquire new information and communication skills and competencies that are necessary for any professional to function successfully in the future, but also add to the list of skills that are relevant to the socially important and determine the further success of a person in absolutely all aspects of life.

Thus, the use of distance learning technologies in the organization of the educational process is an objective requirement, which corresponds to the challenges of the present day making the process of learning in the HEI more flexible and socially oriented. Distance learning technologies help students overcome logistical, psychological, temporary and other barriers, thus improving the quality of their education, ensuring that the educational needs of future professionals are met, increase their professional mobility and activity. In addition, distance learning technologies contribute to the creation of a single educational space and the learning individualization of higher education applicants in HEI (Telovata, 2020).

As the research shows, distance learning has advantages as well as drawbacks. The drawbacks are due to the interaction between the actors: the interaction takes place not directly, but through information and communication technologies, that is the physical object.

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ETHNO-NATIONAL AND REGIONAL IDENTITY IN AZERBAIJAN

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Abstract. Ethnogenesis, ethnoidentity in general, the ethnosphere, roots, origins, the phenomenon of existence, no matter how many problems it has faced in recent times, continues to maintain its dominant character in terms of psychological and anthropological sources. This event is also the focus of ethnographers, anthropologists, political scientists, philosophers and analysts as a whole, as a result of complex political and social processes taking place in the world. At the same time, ethnogenesis and identity, in contrast to all periods of history, highlight the phenomenon of multiculturalism, which, in the context of today's globalization, stands on the opposite pole and has an antithesis. In addition, the introduction of the phenomenon of identity and research in this area focuses on such important philosophical-moral, socio-cultural, as well as socio-psychological factors related to local and numerous different peoples and ethnic groups living in a particular geopolitical space. The issue of culture, the phenomenon of intercultural dialogue is of special importance. By uniting their efforts in the process of globalization and applying this very important factor as the main issue of the policy, the countries of the world try to protect the interests of the masses, the subjects of national affiliation, the common owners of the same ethnosphere, material and spiritual values of the same region.

In this regard, the problem of «Ethno-national and regional identity in Azerbaijan»selected as a research topic is relevant both in terms of scientific analysis and evaluation, as well as in terms of practical application.

Keywords: *Azerbaijan, national, identity, ethnogenesis, multiculturalism.*

Introduction

It is known that the phenomenon of geopolitical, ethno-national, as well as family, individual-citizen, in general, the phenomenon of identity is characterized by the psychological roots created and owned by this or that nation for thousands of years and passed on to future generations. is a

system of values. These national and moral values are also so sensitive, unique and specific that by studying them, it is possible to determine the identity, cultural and spiritual existence, national consciousness of the peoples of the world.

The national-moral foundations that have been in the process of formation for many centuries, that is, the national consciousness, reflect the general cultural phenomenon of the people in a broad sense – the religious worldview, morality, ethics and aesthetics. existence – in the term of a new scientific approach - contains the essence expressed in identity.

National consciousness is a moral code of self-consciousness, a philosophy of life, rooted in a sense of national identity and reflecting the moral character of the people, which is systematic, encompassing man from birth to death and even to his final destination.

Also, national ethnoidentity, ethnogenesis, in the broadest sense, the national idea determines the historical past, the ethno-national genesis as an important factor for the fate of peoples, expressed by the concepts of ethnos, ethno-national culture. It is a historically confirmed fact that the phenomenon of national identity has always been at the forefront of the self-consciousness and national self-determination of any people, nation, or even small ethnic community, in the sense of the psychological and anthropological existence of the individual.

This can be fully interpreted and explained in the interpretation of different types of identity, such as individual, family, citizen, geopolitical, ethno-national identity.

Thus, identity, ethnogenesis, or in other words, national moral foundations express a very strong and sensitive national ethical and moral content, which reveals the general national psychology, religious views, culture and aesthetic ideas of the people. For example, historically accepted family ethics for European life differed from the East-Muslim, as well as the national moral foundations of Azerbaijan. The factor of civil marriage in modern Western thought For East-Azerbaijani families, there is still a «generation» of lonely, old, childless girls, who are neither themselves nor the national-moral foundations surrounding them are the way to prevent this loneliness. does not accept the idea of civil marriage in the European sense. Sometimes this form of family society is even put forward in parallel with extreme religious rules, such as sigh, which sounds like the Muslim world with the same roots as ours, so that our people maintain their identity and show loyalty to more civil and modern national cultural norms. makes.

But how did our ancestors evaluate the current events, the cultural and individual evolution, the systemic moral foundations that characterize life and death as a whole, and how did they understand their definition? from our philosophical memory, from our later folk tales, epics, as well as from our proverbs, sayings, from time to time from our serious works of art, dramas, novels, which are an artistic reflection of the development of national thinking, our national identity, which emanates from our examples of epic and other genres of literary thought.

The common idea, which unites the above, completes the common goal - the national idea, and is the manifestation of the philosophy of life of this and other peoples and nations throughout history.

Thus, the concept of identity – ethnogenesis – specifically includes the idea that it is specific to a particular people, a nation, and this characteristic code is a spiritual heritage that is protected, used and transmitted as a password.

Research results. Russian scientist L. Gumilov, known for his scientific research on the phenomenon of ethnogenesis, writes, "The internal structure of the ethnos is a well-defined norm of communication between the collective, between individuals and individuals. This norm, of course, exists in all spheres of life and reality, and has been accepted as a single possible way of life in this ethnos and in each individual period. Therefore, it is not difficult for members of an ethnos, because it is natural for them and, conversely, each member of the first ethnic group is surprised to come across a different standard of behavior in a different ethnic group, and tries to tell his tribe about this extraordinaryness of other nations" (Gumilev, 1970).

Lev Gumilov also emphasizes that, "Looking at history, we see that none of the peoples that existed 5,000 years ago have survived. There are very few traces of the huge monuments created by some of them over 2,000 years. Although those that existed in the 10th century still remain in large parts, they have completely changed. We must think that future ethnoses will emerge and disappear. How and why this happens is the most important issue at the heart of ethnogenesis" (Gumilev, 1970).

Azerbaijani ethnographer Giyasattin Geybullayev explains the ethnic process in general as an actor of ethnic composition. He points out that "the ethnic process is the process of changing ethnic groups (tribes, clans, peoples), the formation of new ethnic associations. The field of science that studies ethnic processes, or the process of ethnogenesis, is called ethnic history in ethnography. It is therefore not difficult for members of an ethnic group, because it is natural for them, and on the contrary, each member of the first ethnic group is surprised to come into contact with a different standard of behavior in a different ethnic group and tries to tell their tribe about this difference" (Geybullayev, 1994).

Lev Gumilov also emphasizes: «Looking at history, we see that none of the peoples that existed 5000 years ago survived. There are very few traces of huge monuments, some of which have created over 2000 years. Although those that existed in the 10th century still remain to a large extent, they have changed completely. One must think that future ethnic groups will be created and disappear. How and why this happens is the most important problem at the heart of ethnogenesis" (Gumilev, 1970).

Ethnographer of Azerbaijan Giyasattin Geybullayev explains the ethnic process in general as a subject of ethnic composition. He points out that "the ethnic process is the process of changing ethnic groups (tribes, clans, peoples), the formation of new ethnic associations. The field of science that studies ethnic processes or the process of ethnogenesis is called ethnic history in ethnography. The study of ethnic history is ethnogenetic research. Ethnogenetic process or ethnogenesis is a set of historical processes that take place in the process of forming ethnic identity, ethnic identity of an ethnic group" (Geybullayev, 1994).

The thoughts of Ramiz Mehdiyev, an outstanding scientist, are also interesting from the point of view of understanding the phenomenon of ethnogenesis in our ethnoregion, which has anthropological and especially philosophical anthropological and socio-psychological sources.

Academician Ramiz Mehdiyev gave a detailed scientific commentary on the problem of ethnogenesis, as well as on the problem of ethnogenesis in Azerbaijan: "It is important to know that ethnogenesis, although it is a static natural process, is slow: more than a thousand years pass from the moment of passion for its inertia. It seems to us that in our life there are no important events related to the ethnic system, and we perceive the ethnos as a constant quantity. But this is a serious mistake. Migration of peoples, aggressive wars, ecological processes have become the main reasons for the disappearance of some peoples and the appearance of others over the millennia, the mixing of tribes and ethnic groups, the transformation of languages and cultures. These historical processes did not bypass the Azerbaijani people, which have a rich ethnic history. Due to favorable climatic conditions, the South Caucasus was an ancient settlement of people. Many states and ethnic groups were created and disappeared on the territory of modern Azerbaijan, each of which left its mark on the history of Azerbaijan" (Mehdiyev, 2011).

Academician Ramiz Mehdiyev's thoughts summarized in the following quote are also at this point sounds characteristic: "Undoubtedly, the Azerbaijani people belong to the family of Turkic-speaking peoples. Various ethnic elements took part in the formation of these peoples. For example, the languages of Turkmens, Azerbaijanis and Turks are very close, but each of these peoples came to the XXI century on the "shoulders" of various ethnic groups living in the region where they live, along with their ancient ancestors, especially the Oghuz tribes. We feel their influence, as they say, at every step: in the word structure, in the elements of traditions and culture, in everyday life, often in the external elements of their representatives, and so on (Mehdiyev, 2011).

From this point of view, the work of the famous Azerbaijani scientist Afrand Dashdamirov "Nation and society in a difficult period of history" (Dashdamirov, 2008) is interesting for a new and complete, but also quite objective analysis of the problem of the national idea in Azerbaijan: More ideological field, a specific phenomenon of spiritual, ideological and moral life nations, ethnization of the socio-political situation or ... politicization of ethnocultural life" (Dashdamirov, 2008). In continuation of these ideas, we get acquainted with the specific definition of a scientist, which, like all researchers studying the origins of the national idea of ethnic layers of national

culture, corresponds to our opinion: it plays an exceptional role in preserving the new cultural sovereignty" (Dashdamirov, 2008).

Indeed, the phenomenon of the national idea, rooted in the national and spiritual foundations of the Azerbaijani people, has for centuries led to the growth of new generations of progressive people, the strengthening of the state policy by the progressive ideas of enlightened thinkers. As ordinary domestic ethical norms gradually become socialized in practice and form a code of ethics, the source of the common national idea of the people, they are transformed into universal values and become international relations, international law and so on. led to civil, political, social and cultural development.

The first example that we can give here is extremely high hospitality, respect for elders, elders, intellectuals, respect for teachers, courtesy to women, honor, dignity, colorful folk customs - weddings, holidays, as well as funeral and religious ceremonies.

These moral foundations express a very strong and sensitive national psychological, ethical, socio-cultural content, which reveals the general national psychology, philosophical and moral ideas, aesthetic consciousness, religious views, the rich culture of our people.

The best example of Azerbaijan's national identity in terms of art - Our carpets have deep traces of ethno-national identity, which fully reflect the world perception and worldview of the Azerbaijani people with colorful shades of aesthetic consciousness. Thus, the miracle of carpet art created by the curves drawn in the water of plants in the rich nature of Azerbaijan is both a dialogue between man and nature, and a map of national identity. Ancient Azerbaijani carpets, created 1,000 years ago and found in various historical museums around the world for more than 100 years, reveal the history of national identity and ethnic identity, instilling a sense of beauty and grandeur in millions of people under the influence of flowers and curves.

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These moral foundations express a very strong and sensitive national psychological, ethical, socio-cultural content, which reveals the general national psychology, philosophical and moral ideas, aesthetic consciousness, religious views, the rich culture of our people.

From this point of view, our national music, mughams, ancient folk epics and folklore with a rich national spirit - proverbs, bayats, sayings, monolithic stone monuments, epics, in general, our colorful and rich ethnos, pottery and other folk arts, still Our traditions and behavior are a clear manifestation of our ethno-national identity, historical culture, and national philosophy of «I».

For example, we must show that in our traditions and behavior, the relations in the context big-small, man-woman, child-youth are at a level that is more positive and high than in any other nation in the world. This can be said of our already formed way of thinking. This moral criterion of our people is reflected in our proverbs: This moral criterion of our people is reflected in our proverbs "The road belongs to the elderly, the water belongs to the children», "Sit in a place without God, do not sit in a place without elders" and others. As an expression of special respect for the guest in the family, "Even if the enemy comes to the door, it will not be returned" (Dada Gorgud), "Buy a house, buy a neighbor", "A close neighbor is better than a distant relative", Our sayings reflect the national traditions of our ancestors.

In the direction of our analysis, we consider it necessary to point out that the indigenous, created by national-moral values, ethnos, traditions, and the national spirit as a whole, has adopted and maintained higher types of thought in its development, in this direction religion and language, homeland, people, of particular importance to civic components.

From this point of view, it is not accidental that the great leader of the Azerbaijani people Heydar Aliyev attached special importance to the role of national and moral foundations in state-building policy, and even emphasized that Azerbaijan, which gained independence for the second time and developed rapidly, is a state born of these values. Today's Azerbaijan is born from the unity of national and spiritual traditions with universal moral values" (Aliyev, 1997).

In the concept of national-spiritual foundations, Language as well as religion is the basis as a representative of the national spirit, the national idea. Here it is necessary to pay attention to an idea emphasized by the great Azerbaijani enlightener Hasan bey Zardabi.

Thus, H. Zardabi, commenting on the strong factors of language and religion in the identity and especially in the ethno-national identity of Azerbaijan, wrote that "... As science progresses and progresses through education, each tribe should keep two things, one of which is language and one is religion and sect. It is as if one of them was lost, as if the of the waist broken.

When both of them leave, they will be mixed with non-tribes and will disappear by inheritance" (Zardabi, 1960).

As can be seen from the quote, the great enlightener emphasized the importance of national identity psychological consciousness in the factors of religion and language: "It is as if one of them was lost, as if the of the waist broken. When they leave, they will be mixed with non-tribes and will disappear by inheritance", he said.

We must also take into account that the factor of religion, worldview of national moral foundations is the humanism, justice, equality, dignity, love, trust, etc. in the system of morality and traditions in the identity of this or that nation. It also regulates the universal philosophical and ethical qualities that have led the Azerbaijani people to development in all civilizations of history and have had the power of great modern change in the life of society.

In this study, devoted to the analysis of the philosophical and ethical source of the "Ethno-national and regional identity in Azerbaijan" it is necessary to consider the characteristics of the modernist movement, which lasted for 3 centuries and connected the whole world to its influence. During this period, the consciousness of homeland-nation-citizen identity was formed in the system of national-moral bases in all cultural civilizations, and in Azerbaijan this event gave rise to the most complete ideology, which will be called the national idea-Azerbaijani ideology.

The first enlighteners of Azerbaijan, for example, Abasgulu aga Bakikhanov, Mirza Shafi Vazeh, Gasim bey Zakir, Seyid Azim Shirvani and othersas well as Mirza Fatali Akhundov, who began his career in the second half of the 19th century, and his successors continued to build their enlightenment missions on issues of national moral consciousness.

As for the issue of regional identity in Azerbaijan, it is already a proven fact that the Republic of Azerbaijan with its ancient history as an independent state is subject to the rule of law.

Over its 30-year history of development, it has remained faithful to the traditions of multiculturalism and tolerance, defended the principles of respect for the mother tongue and national religions of various ethnic groups and ethnic groups, and ensured that peoples live in respect of each other's traditions and culture.

It is a well-known fact that the President of the Republic of Azerbaijan Ilham Aliyev praised the ideas of multiculturalism, based on this vital cultural program in solving global cultural problems and turned it into a model of sustainable development with his professional politician and competent leader.

The profound thoughts of the President of Azerbaijan, expressed in the following quote, fully revive the content and essence of the model of multiculturalism of the Independent Republic of Azerbaijan: "Multiculturalism is a way of life in Azerbaijan. True, this term is relatively new. But for centuries, there have been multicultural societies in Azerbaijan. Friendship and solidarity between nations are a clear example of this. We are still trying to make a positive impact on the processes in the region and the world on our own initiative" (XXI Century: Hopes and Challenges: Forum, 2011).

It is no coincidence that the President of the country, Mr. Ilham Aliyev, guided by Article 109, paragraph 32 of the Constitution of the Republic of Azerbaijan, declared 2016 the Year of Multiculturalism in order to «preserve, further develop and widely promote the traditions of multiculturalism in Azerbaijan.» signed an order on The decision of the United Nations to hold the 7th Global Forum of the Alliance of Civilizations in Baku in 2016 is also due to Azerbaijan's special emphasis on the philosophy of intercultural dialogue – multiculturalism.

In addition, the Independent Republic of Azerbaijan was elected a member of the Organization of Islamic Cooperation, ISESCO, as well as other authoritative organizations uniting Muslim countries. This is a clear example of Islamic solidarity, which is confirmed by the announcement in 2009 of Nakhchivan, the ancient ethnogenesis, ethno-national identity of Azerbaijan, the capital of Islamic culture.

The activity of the First Vice-President of Azerbaijan, Goodwill Ambassador of UNESCO and ISESCO, President of the Heydar Aliyev

Foundation Mehriban Aliyeva in the field of universal identity and regional development strategy in Azerbaijan is highly appreciated not only in our country but all over the world.

Under the initiative, organization and leadership of First Vice President Mehriban Aliyeva, the Azerbaijani national mugam art, our Ashug art, our national women's cover Kalagayi, the famous traditional art in the ancient human settlement of Lahij village – coppersmith school, our national holiday Novruz holiday, our historical carpet weaving art, etc included in the UNESCO Intangible Cultural Heritage List and acquaints our people all over the world with vivid examples of the phenomenon of identity and ethnogenesis.

All these and similar facts are important in terms of history and modernity in Azerbaijan as a universal identity, a celebration and confirmation of the regional development strategy.

Thus, we can say that the universal, regional development strategy of identity of nations and peoples united under one common sky in Azerbaijan continues to develop in the context of a new and sustainable philosophy of life, being accepted as a priority concept of state policy in the Republic of Azerbaijan. At the same time, this strategy not only solves the problem of society's progress, but also rises to the top of scientific evolution as a methodology.

Conclusions

Thus, in conclusion, we can say that today, as in all times, people of different nationalities living together in Azerbaijan for many centuries – Lezgians, Avars, Talysh, Jews, Germans, Buduks, Udins, Sahurs, Lahijs, Tats, Kurds and other peoples Representatives continue their lives in peace, solidarity and tolerance. It is a fact that in the Independent Republic of Azerbaijan, ethno-national identity and regional identity do not interfere with each other, and there is a serious tolerance in family relations, moral traditions, and even differences in language and religion. This super-living environment in the Azerbaijani state does not pose any threat of phobia, but rather strengthens the bridge of friendship, unity and communication between nations.

One of the main results of our analysis of this problem is that the topic «Ethno-national and regional identity in Azerbaijan» is one of the most important scientific, socio-political and political philosophical studies of modern times, both universal and regional, family and household rules. It attracts attention with its innovative content, such as language, religion, moral values, cultural traditions, national idea, Azerbaijanism.

It is no coincidence that the issue of Identity, as well as Multiculturalism, which is now the focus of dozens of scientists, researchers and political commentators in Azerbaijan, is studied in many areas, from historical chronological analysis to modern scientific problems. This topic is also of interest in the interdisciplinary context and in many ways.

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Thus, the cultural phenomenon, which stems from the content of the historical development of the life of the peoples of the world in general, the dominant ethnic groups in particular, and thus acquires a human nature, paves the way for more and more fundamental research.

In this regard, the problem of "Ethno-national and regional identity in Azerbaijan" is important from the perspective of historical chronology, as well as from the perspective of modern approaches.

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QUANTUM SECURE COMMUNICATION AND 6G CRITICAL INFRASTRUCTURE

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Abstract. Cyber warfare poses a real threat to national security, as adversaries hack and disable critical infrastructure systems in other states, and use intelligence databases to obtain valuable information. The attack is not only by conventional military, economic and political methods, but also by cyber operations. The possibility of being revolutionary in defense and national security has given quantum computers and artificial intelligence supremacy. The spectral technologies in mid of 2030s such as THz communication, molecular communication and quantum communication will dramatically improve the data rate. The blockchain will become an important part of a 6G society using smart devices of all of multimedia data, The 6G new paradigm in the sustainable future will shift intelligent materials. The 6G wireless standards could make real time mobile internet speeds of 1 TB per second using massive volumes of data in essentially real time. The 6G will integrate terrestrial wireless and satellite systems for a global network coverage with fully autonomous and self-driving vehicles, robotics, or unmanned delivery drones services.
Keywords: *6G quantum security, 5-layer vertical architecture, quantum information, quantum technology, national security, quantum communication, quantum metrology.*

Introduction

The rise of quantum computing creates challenges, from highly secure communications to faster code-breaks and to strategic utilities detection. It has a profound impact on everything from capabilities to disrupting much of cryptography through data-sensitive public and private networks

and to have a basic understanding of quantum systems and emerging national security challenges.

Quantum computing has the ability to use quantum mechanical engineering in such a way that simultaneous calculations can be performed. With advances in technology and increased innovation, cyberspace is another battleground of endless threats. The possibility of being revolutionary in defense and national security has given quantum computers and artificial intelligence supremacy (Erkmen, Shapiro, 2010). Thus, 6G communication is currently 5G communication further, with the provision of enhanced services in terms of network data availability, mobile data rate, seamless ubiquitous connectivity, 6G communication is accepted in various mobile data categories, and to transmit them through traditional enhanced radio frequency network. Quantum computers are faster and more efficient than any known computer. This is because, in theory, a single quantum computer is more powerful than all the supercomputers in the world today. In theory, if quantum computing is fully mastered by the state, they would be very dangerous to the state because of the very difficult nature of protecting networks, databases, and critical infrastructure and artificial intelligence and quantum computing because of the very nature of protecting their artificial intelligence in the most at all resistance.

Cyber attacks on existing artificial intelligence systems, the implementation of artificial intelligence in conventional military warfare,and greater overall threats to national security, current artificial intelligence systems are starting to see data breaches from unknown sources because of insecure centralized servers that hold valuable information. This makes it easy to target even the most simple hackers with obtortificial intelligence n information in these databases. Cyber attacks on artificial intelligence databases can cause serious destruction for individuals,businesses and governments. Artificial intelligence can also be used to implement weapon systems that can have fully autonomous functions, as well as complex problem-solving and reasoning skills like humans.

The operational and engineering challenges of quantum mechanics and the rapid pace of development of quantum computers have every six months doubled the number of qubits on the processor chips of quantum computers. If this growth pattern continues, the quantum bit processor will crack one of the most widely used cryptos, the Rivest–Shamir–Adleman (RSA) cryptosystem, and will be able to do so in next decade 2030s.

1. Quantum secure communication services

Quantum secure communication services improve trust and security, improve network performance by quantum timing, and improve the reliability and security of quantum computing. The use of quantum computers is also likely to increase as planners of defense plans to make large-scale simulations of military deployments, and as scientists may be susceptible to the algorithms that many existing technologies run on quantum computers, with complex chemical reactions to design new materials.

The technology is able to protect both classical and quantum attacks, speed up the exchange of cryptographic keys at long distances, and is also able to protect national security communications (*Table 1*). This means supporting research, development and education, bringing quantum to the strategic planning process, integrating its challenges and opportunities to ensure the quantum threat. Connect with industry experts and academia, create a group that shares information, issues, and solutions to help members meet the challenges they are facing, and think about how the organization carries out its mission in the post-quantum era.

Table 1.

6G HARMONY

Distributed trust
Cyber Psychical Security
Terraherz Technologies
4D imaging and image projection
Automatic Orchestrated Transceiveres
Haptic Remote Telepresence
Full Spectrum fotonic Signsl Processing
Proactive Decissions Making
Non Device Centric Communication
Extreme URLLC

Consent and Privacy Preserving
Data Sharing
Support for Ambient Novel Sharing
Small Data AI
Distributed Learning
Informations offering

Source: compiled by author Miloslav Hoschek.

The idea of having robotics in a war inspired many founders of robotics and artificial intelligence to assume the dangers that artificial intelligence poses in a war. Once developed, an armed conflict can be fought on a greater scale than ever before, and faster than humans can understand a national security threat. A cyber attack consisting of a top secret database or a power grid database can result in serious serious infrastructure damage and massive human casualties, and a large-scale cyber attack can cause more damage than the use of hard-force by conventional methods of weaponry.

1.1. Quantum computing and Cybersecurity

Cybersecurity could be a threat to quantum computing. Code-breaking and public-key encryption vulnerabilities make the United States more susceptible to cyberterrorism threats. During her research, she discovered that a new type of computer based on quantum physics could break modern cytopathology (Johnsson, Brennen & Twamley, 2016). But this is the complete hypothesis of the worst-case scenario. Today, not all current quantum computers have the processing power to carry out such large-scale threats. Fortunately, any country or cyber terrorist organization will thus require a radical and substantial technological advance to use quantum computing.

The relationship between artificial intelligence and cyber warfare has changed significantly as a direct result of the digital age. Cyber warfare through the use of artificial intelligence has become easier due to technological advances that allow countries to reach beyond national and international borders (Kline, Salvo, 2019). The main cause of cyber attacks can be traced back to software that ensures system errors rather than other causes such as hardware farficial intelligence. The task management errors occur repeatedly and the soft process is wrong thread this type of failure affects many computer programs functions such as firewalls and security programs. The devastation caused by these types of attacks represents an ongoing threat to cyber security.

If an error occurs and many threads are accidentally interrupted, often someone tries to manage this problem through a queue strategy. The importance of this process is the ability to effectively manage multiple concurrent threads while simultaneously performing high-traffic tasks such as data transfer (Boixo, Rønnow, Isakov, & oth., 2014). One of the biggest concern is the delay while the martificial intelligence Artificial intelligence security to minimize delays, the process has a requirement called "efficient feedback control. The purpose of the efficient feedback control is to adapt the idle time to a given value for learning the change of the traffic dynamics by the constitutive intelligence (Merat & Almuhtadi, 2015).

The reason for the exclusion of firewalls is either a passive or active attack that can be initiated within a security perimeter. The capabilities of these threads, whether passive or active, help to identify and protect the artificial intelligence against cybersecurity attacks (Wood, 2002). The sendt thread checks the batch file to create and update the routing table of nodes, and then the message is broadcast. In addition, the sending thread increases the sequence number of this node every few seconds. On the other hand, the receiving thread continually receives messages from the artificial know-how of the routing table at once to create and update messages from other nodes.

1.2. Artificial 6G intelligence

The implications of artificial intelligence and quantum computing are enormous, and because of the enormous capabilities and vulnerabilities of intelligence in these two fields, the debate over cyber warfare can be exploited as a big advantage among new battlegrounds in cyberspace, and without proper protection, they can both destroy our

own digital AI in order to gain an advantage, you have to be a leading national in the field of artificial intelligence and quantum computing (Allen, Chan, 2018). To do that, we need to ensure proper protection and ensure that cyberspace is a safe and resilient Artificial intelligence against cyber attack. In doing so, it is in the national interest of the United States to become a leader in the field of artificial intelligence and quantum computing , because it is better to defend country from cyberwarfare attacks (Wittig, 2011). The evolution of artificial intelligence and quantum computing in modern warfare will also have an impact on security. As a country that wants to lead the world in digital artificial intelligence, we must work to secure cyberspace and resist future attacks. While artificial intelligence can do harm as a weapon, to teach machines. Quantum computers, however, the current encryption measures will be outdated (Quantum Computing: Progress and Prospects, 2018).

Quantum computers exist in multiple "states" at once, exploiting the unique qualities of subatomic particles rather than manipulating bits. Quantum computers can manipulate these particles to perform many calculations at the same time, which speeds up solving complex problems such as cracking encryption.

Traditional algorithms are created by programmers and quant strategists, but these algorithms, based on if/then rules, use machine learning to learn the best trading patterns and pass them on to machines to automatically update the algorithms without human intervention. More and more capital market companies are using machine learning and other tools to build algorithmic trading systems that learn from data without resorting to rule-based systems. With the adoption of data scientists,advances in cloud computing,and access to an open-source framework for the artificial intelligence ning machine learning model, big banks are already developing self-learning algorithms for stock trading.

To forestall quantum surprises, the standardization organization has already planned a new encryption protocol that will reduce the vulnerability of data to quantum computers. The growing need for artificial intelligence, medicine and natural resources in China is poised to increase the threat to Chinese companies and Chinese workers based on foreign soil as a result of the size of the international crisis that the people's Republic of China may face in the near future. Vulnerable countries that acquire Chinese technology and infrastructure and give Chinese state-owned enterprises the right to exploitation of natural resources do not have the ability to guarantee adequate security (Popkin, 2017).

Thus, while China's infrastructure and personnel, facilitated by politically motivated rebels, or criminal organizations that perceive Chinese citizens as wealthy targets, are not new, the privatization and downward cycle of security services is not new impact on the security landscape.

1.3. The spectral technologies in mid of 2030s

The blockchain will become an important part of a 6G society using smart devices of all of multimedia data, The 6G new paradigm in the sustainable future will shift intelligent materials. This network outside the terrestrial globe allows for truly intelligent connectivity and penetration of artificial intelligence and enhanced network protocol stack. Quantum repeater will rebroadcast quantum information, can broaden the network's reach. Instead of using satellites to transmit quantum information through the near-vacuum of space, the 6G quantum satellite flies without the loss of optical fiber. China is making the decision to launch its own quantum satellite. China is working with Australian physicists to transmit quantum information between the two satellites (Qichao Zhu, Kun Long, 2019). The Canadian Space Agency recently announced funding for a small quantum satellite. Teams in Europe and the United States are also proposing to put quantum devices on the International Space Station. A network of satellites could someday connect quantum computers designed in labs worldwide.

In theory, even if entangled objects are separated, their unstable quantum states remain linked until either one of them is measured or interfered with that measurement, no matter how far away, immediately determines the state of the other objects. The long string of entangled photons shared between distant locations becomes a "quantum key" that makes communication safe. If you try to eavesdrop on a quantum encrypted message, the shared key will be

destroyed and everyone will be warned about the compromised channel (*Table 2*). The result was an ultra secure communication network and ultimately, a stepping stone to the space-based quantum internet. Entanglement involves placing an object in a peculiar limbo of quantum superposition where the quantum properties of an object occupied multiple states at once, and these quantum states are shared among multiple objects.

Table 2.

The 6G potential technologies	
new meta data commands	the cross layer design breaks the end to end principle
high precission synchronisation	provides multiplex advanced network functions
multipath transmission	new network protocol architecture
current internet architecture as TCP/IP	cannot guarrantee future application delivery contrains such as deterministic throughput, metric or security details or ultra low latency
Distributed artificial inteligence	includes computation, communication catching control
local patterns sent to central cloud	obtaining global model
ITU International Telecommunication Union New classification	Terraherz frequency bands, single chip receiver, data link layer DLL, THz wireless radio transceiver

Source: compiled by author Miloslav Hoschek.

According to theforecast by International Telecommunication Union (ITU), global mobile data traffic will reach 5 zettabytes by 2030 (*Figure 1*). In 2018, Finland announced the 6Genesis Flagship programhe U.K. and German governments have invested in some potential technologies for 6G such as quantum technology, and the United States began, an eight-year program research on terahertz-based 6G mobile networks. The autonomous driving could have more stringent requirements for latency and through put, which will work the global mobile data traffic and intelligent connectivity network in 2030.

2. Advancing 6G network device communication

2.1. The Quantum Internet Alliance

Quantum internet alliance is a multi-node quantum network, targeting the pan-European quantum internet rather it will complement it or become a branch of it. It would be able to take care of some of the problems that plague the current internet. For example, the quantum internet provides much greater protection from hackers and cybercriminals.

Quantum internet blueprint by break-through technological advances. The quantum internet alliance will demonstrate the integration of the first of both sub-systems, pushing the frontier of technologies for both end nodes (trapped ion qubit, diamond NV qubit, neutral atomic quantum bit) and quantum repeaters (rare earth-based memory, atomic gas, quantum dot). This makes the leap from a simple point-to-point connection to the first multi-node network. The major possible features for memory-based quantum repeaters and consequently, include the world's longest such link, the real-world elementary long-range relay relay relay.

A vulnerable cyberattack that does not send a message to the light particles of a network utilizing quantum. Instead of using mathematical complexity to encrypt messages, it depends on the specific rules of quantum physics. With quantum information, you can not copy it or cut it in half, and you can not even look at it without changing it. This allows for much more secure encryption than is available today. The easiest way to understand the concept of quantum internet is through the concept of quantum teleportation. The possibility of a space-based quantum internet where satellites continuously broadcast entangled photons down to the Earth's surface.

2.2. Quantum Teleportation

In quantum teleportation, two people who want to communicate share a pair of intertwined quantum particles. Then, through

a series of operations, the transmitting side can transmit any quantum information to the receiving side. It can not do faster than the speed of light, but it is a common misconception. A central research question is how best to distribute these intertwined pairs to people distributed around the world.

Hand in hand with hardware development, the Internet Alliance industry partners to provide fast and reactive control and allow arbitrary high-level application to be realized in platform independent software application protocols and their hardware requirements in the case of use in the real world. The whole stack on the small-scale quantum internet was verified by elementary safety quantum cloud calculation. The design of the blueprint architecture is verified by the large-scale simulation of the pan-European quantum internet.

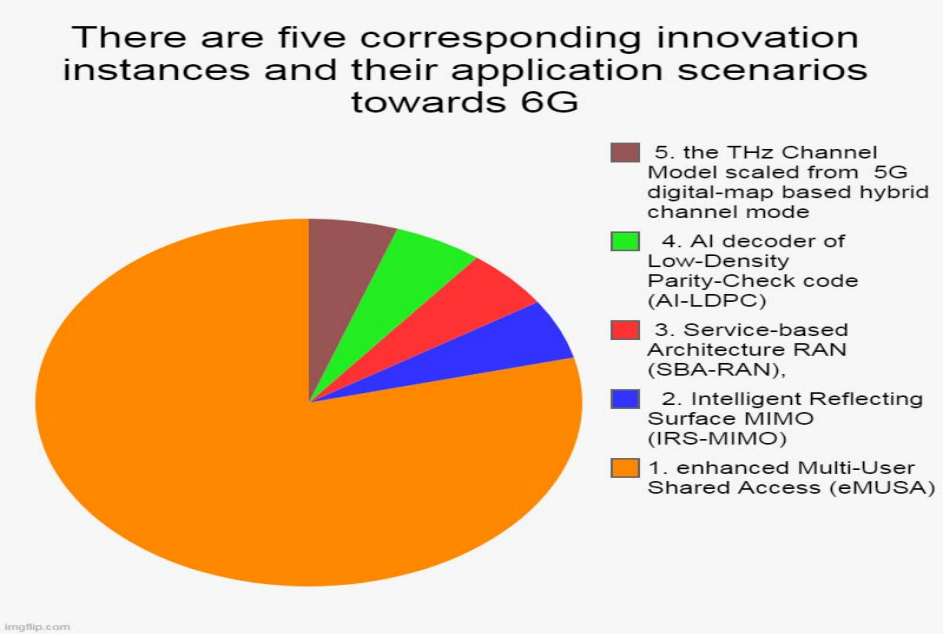

Figure 1

The Internet of the future is based on these quantum principles (Durak, Jam, Dindar, 2019). The future quantum internet will make use of quantum bits of quantum information that can take an infinite number of values. Quantum internet is the platform of the quantum ecosystem, and computers, networks,sensors, sensing, communication,and computing are literally one and the same.

Advancing 6G network device communication is a high-placed inconsecquential thing from the propagation of empirical models. This situation underlines the need for a radical change from two-dimensional to three-dimensional, which is necessary to take into account the height of the communication nodes, anticipating changes in the 6G environment, some of the notable technologies that have already incorporated this dimension are satellites, unmanned aerial vehicles and underwater communications (*Figure 2*). Therefore, an analytical framework designed for 2D wireless communication derived from probability geometry and graph theory needs to be readjusted in a 6G environment. Considering the height of the device, it can lead to the realization of the elevation beamforming with a full-dimensional architecture, and it can be used in different applications to achieve network optimization.

2.3. Holographic 6G communication

Holographic communication makes it possible to transmit a virtual vision of people, events, and real sights near the environment. These technologies allow you to easily implement tactile touch using a communication network. Realizing this technology may lead to the abolition of the open system interconnection network model and the adoption of the inter-layer communication system design.

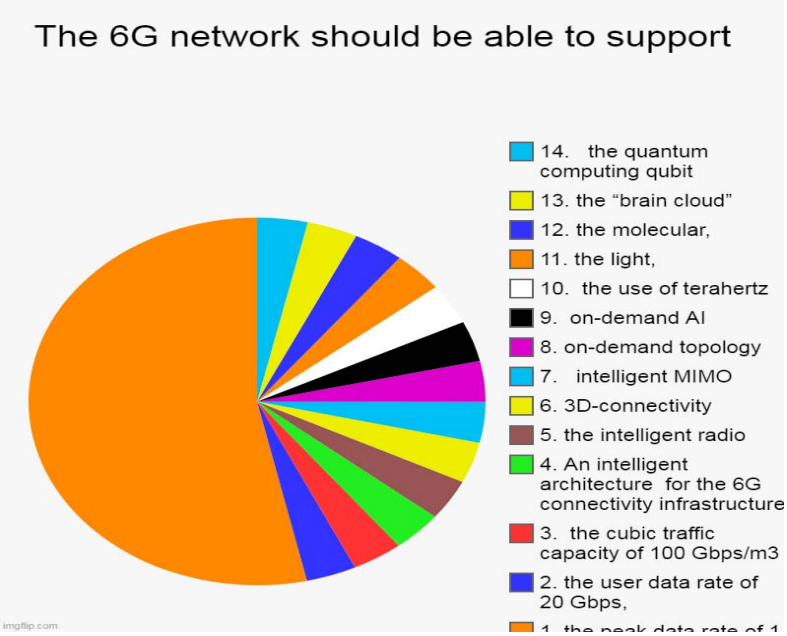

Figure 2 (by author Miloslav Hoschek)

But you should tackle the following aspects holographic, tactile, human-corporate bonds. Holographic communication, such as holographic communication is one aspect that adds charm to the age of 6G. A hologram is a 3D technology that manipulates the light rays emitted by an object and captures the resulting interference patterns using a recording device. In practice, sending a 3D image without a stereo sound is not enough to depict face-to-face presence characteristics. In the 6G era, the reconfigurable stereo audio can be leveraged on the development platform and used for multiple physical presence in each setting. In other words, there is enough freedom for the entity to interact and modify the holographic data or video received as needed. It is a reliable network link that consumes holographic data and requires high bandwidth.

The fault building in order to connect to the server can be a tough need for these technologies. This situation can cause the design of a new physical layer scheme that enhances the signal system design and the implementation of waveform multiplexing. Another aspect that requires attention is that procedures such as buffering, queuing, scheduling, handover, and protocols that eet the needs of the 6G network are obviously not able to meet these needs, and therefore the existing wireless communication systems need to be analyzed by the fiber-optic system.

The futuristic present of the 2030s is predicted, featuring holographic calls and haptic internet for non-existent wireless communication scenarios. The 6G provides the same reliability as a wired network with a low bit error rate when considering supported application types. Key features for the future 6G i THz wireless communication systems, AI and programmable intelligent surfaces are listed prominent among all the blocks these innovations welcome the fundamental depar-ture practised in the mobile wireless tele-communications industry (Montanaro, 2015).

Human-to-corporate 6G bond technology focus on communication expect to have access to physical features, to share them, and to express physical phenomena as they are (*Table 3*). This project will always involve the five senses of human beings. As an example of this technology, there is a"*communication by breathing*" project, it is possible to express the exhaled air up to the interaction with the human body by inhalation using volatile organic compounds. As a result, such technologies facilitate the diagnosis of diseases, the detection of emotions, the collection of biological features and remote interaction with the human body. Designing a communication system that mimics the human senses requires interdisciplinary research cooperation. Such research has led to the creation of a hybrid communication technology that extracts various physical quantities and distributes them to the desired receiver through a secured channel.

Table 3.

Key features for the future 6G THz wireless communication system

The evolution of connectivity such as ultra-high speed, large capacity, and low latency
Development of new frequency bands including terahertz frequency
Providing ultra-low energy and ultra-low cost communications
Functions including large devices-connectivity and sensing

Source: compiled by author Miloslav Hoschek.

Comprehensive, reliable, effective, and reliable cyber security of all the network elements but an important component of internal and external testing. There are industry-standard equipment vendors,network operators,and service providers that are certified to perform independent external testing. The potential for new services supported by future "6G" technologies to be launched by 2030 is that the 6G network, which is more demanding on key performance indicators (KPIs) of the 6G network, it's a very intelligent architecture. The6G research team and 6G network architecture, In addition, 3D connectivity, intelligent MIMO, on-demand topology, on-demand AI, 6G network 6g network corresponding to the innovation instance and its application scenario and THz channel model scaled from 5G digital map-based hybrid channel model.

Artificial intelligence and machine learning, built on distributed data sets and shared information, dynamic and psychological based on behavioral and automated investment services the adoption of such technologies will be critical for leading financial institutions to efficiently manage their client base and investment portfolios. The combination of predictive and cognitive abilities is a trend that involves technology partners, as observed in the case of IBM's Watson and Google's AlphaGo (Hartnett, 2019).

The first mover to work with technology companies within the ecosystem will change the game to look forward to the next generation of quantum computing. The explificial intelligence will fill another book, but it is difficult to specify what quantum mechanics means at all, because it is so powerful that IBM expects to see artificial intelligence and machine learning be done exponentially faster if Google is building a quantum computer as well, and it works reliably (Google’s Sycamore Machine and Quantum Computing, 2019).

Quantum computers will accelerate the automatic investment in simulation, optimization, and among many other services in the coming years ultra-fast and robust cloud computing will impact how the world and things are done and the industry as these machines are integrated into the financial services ecosystem.

Conclusions

Quantum communication, a practice that uses the principles of quantum mechanics to secure communication. Quantum key distribution is one of the most developed approaches. What is special about Quantum key distribution is that the eavesdroppers of the quantum channel can safely share the key without the possibility of stealing the key. They should have at least a general idea of what quantum science is. As technology advances grow, the attack rate of cyber warfare also rises. Artificial intelligence and quantum computing are two large enhancers of the cyber domain. Due to their capabilities, they will have a significant impact on cyber warfare, but the potential to significantly increase the number and threat level of adverse cyber attacks.

The 6G communication is currently 5G communication further, with the provision of enhanced services in terms of network data availability, mobile data rate, seamless ubiquitous connectivity, 6G communication is accepted in various mobile data categories, and to transmit them through traditional enhanced radio frequency network. such an unusual process allows a novel radio transmission of emotions with the presence and participation of a virtual.

Quantum computers have enormous capabilities, but they also have a lot of self-constrained intelligence in their own systems. Quantum computing artificial intelligence must be understood in the context of other technological advances like block artificial intelligence and quantum computing. Data is one strategy open paradigm for business drivers privacy laws and data-sharing agreements are always part of the game if it comes to the data of the client.

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LEGAL REGULATION FEATURES OF THE FIGHT AGAINST CYBERTERRORISM AND PERSONAL DATA PROTECTION POLICIES IN UKRAINE AND ABROAD

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Abstract. Article deals with the legal regulation features of the fight against cyberterrorism and personal data protection policies in Ukraine and abroad. Legal regulation of the use of personal data is essential in ensuring the quality of scientific research. The Law of Ukraine «On personal data protection» establishes both general rules applicable to any type of personal data processing and special rules applicable to the analysis of certain categories of personal data, such as information obtained during clinical trials. This paper provides an overview of new standards that regulate aspects of personal data processing in the context of research activities in Ukraine (personal health data, genetic, biometric information, etc.).
Keywords: *personal data protection, cyberattack, cybersecurity, law, personal data.*

Introduction

The Institution of Personal Data is a special institution for the right to privacy in the context of automation and the development of new information technologies.

The establishment of large computer centres and the concentration of different types of information therein have made it necessary to regulate the use and protection of personal information.

Personal data protection has received increasing attention worldwide, and some countries have developed considerable legislative and enforcement experience in this area, which should be used in Ukraine. In particular, legislation on the personal data protection has been developed for quite some time in Europe.

One of the first targeted laws on personal data protection (hereinafter PDP) was the German Land Law of Hessen "On data protection" of 1970, which later became a federal law. On the basis of the premise that the possession of information about citizens constitutes a «public force» the authors of the law rightly believed that automated processing of data without taking measures to protect it poses a threat to personal freedom and, as a consequence, poses a threat to civil society.

The Organization for Economic Cooperation and Development (OECD), which in 1980 adopted the Directive on the Protection of Privacy and International Exchanges of Personal Data, addressed the issue of the personal data protection at the international level.

The international recognition of the importance of the personal data issue was reinforced in 1981 by the adoption by the countries of the Council of Europe of the Convention on the Protection of Natural Persons in the Personal Data Automated Processing». In the context of the application of the latest information technologies and computer and telecommunications technologies the Convention takes the view that the rights and interests of the individual may be violated by the unauthorized use of personal information to the detriment of the individual, thereby negating its natural, vital rights, which are the foundation of human freedom. Consequently, these rights should be protected by the State.

Literature review. Today there are a lot of articles in the field of cybersecurity relating to the technical part of this issue. The number of studies that highlight scientific and organizational issues of implementing projects on cybersecurity is much smaller. Some countries define security goals only; others have efficient mechanisms of risk management in this area. There are different approaches to determining the protection of personal data and privacy. These national differences are influenced by cultural norms of the society and have different advantages and disadvantages. The implemented method of risk analysis allows comparing security systems, which may determine the degree of their readiness to participate in the project activities of cybersecurity.

Research methodology. The article contains an analysis of the problems encountered in establishing and developing legislation on the protection of personal data. It is, first of all, the approach connected with the interpretation of such processes as "cybersecurity", "cyber defence" and "cyberwar". A sociological approach to cybersecurity research involves the study of information conflicts of value and ideology. The multidisciplinary approach, or multidisciplinary approach, is known to be based on a generalized picture of the subject and to set out its research formats that go beyond disciplinary and interdisciplinary approaches.

Research results. In general, the system of European legislation on PSP consists of the already mentioned Council of Europe Convention "On the Protection of Natural Persons in the Automated Processing of Personal Data" of 28 January 1981 amended in 1999, which was the first international legal instrument in the field of personal data protection; Additional Protocol to the Convention "On the Protection of Natural Persons in the Automated Processing of Personal Data concerning Supervisory Authorities and Cross-Border Data Flows" of 8 November 2001 as well as Directive of the Council of the European Union 95/46/EC "On the protection of natural persons in the processing of personal data and on the free circulation of such data" 1995 and Directive 97/66/EC "On the processing of personal data and the protection of the rights of natural persons in the telecommunications sector" 1997. In particular, the use of personal data without the consent of Internet users is contrary to the Council of Europe Convention on the Protection of Natural Persons in Automated Processing of Personal Data.

The above-mentioned instruments are binding not only on the member countries of the European Union, but also serve as models for law enforcement in countries seeking membership of the European Community.

Over the past 30 years more than 20 European States have adopted personal data protection regulations that establish mechanisms for the legal regulation of personal data communications.

The basic principles of the personal data protection in European legal acts are: the collection and processing of personal data (PD) must be carried out correctly and legally; the use of the PD must be adequately defined for the purposes intended, their use must be limited in time, appropriate to the purpose; PD must be accurate; PD must be processed only with the consent of the data subjects; PD must be accessible to the data subjects, including to refine the data; PD must be adequately protected.

Unlike in the EU in the USA there is no federal legislation on the personal data protection at all. According to experts, United States intelligence agencies are prohibited from gathering personal information only on United States residents (which is also not observed in practice). This is not the case with other countries' residents. There is no guarantee that the above-mentioned personal data will not be used or used to harm residents of other States.

In July 2010 Ukraine ratified the Council of Europe Convention on the Protection of Natural Persons in Automated Processing of Personal Data and its Additional Protocol on Supervisory Authorities and Cross-border Data Flows. Ukraine has also adopted laws: «On the protection personal data (from 01.06.2010), "On access to public information" (from 13.01.2011) and "On information" (new version from 13.01.2011). However, despite the existence of a fairly extensive legal framework on the above-mentioned issues, effective personal data protection is not ensured in Ukraine.

Thus, on July 3, 2013 the Law of Ukraine "On the Protection Personal Data" was amended (entered into force from January 1, 2014), which negatively evaluated most

domestic experts on the protection of information with limited access.

First, under these legislative changes the State has removed any responsibility to protect the personal data of its residents. Thus, article 24 of this Law deleted the provision that "the State guarantees the personal data protection". Only the Commissioner for Human Rights (Ombudsman) of the Verkhovna Rada (together with the limited staff of its secretariat) and the courts (see art. 22 of the amended Law) now monitor compliance with PDP legislation. The Law has even removed the rule that the State Service for the Personal Data Protection, which must be recognized, also exercises control over PDP. In practice it also lacked the necessary authority and facilities to effectively perform PDP enforcement functions in the country. For example, owing to the heavy workload of the Public Service to date, applications for the registration of personal databases for only the end of 2011 are being processed (applications for 2012 and 2013 have not even started)!

As can be seen, the entities involved in the personal data protection of residents in Ukraine do not include the State, which is primarily required by international legal instruments to take part in this field of activity**.**

Second, the interpretation of the term "consent of the subject of personal data" for data processing has disappeared from article 2 of the Law. This is a dangerous development, as it is currently unclear what constitutes consent of the subject, and this can be interpreted differently depending on the circumstances, leading to abuse of the PDP in practice.

Third, the task of the so-called owners or managers of residents' personal data who process the data to protect the PD has now become formally more complex: the Ombudsman is required to submit not only a register of personal data belonging to a category that poses a particular risk to the rights and freedoms of the PD subjects (the procedure for the allocation of this category of data is also not defined and regulated in the Law), but also information on the person or structural subdivision of the organization responsible for organizing work related to the personal data protection during their processing, which will not ultimately improve the situation with regard to PDP in Ukraine.

Fourth, the Law of Ukraine "On the Personal data protection", as well as the changes introduced therein, do not focus on the peculiarities of the budget financing of the authorized bodies providing the PDP in the country, but these bodies (Human Rights Commissioner of the Verkhovna Rada, The Ukrainian State Service for the Personal data protection, established in December 2010) does not have an adequate material and technical base, a set of necessary organizational and information support tools and a staff of professional staff; which could effectively implement public policies in the area of PDP. It is also unclear how the actual limited pool of officials of the secretariat of The Human Rights Commissioner of the Verkhovna Rada, who is ignorant in PDP issues from 1 January 2014, on the basis of the above-mentioned Law, will carry out "exit and no-travel, scheduled and unscheduled checks of PD owners or managers" of residents, as well as carry out proper maintenance of the State Register of Personal Data Bases and applications for registration of such databases?

The Law of Ukraine "On the Personal data protection" was amended in 2015, 2017, 2018, 2020.

In addition to the above-mentioned legislative initiatives, on 24 July 2013 the Verkhovna Rada of Ukraine submitted to the Verkhovna Rada a draft decree on the establishment of the Temporary Special Commission (TSC) of the Verkhovna Rada of Ukraine (consisting of six persons, with the term TSC activity - six months) Investigation of the level of threat to the national security of Ukraine, data collection and retrieval programs of the United States Intelligence Services.

We believe that the establishment of a new State structure, a relevant Parliamentary Committee, various special commissions of inquiry, etc. in the field of PDP control will not fundamentally change the situation in the country to strengthen the protection of the residents of Ukraine against the illegal use of their confidential and personal data and will not improve the level of national security of the State as a result. This task is to be carried out by the special units of the State authorities responsible for ensuring the national security of the country, in particular the intelligence / counter-intelligence units of the Security Service, etc. As world practice has shown the system of personal data

protection must be developed and maintained at the appropriate level by intelligence agencies and the State National Security Agency, with adequate budgetary resources allocated to those services and authorities. For example, our nearest neighbor, Russia, recently allocated 40 million rubles to protect itself from cyberattacks by the law enforcement network. Russia has been able to provide a wide range of services to support the newest hardware and software complex, which received its code name "CADPS" ("Computer Attack Detection and Prevention System").

Thus, to date, the de facto Ukraine is not responsible for the PDP security, integrity and confidentiality*. It has fully transferred this responsibility to the owners, PD managers and third subjects (see art. 24 of the Law of Ukraine* "*On PDP*"). Unlike in European countries personal data protection in Ukraine becomes an exclusive corporate obligation of individual enterprises / organizations in our country.

But since the State is the main institution for the protection of human and civil rights and freedoms, including in the field of information, we believe that the result of legislative, law enforcement and other activities, regulate and control the behaviour of the parties involved in the circulation and processing of personal data, rather than transferring this responsibility to other actors in the PDP.

According to domestic information security experts, the Law on PDP requires immediate conceptual and systemic changes, without which its practical applicability and effectiveness cannot be guaranteed.

The use of the accumulated international experience makes it possible to establish personal data legislation in Ukraine, not only in the light of the standards achieved, but also in some cases, to propose more progressive legislation in comparison with the already existing regulatory options on selected issues in particular on the basis of the personal data ownership.

In addition to the legal framework on PDP cybercrime and cyberterrorism are also regulated in foreign countries.

In recent times in the international community including at the State level there has been talk about the serious threats to information security. In particular in the United States in February 2013, Internal Security Minister Janet Napolitano announced the threat of the "impending cyber apocalypse". The Minister called for a new law allowing the Government and the private sector to share information to prevent computer attacks. Such a law was rejected by Congress in 2012. It was rejected by the Congress because of numerous public protests.

In addition, the United States is preparing to promulgate a number of presidential decrees adopted as part of the new cybersecurity program. The program is expected to cover transport companies, municipal services and banking. Common cybersecurity standards for all federal agencies will also be proposed.

The National Strategy to Secure Cyberspace (NSSC) was previously published in the United States in 2003. The document was a part of the broader National Strategy for Homeland Security (NSHS) in response to the terrorist attacks on the 11 September 2001.

In the following years action plans and strategies to address cybercrime and cyberterrorism began to be developed throughout Europe. In 2005, Germany adopted the National Plan for Information Infrastructure Protection (NPIIP).

Subsequently, following a major cyberattack in 2007 Estonia was also one of the first EU member countries to publish a national cybersecurity strategy in 2008. Since then much work has been done at the national level, and in the last four years, ten EU member countries have published their national cybersecurity strategies, which in fact provide a model for addressing the challenge of cybersecurity within States.

In February 2013 the Government of Australia proposed a new national security strategy. The document refers to the need for cooperation between government and business in combating cyberthreats. Plans for a nationwide cybersecurity system were also announced by the Indian authorities.

The Council of Europe Convention on Cybercrime adopted in Budapest on 23 November 2001 was the product of many years of efforts by the Council of Europe. The Convention on Cybercrime was adopted in Budapest. It is one of the most important documents governing legal relations in the field of the global computer network and is the only document at this level so far. Its

adoption is a landmark in the history of the fight against cybercrime.

In February 2013 the European Commission with the EU High Representative for Foreign Affairs and Security Policy published the Cybersecurity Strategy with the draft Directive on Network and Information Security (DNIS). A strategy called "Open, Safe and Secure Cyberspace" represents the EU's comprehensive vision of how to prevent and respond to technical failures and cyberattacks the best. Concrete actions are aimed at increasing the resilience of information systems, reducing cybercrime and strengthening the EU's international policy on computer security (EU Cybersecurity plan to protect open internet and online freedom and opportunity. Press release. EUROPEAN COMMISSION, 2013).

In addition, the Cybersecurity Strategy presented by the European Commission requires each EU member State to establish a computer emergency response team.

However, despite the existence of general European declaratory legal instruments to protect cyberspace the EU does not currently have a single regulatory framework for cybersecurity systems. Moreover, national authorities often refuse to share information with foreign counterparts.

In February 2013 the European Commission proposed to the EU Parliament a bill to tighten the rules of cybersecurity by requiring Internet companies, such as search engines, banks, stock exchanges and a wide range of companies facing cybercrime, Mandatory reporting to public authorities. The Commission notes that this is not only a case of hacking, which can lead to security failures and data leaks, but also other types of incidents with such consequences. It's a human factor and it's just a mechanical failure. Practice shows that the legislative process in the European Parliament takes about two years, but as a result such laws are adopted with some changes.

In this context, recent discussions on the need for uniform legislation to protect PDP at the European level draw particular attention. Thus, on 22 January 2012 EU Commissioner for Justice Vivian Reading addressed the Munich International Conference on Internet Development announced that it would soon present its proposals on the possibilities of unified EU legislation in the personal data protection.

Information relations connected with ensuring cybernetic security in Ukraine as a whole are currently regulated by the laws of Ukraine "On Information" (1992), "On Scientific and Technical Information" (1993), "On Telecommunications" (2004), " On information protection in information and telecommunication systems" (1994), "On Access to Public Information" (2011), "On Access to Public Information" (2011) and others.

Thus, Ukrainian legislation already contains a number of legal norms aimed at the legal protection of Ukraine's cybersecurity. At the same time, the Law of Ukraine "On the Security of Information in the Information and Telecommunications Systems" is playing a key role in ensuring cybersecurity, which governs information security relations in information, telecommunication and information and telecommunication systems.

However, Ukraine was only in the process of establishing a legal framework to combat cyberterrorism. Thus, in May 2013 in first reading the Verkhovna Rada of Ukraine adopted the draft Law «On Amendments to the Law of Ukraine "On Fundamentals of National Security of Ukraine" concerning cybernetic security of Ukraine". In particular, the meeting noted the importance and urgency of addressing the issue of the legal framework for combating computer crime and computer terrorism. The project was withdrawn.

Denmark, the United Kingdom, Finland, Sweden and the Netherlands are currently the most vulnerable countries to cyber threats.

Discussion of research results. The cross-border nature of cyber threats has forced countries to engage in close international cooperation. For example, the European Information Security Agency operates in Europe (EISA).

As noted above, in Tallinn the Cooperative Cyber Defense Center of Excellence (CCDCE) was opened in middle of 2008 with the support of 7 NATO member countries. The main objectives of the Center are to conduct research, provide advisory services and train personnel for national cyberterrorism units. About 30 specialists from Estonia, Germany, Italy, Latvia, Lithuania, Slovakia, Spain and the USA are permanently employed.

The Cyber Defence Management Authority (CDMA) became the NATO Member State cybersecurity focal point. It was established at the end of 2008 to coordinate the actions of

the participating countries after the 2007 cyberattack on Estonia. It is now the main advisory authority of the NATO Cybersecurity Council providing all members of the Alliance with advice on cybersecurity-related issues. Managed by the Cyber Defence Management Board, which consists of the heads of the NATO political, military, operational and technical heads responsible for cybersecurity.

In addition, there are several monitoring and decision-making authorities in the field of cybersecurity of NATO countries. The most important of these are:

- The North Atlantic Council, which is the highest political authority overseeing NATO cyber defence policies and actions;
- Defence Policy and Planning Committee (DPPC). This Committee develops strategic proposals for Council approval (e.g., the development of the NATO Cybersecurity Policy or the NATO decision to establish the Cyber Defence Management Authority).

It is also worth mentioning the NATO Consultation, Control and Command (NC3) Board, which is the main authority for consultation on technical and production aspects of cyber defence. Together with the Military Authorities (NMA). These authorities are responsible for approving operational requirements, as well as acquiring and implementing NATO cybersecurity capabilities (Revskyi, 2011.).

It should be noted that while prior to the attack on Estonia NATO focused on protecting the communications systems used by the Alliance, after 2007 NATO's aim was to protect communications systems, directly used by its members, which has led to the development of assistance mechanisms for those countries requiring support to protect their computer systems, in particular through the dispatch of rapid reinforcement teams (RRTs).

Conclusions

However, the NATO member countries continue to bear the primary responsibility for the safety and security of their communications systems.

The consequence of the policy of «reboot» was that international organizations and the United States began to actively involve Russia in the preparation of a convention on cyberwar. One of its main tasks is the attempt to remove «civic» objects from the cyberattacks on the Internet. In addition, the possibility of establishing an international tribunal to try.

The decision to start working on cyberwar rules was launched in May 2010 at the first Cybersecurity Summit in Dallas.

In conclusion, I would like to emphasize the following: to deny today the existence of cyberterrorism in its various manifestations, as a serious threat that challenges the international community, is reckless and short-sighted. The challenge for States is not only to clearly identify the problem, but also to develop effective legal and technical means to combat it.

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GLOBAL PROBLEMS IN THE WORLD AND THEIR CONSEQUENCES

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As a rule, the end of the year is the most responsible time for the most analytical institutions. It is during this period that the results for the year are summed up, in the geopolitical sphere included. All this applies to the current 2020, which has become one of the turning points in modern history. Thus, the main feature of 2020 was the exacerbation of all major world-class problems that have reached a critical level. Most of them are deep in nature and have matured over the years. At the same time, it was in the current year that they acquired a qualitatively new meaning, which was the result of the COVID-19 pandemic and a number of other political and economic factors. Based on the analysis of the situation in the world, as well as the experts' assessments, **the greatest geopolitical problems of 2020** were:

...Unreadiness of leading international organizations to effective work in the conditions of a global crises...

– unreadiness of leading international organizations to effective work in the conditions of a global crises. This applies to both the UN and the OSCE, as well as the G7, G20 and the EU. With the spread of the COVID-19 pandemic across the world, they canceled some of their activities, moved to video conferencing mode, or even withdrew from addressing global and regional security issues. Besides, the pandemic has further weakened the unity of the European Union. This was reflected in differences between EU member states on how to counter COVID-19, in particular on the allocation and distribution of funds to support and restore the European economy.

The decisions of leading international organizations to counteract the pandemic and overcome its consequences were not very effective. In fact, they only temporarily halted the development of the COVID-19 crisis by providing assistance to the most affected countries, but failed to prevent a second wave of the pandemic with even more negative consequences. The world's leading nations have also failed to work together to develop effective medications to prevent and treat the coronavirus infection;

...Aggravation of the confrontation between the United States and China for influence in the world in fact to the level of a new global "cold war"...

– aggravation of the confrontation between the United States and China for influence in the world in fact to the level of a new global "coldwar". At this, the rivalry between the parties in the trade, economic, scientific and technical spheres was complemented by mutual demonstrations of force both at the strategic level and in the Asia-Pacific region.

In early 2020, both the United States and China announced plans to strengthen their nuclear and missile capabilities, based on mutual accusations of aggressive intentions and attempts to gain an advantage in the nuclear sphere. At the same time, the United States and China began conducting "symmetrical" military exercises in the East China and South China Seas and around Taiwan. Such measures involve powerful naval groups consisting of carrier strike groups and strategic and tactical aviation;

...The confrontation between the United States/NATO and Russia has reached a qualitatively new level...

– the confrontation between the United States/NATO and Russia has reached a qualitatively new level. The greatest danger is the parties' moving to mutual measures of military pressure in the same regions of the world and in almost the same period of time with the involvement of elements of nuclear and missile forces.

In 2020, in response to the Russian Armed Forces' SCPE on the western direction, the United States and NATO began conducting their own Defender Europe exercises, working out a range of issues related to repulsing possible Russian aggression (including the redeployment of US troops to Europe).

In addition, as part of these and other measures, the United States and Russia have intensified strategic aviation flights in the Baltic and Black Sea regions with the task of inflicting conditional strikes on enemy targets. At this, the US Air Force carried out such flights over the territory of the Baltic States, Poland and Ukraine with practical bombing at the bombing range in Latvia — in the direction of Moscow. In turn, Russia's long-range (strategic) bombers fly in the airspace of Belarus with practical bombing at the bombing range in the Brest region near the border with Poland. The result is an increased threat of armed incidents between Russia and the United States/NATO, which could escalate into larger clashes between the parties, including with the use of nuclear weapons.

Another critical factor is the measures taken by Russia and the United States to restore and modernize their tactical nuclear potentials, as well as to demonstrate their combat capabilities, which lowers the threshold for the possible use of nuclear weapons. From 2018–2019, the Russian Armed Forces began rebuilding heavy artillery units armed with tactical nuclear munitions, namely the 240-mm Tulip self-propelled mortars and the 203-mm Malka self-propelled guns. In response, in 2020, the United States for the first time conducted exercises to deploy in the Baltic and Black Sea regions, tactical missile systems HIMARS, which can launch ATACMS ballistic missiles up to 300 km. Besides, the United States has announced the possibility of deploying hypersonic missiles in Europe with a range of about 1.6 thousand km;

...Dismantling the international legal basis that ensured strategic stability in the world and arms control...

– dismantling the international legal basis that ensured strategic stability in the world and arms control. Since the early 2000s, the Conventional Armed Forces in Europe Treaty, Anti-Ballistic Missile Treaty and the Treaty on the Elimination of Intermediate-Range and Shorter-Range Missiles (the INF Treaty) have been suspended. And in 2020, the United States withdrew from the Open Skies Treaty, which provides for the possibility of unarmed reconnaissance aircraft flying in the airspace of the signatory countries. The reason for this was called a gross violation of the treaty by Russia;

Significant problems also arose with the prolongation of the Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (New START). The United States insists on China's joining the New START because it has strategic nuclear weapons. But Beijing is avoiding it. Besides, the United States is trying to combine the New START with the INF Treaty, which has been challenged by Russia;

...Growing influence of shadow and corruption structures, which become separate centers of influence on the development of the geopolitical situation...

– growing influence of shadow and corruption structures, which become separate centers of influence on the development of the geopolitical situation. A significant problem is the corruption in the highest authorities and political and business (oligarchic) circles of the world's leading countries. As a result, their policies are beginning to be determined not by national interests but by the personal goals of the corrupt, which is another reason for the destabilization of international relations. An example of this is the corruption-oligarchic system of state power of the Putin regime in Russia, which works exclusively in its own interests. D. Trump's rule in the United States is also somewhat corrupt. For example, D. Trump and his environment have been repeatedly accused of tax evasion and corrupt ties to Moscow. This is exactly what caused D. Trump's "flirtations" with Russia.

Former French President N. Sarkozy was accused of corruption, and a court hearing was held in 2020. By the way, in the autumn of 2008, N. Sarkozy, the President of France's OSCE chairmanship, actually helped Russia evade responsibility for the attack on Georgia. Today, Russia is resorting to criminal schemes to bribe European politicians and political forces in order to influence their pro-Russian policies;

...Exacerbation of existing and emergence of new sources of tension in the world...

– exacerbation of existing and emergence of new sources of tension in the world. Worsening of socio-economic problems in most countries of the world as a result of the negative effects of the COVID-19 pandemic has led to growing protest moods among their populations. This was evidenced by mass protests in the United States and Europe against quarantine measures.

Besides, further deepening of social inequality between rich and poor countries and different strata of the population in many countries around the world has been the catalyst for another wave of terrorism and various national and religious riots.

The topic of terrorism was discussed in more detail in my previous article, "The Threat of Islamic Extremism. Reasons and Consequences for the World and Ukraine". I can only add that the outbreak of extremism in Europe in the autumn of 2020 was, in fact, the largest since the USA and its European allies conducted military operations in Afghanistan, Iraq and Libya in the 2000s and early 2010s. At the same time, the activities of Islamic extremists in the North Caucasus of Russia intensified.

African Americans' mass protests against violations of their rights have become a significant problem for the United States. In a number of cases, such protests were accompanied by riots, which forced the authorities to use the National Guard to restore law and order. Riots among migrants have also occurred in some European countries. At the same time, the US intelligence agencies have concluded that Russia is behind the above-mentioned events.

A powerful source of global instability is food shortages due to global climate change, which causes significant damage to agriculture. The result of this trend is rising world food prices and shortages of food in a number of countries. To date, this has played an additional role in increased flaw of migrants and refugees from poor to rich countries, including the United States and Europe, complicating the above-mentioned problems.

I should also point out the emergence of new and exacerbation of existing conflicts in different countries and regions, resulting in intensified struggle between the world's leading powers for redistribution of spheres of influence, problems related to the pandemic, competition for access to resources and all sorts of internal conflicts.

In this regard, the most illustrative were: armed border clashes between India and Pakistan; resumption of large-scale hostilities between Azerbaijan and Armenia in Nagorno-Karabakh; mass protests in Belarus against the government's falsification of the presidential election results; another revolution in Kyrgyzstan, which was a reaction to the country's leadership's attempts to falsify the results of the parliamentary elections.

...Time magazine called 2020 "the worst year ever in world history since the end of World War II"...

In general, these processes have significantly complicated the situation in the world, and had a negative impact on the development of the world economy. Thus, according to IMF experts, in 2020 the fall in world GDP is expected at about 3 %. According to experts of international financial institutions, over the next five years, the world economy may lose about 30 trillion US dollars. With this in mind, the authoritative American Time magazine called 2020 "the worst year ever in world history since the end of World War II". According to analysts of the Time, it can be compared only with the Great Depression of the 1930s.

...Based on these circumstances, experts from different countries draw conclusions about the possibility of a global crisis in 2021...

Based on these circumstances, experts from different countries draw conclusions about the possibility of a global crisis in 2021. Thus, according to former US Secretary of State H. Kissinger, the situation in the world "similar to World

War I", which is a consequence of the confrontation between the two largest countries in the world — the United States and China. In his opinion, the planet is moving towards a new world war.

In November 2020, a similar estimate was made by the Chief of British Defence Staff N. Carter. According to him, current global uncertainty and economic crisis due to the COVID-19 pandemic could lead to World War III. The reason for this is the increase in the number of local conflicts in the world, which creates risks of escalation of armed confrontation of regional and global levels.

The same forecasts are in the Czech Military Intelligence Report on the situation in the world, which was published in November 2020. According to Czech military experts, "the possible global conflict that the world is currently moving towards is still in the first stage of its preparation. The minds of those who can and want to take an active part in it are being formed, and technological tools are gradually being identified in order to manage them". Czech intelligence calls the confrontation in the US — China — Russia triangle the cause for the crisis. This confirms the decline in the importance of international law due to the lack of peaceful dialogue and reduced effectiveness of world organizations in the sphere of collective security.

Finally, according to Executive Director of the UN World Food Program, D. Beasley, in 2021 humanity is facing one of the most serious humanitarian challenges since the end of World War II. In total, 270 million people could die of starvation. In turn, food shortages will catalyze the emergence of new conflicts due to the intensification of the struggle for resources between different countries and groups.

Against this background, in November 2020, during a meeting of the Central Military Commission (CMC), Chinese President Xi Jinping called on the command and personnel of the armed forces "do not fear hardship and do not fear death, to strengthen training under real combat conditions and raise their capability of winning wars".

Of course, these estimates can be exaggerated and in some ways emotional. Besides, after J. Biden's inauguration as President of the United States, he may change US policy toward China in order to make it more constructive. Nevertheless, relations between the United States and China will remain tense, accompanied by continued military confrontation. At the same time, as a result of J. Biden's intentions to take tougher actions to curb Moscow's neo-imperial course, the US — Russia confrontation should be further intensified.

Given the lack of real prospects for a rapid response to the negative effects of the COVID-19 pandemic on the world economy and most countries, complications and all related problems will arise. All this will really lead to an increase in the conflict potential in the world, as well as an growth of threats of wars and armed conflicts.

...These circumstances fully apply to Ukraine, which remains under the influence of all global problems...

These circumstances fully apply to Ukraine, which remains at the intersection of the interests of the West and Russia and, to some extent, China, and is under the influence of all global problems. Given this, all of these problems will inevitably affect our state. As before, the greatest danger for Ukraine will be the possibility of expanding the scale of armed aggression by Russia. Taking into consideration the changes in the world situation, such actions by Moscow may be aimed at diverting the attention of the Russian population from Russia's own problems, as well as improving its strategic position in the military confrontation with the United States and NATO.

Evidence of this is Russia's outright refusal to resolve the conflict in the Donbas. Moscow also keeps demonstrating force to Ukraine, building up its troops on the Ukrainian direction, and conducting offensive military exercises.

The reality of such threats requires appropriate preparations in Ukraine's defense sector. At this, both the peculiarities of modern armed conflicts (in particular, in Nagorno-Karabakh) and the classical methods of conducting full-scale wars should be taken into account.

By the way, the fact of "the end of the cycle of asymmetric warfare and returning to symmetrical, state-on-state conflicts with equal opponents" is stated in the new program of modernization of the French Armed Forces. This is the basis of their further development.

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Rector
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For reference: The printed edition of the Independent Analytical Center for Geopolitical Studies "BORYSFEN INTEL" — Geopolitical Analytics Journal "BINTEL". The journal publishes analytical materials from leading experts in their field of research. The authors of the publications are both, analysts — citizens of Ukraine, and representatives of other countries. It is published quarterly in Ukrainian and English. Is distributed by subscription in Ukraine and through the Internet.

National University of Water and Environmental Engineering

National University of Water and Environmental Engineering (NUWEE) is one of the best technical Universities of Ukraine. For more than 100 years our University creates thriving environment for students and researchers, and provides professional engineering expertise and services to the Government and private companies.

Today the University is one of the prominent modern educational establishments of Ukraine that became Alma mater for more than 70,000 domestic and international alumni. Our advances in water management engineering, advanced water treatment and environmental technologies, latest information technologies, economics and business made the National University a truly unique place for students to excel in technical disciplines as well as in business. Our graduates work in a variety of industries both in Ukraine and abroad.

NUWEE is the only higher education establishment in Ukraine that trains personnel for the water management and ameliorative complex of our state.

The nine Institutes of the University are guided by 374 Philosophy Doctors, 72 Habilitated Doctors - Professors, 45 Academics of the Academy of Sciences of Ukraine.

The University has extensive international relations with higher education institutions and international organizations of Poland, Germany, France, the USA, Georgia, the Republic of Azerbaijan, Turkmenistan, Kingdom of Morocco, China, Republic of Ecuador, Comoros and many other countries all over the world.

The University is the largest higher education establishment in Rivne region and the leading HEE of Ukraine; it consists of 9 institutes, 5 training and consulting centres, 5 colleges. The University offers full-time and part-time studies, distance learning studies in 39 bachelor degree programs and 41 master degree programs. University also provide 24 PhD and 7 Doctoral studies. The main institutes and specialties are listed below:

RESEARCH AND EDUCATIONAL INSTITUTES

WATER MANAGEMENT AND ENVIRONMENTAL ENGINEERING

- Building (Hydraulic Engineering Construction)
- Hydropower Engineering
- Water Engineering (Water Resources)
- Heat Power Engineering

AUTOMATICS, CYBERNETICS

- Automation and Computer Integrated Technologies
- Applied Mathematics
- Informatics. Computer Science
- Computer Engineering

AGROECOLOGY AND LAND MANAGEMENT

- Agronomics
- Water Bioresources and Aquaculture
- Geodesy, Cartography and Land Management
- Ecology, Environment Protection and Balanced Natural Resources Application

LAW

- Law

ECONOMICS AND MANAGEMENT

- Entrepreneurship, Trade and Stock-Taking Activities. Economics of Enterprise.
- Management
- Accounting and Auditing
- Human Resource Management and Labor Economics
- Finance, Credit and Banking Affairs
- International Economics

• Marketing

BUILDING AND ARCHITECTURE

• Architecture
• Construction.
• Civil Engineering.

MECHANICS

• Automobile Transport
• Mining
• Mechanical Engineering
• Transportation Technology Means

HEALTH AND CARE SCIENCES

• Physical Rehabilitation

The main research directions of the University:

- technologies of water treatment, drainage and wastewater treatment, sludge disposal
- energy efficient and resource saving technologies in water management and agriculture
- construction objects, building materials
- architectural forms, design environment
- sustainable development solutions, system modeling
- social, economic and environmental studies on rational nature management
- methods for assessing and forecasting the impact of man-made pollution on the environment
- problems of economic assessment of natural resources and environmental quality.

The University has extensive international relations with more than 100 higher education institutions and international organizations of 25 countries, namely of Poland, Germany, France, the USA, Georgia, the Republic of Azerbaijan, Turkmenistan, Kingdom of Morocco, Republic of Ecuador and many other countries all over the world. So, our students are active in exchange programmes with university-partners. NUWEE has also concluded agreements on joint bachelor's and master's degree programs with six Polish Universities and our students have the possibility to obtain two diplomas during their studying, of Ukrainian standard and European standard. In the University there was implemented the first in Ukraine exchange traineeship programme with the University of the Kingdom of Morocco.

NUWEE is among 20 of best Universities of Ukraine according to the ranking "Top-200 Ukraine" of the international social and political journal "Mirror of the Week". The University was awarded the Order of Friendship of Peoples, is listed in the "Golden Book of Business Elite of Ukraine", and is a multiple winner of ratings "Golden Fortune", "Best Enterprises of Ukraine" in the category "Higher education" and in the field of water management.

Lviv University of Business and Law - Ukraine

University of the State Fiscal Service of Ukraine Slovyansk Scientific Educational Institute

EURÓPSKY INŠTITÚT DALŠIEHO VZDELÁVANIA

EUROPEAN INSTITUTE OF FURTHER EDUCATION


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ICOCRIM
OF FIGHT AGAINST TERRORISM ORGANIZED CRIME AND CORRUPTION


PENZIÓN
TERMÁL

NGO "Green Initiatives Rivne"

General information

Non-governmental organization (hereinafter - the Organization) is a voluntary social formation, based on the decision of the founders of the Law of Ukraine "On public associations" and bases its activities on the principles of voluntariness, legitimacy, governance, transparency, equality of Members.

The purpose of the activity is the implementation of ideas and projects of economy ecologization and the implementation of European state vector. The main objectives of the Organization are:

- information support, development, distribution and promotion of the ideas and projects of public, private and other institutions and organizations aimed at introducing the environmental technologies and organic farming; ecologization production and sale of European integration vector of the country;
- assistance in providing and getting the legal, information and other help to institutions, organizations, farmers and private landowners, whose activities help to solve the existing problems in Ukraine of rational land use, growing the ecological and organic agricultural products and forming the ecological culture in society and consumption outlook;
- comprehensive assistance to educational, health, social organizations, agricultural associations and farmers who are engaged or wish to be engaged in ecological and organic farming and processing the products; reclamation of eroded lands; tourism; organization of gardening and berry growing; landscape design; organic aquaculture; collection and cultivation of wild plants; beekeeping; introduction of modern highly ecological cultivation facilities;
- consultancy, development of grant proposals and advisory services in various sectors of economy with ecologization of its development;
- development and implementation of programs and projects in the field of various types of biomass, alternative energy sources, implementation of cleaner technologies to achieving the social, environmental and economic effects;
- organization of permanent courses, seminars and other educational forms of creating the regional center of ecological and organic farming, growing and processing the raw materials and products, resource and energy efficiency;
- assistance in implementation of patents and copyright certificates in the field of energy saving, highly efficient, environmentally friendly land use technologies, processing, labeling and promoting the products; restoration of land and other natural resources; environmental technology in various sectors of the economy;
- initiating and supporting the scientific, environmental, social, spiritual and other modern studies of human interaction with the environment;
- promoting the development of projects of natural reserves and proposals on the development of environmental affairs;
- promoting the market research, labeling, manufacturing, distribution standardization, certification and use of ecological and organic products consumption to achieve the social impact;
- preparation and publication of materials, articles, books, dedicated to the development of ecological and organic farming, the production of environmentally friendly products, and other economic, environmental and social problems.

PENZIÓN
TERMÁL

Penzión TERMÁL sa nachádza v katastri obce **Podhájska**, ktorá sa dostáva do povedomia našich a zahraničných turistov vďaka geotermálnemu prameňu silne mineralizovanej vody v hĺbke 1900 m (voda má pri ústí teplotu 80° C a výdatnosť 50 litrov za sekundu), okolo ktorého sa na 12 ha rozprestiera areál termálneho kúpaliska. Voda z geotermálneho prameňa má blahodárne účinky na celý organizmus. Podrobné štúdie preukázali, že má hlbšie a trvalejšie regeneračné efekty ako voda z Mŕtveho mora. Účinky tejto termálnej vody využíva k regenerácii celá rada športovcov z rôznych športových odvetví, a preto Vás do mikroregiónu TERMÁL pozývame.

Penzión TERMÁL Podhájska

941 48, Podhájska Za humnami 508/28 časť Belek

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www.obecpodhajska.sk, www.tkpodhajska.sk
www.facebook.com/infocentrumpodhajska

OPENING HOURS :

Monday:	**closed**
Tuesday :	**9,00 – 20,00 hrs.**
Wednesday :	**9,00 – 20,00 hrs.**
Thursday :	**9,00 – 20,00 hrs.**
Friday :	**9,00 – 20,00 hrs.**
Saturday, Sunday:	**9,00 – 21,00 hrs.**

PRICES :

Adult.....3,00 € / 1 hrs
Disabled person.....2,50 € / 1 hrs
Kids under 15 .....1,50 € / 1 hrs
Kids under 3 .....f r e e
Adult.....12,00 € / 1 per day
Disabled person.....10,00 € / 1 per day
Kids under 15 .....6,00 € / 1 per day
Indoor locker ..... free

Swimming pool in Relaxing komplex

PRICES :

Adult..... 3,00 € / 1 hrs
Disabled person..... 2,50 € / 1 hrs
Kids under 15 ..... 1,50 € / 1 hrs
Kids under 3 ..... f r e e

Indoor locker ..... free

WELLNESS CENTRUM AQUAMARIN

OPENING HOURS

Monday: 13,00 – 21,00 hours.
Tuesday – Sunday: 9,00 – 21,00 hours.

P R I C E S

Indoor world	**Adult**	**Kids 3 – 15 yers**
3 hours	12.00 €	7.00 €
2 hours	9.00 €	5.00 €
Extra 30 min.	1.50 €	1.00 €
Monday all day entry	**17,00 €**	**9.00 €**
Tuesday – Friday all day entranses	**22,00 €**	**12.00 €**
Disabled person per day	17,00 €	9,00 €
with guide	17,00 €	17,00 €
Sauna world	**Adult**	**Kids 3 – 15 yers**
1 hour	9.00 €	----------
One-time entry to the sauna	6,00 €	----------
Extra 30 min.	4.00 €	----------

INFORMATION CENTER Tel.: +421 911 103 443
e-mail: info@obecpodhajska.sk,

T H E R M A L P A R K PODHAJSKA

DEAD SEA IN THE CENTRAL EUROPE

W I N T E R S E A S O N

P O D H Á J S K A

is small village situated in the south of Slovakia, close to city of Nitra, at an altitude of 170 meters above sea level. Podhajska is famous for its natural geothermal springs with their healing and relaxing effects fo the human body. The healing thermal water, the effects of which have already helped many people, can be found in such a composition only here and it has similar effects to the Dead Sea. Thermal Park is open for visitors all year round.

RELAXING COMPLEX

Offers:
** sitting pool with the hottest and the most mineralized water (38 – 40°C)
** kids´pool with mineralized water (32°C)
** indoor pool for swimmers (28°C, 1,50 m deep)
** cooling pool (18°C)
** hot tub with mineralized water
** gym, solarium
** massages and pedicure
** cosmetics and hairdressing salon
** restaurant Jantar (open in winter)

THE AQUAMARIN WELLNESS

Indoor world :
** the Wild River (36°C, 1 m deep)
** relaxing pool (33°C, 1,3 m deep)
** waterfall
** 2 whirpools (36°C, 1 m deep)
** kids´ pool (32°C, 0,25 m deep)
** kids´ playground
** Turkish bath (36°C, 1,1 m deep)
** pool bar
** massage
** rest areas, botanical garden, a café (open in winter)
** **Sauna complex includes:** Finnish and bio sauna, salt and herb inhalation, cooling pool and water attractions (ice bucket, 3 heated beds, sea bath)

Outdoor world :
**relaxing pool with mineralizied water (39°C, 1,2 m deep) **
kids´pool with mineralizied water (32°C)
** cooling pool (18 – 20°C, 1 m deep)
** cooling bio lake (28°C, 1,3 m deep)
** walking Kneipp bath with changing cold and hot water

DIFFERENT FACILITIES / DINNING

** outdoor gym and natural rest area
** multisport pitch
** kids´playground
** restaurants, fast foods
** shops
** bakery and café

W A T E R I N F O R M A T I O N

Thermal salt water is:
** a temperature of **80°C**,
** similar to the one of the Dead Sea
** unique of its kind Europe
** beneficial on the human body

Water helps people with:
** the respiratory system
** arthritis and rheumatism
** after bons surgery,
** eczemas
** thyroid gland problems
** vascular and joint problems and persisting back pains

Salty water does not allow further reproduction of brought bacteria, but it kills them.

Seating pool with thermal water at the Relaxing komplex
WINTER SEASON from 21.10. 2019

Obec Podhájska

sa nachádza na južných výbežkoch Pohronskej pahorkatiny v nadmorskej výške 170 metrov nad morom. Najvyššia nadmorská výška je 288 m n.m a najnižšia je 161 m n.m. Patrí do Novozámockého okresu a do Nitrianskeho kraja. Leží na železničnej trati medzi Levicami a Šuranmi. Susedí s obcami Trávnica, Radava, Pozba, Veľké Lovce.

Obľúbené termálne kúpalisko v Podhájskej, poskytuje návštevníkom možnosť oddychu a rekreácie tak v letnom ako i v zimnom období.

Je malým slovenským morom, ktoré Vám poskytuje svoje služby a možnosť rekreácie počas celého roka. **Termálna voda**, pri ústi vrtu s teplotou 83 °C, je slaná a pôsobí priam zázračne na ochorenia: reumatizmus, dna, bolesti chrbtice, kĺbové ochorenia, cievne ochorenia, ekzémové ochorenia, priedušk ové ochorenia a ochorenia dýchacích ciest. Obsahuje sírany, lítium, jodidy, bromidy, zlúčeniny vápnika. Blahodarne pôsobí aj na doliečenie zlomenín, zmierňuje bolesti a stimuluje štítnu žľazu.

Návštevníkov kúpaliska tvoria nielen Slováci, ale aj turisti z Čiech, Poľska, Maďarska, Rakúska a iných krajín.

V **letnej sezóne**, ktorá začína prevažne od mája a končí niekedy až v októbri, je v areáli kúpaliska pre návštevníkov k dispozícii **10 bazénov** s teplotou vody 18 °C až 40 °C, kde patria plavecké bazény, dva veľké bazény, jeden sedací bazén, jeden detský bazén a toboganový bazén. V sedacích bazénoch je teplota vody 33 °C, v zime minimálne 36 °C. Rekreačná zóna termálneho kúpaliska poskytuje oddych a relaxáciu návštevníkom na ploche 12 hektárov, kde sa okrem bazénov nachádza aj **športový areál** (volejbalové ihrisko, plážový volejbal a pod.), prírodné oddychové miesta s bujnou vegetáciou na slnenie, športoviská, výtvory sochárov, ktoré sa realizovali priamo v areáli kúpaliska za mimoriadneho záujmu rekreantov z domova i zo zahraničia. V areáli kúpaliska sú poskytované i ďalšie služby ako sú masáže, elektroliečba, požičiavanie slnečníkov a lehátok.

Novinkou posledných rokov je novovybudované **Wellness centrum Aquamarins** komplexnou ponukou služieb, kde môžete relaxovať pri rôznych procedúrach. Dostatok teplej termálnej vody si užijete v **Bazénovom svete** vo vnútorných a vonkajších bazénoch. Nechýba tu relaxačný bazén, vírivý bazén, detský, ale ani turecký bazén. **Vitálny svet** zahŕňa komplex sáun, v ktorom si môžete vyskúšať fínsku saunu, bylinkovú saunu, bio saunu či soľnú inhaláciu. Ďalej vo vitálnom svet nájdete tepidárium, morský kúpeľ, ľadopád, ochladzovací kúpeľ ale aj vodné peklo.

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EUROPEAN INSTITUTE OF FURTHER EDUCATION

European Institute of Further Education invites you to benefit from other collaboration opportunities:

- **Publication of a monograph written by an author (or by co-authors)** (ISBN Slovakia, Serbia).
- **Publication of a monograph in the European Science journal** (*ISSN, the status is special issue of the journal, which amounts to a journal indexed in Scopus).*
- **Organization of international scientific** (conferences, seminars), **informational and educational** (round tables, meetings), **cultural** (exhibitions, presentations) **events.**
- **Certified examination in EU languages** (B2 and above).
- **International scientific and pedagogical internship**
- **Professional development for teachers.**
- **Professional development under the program of MBA** *(Master of Business Administration)***, LL.M.** *(Master of Laws).*
- **Holiday and recreation schemes for the group of participants.**

Contact

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