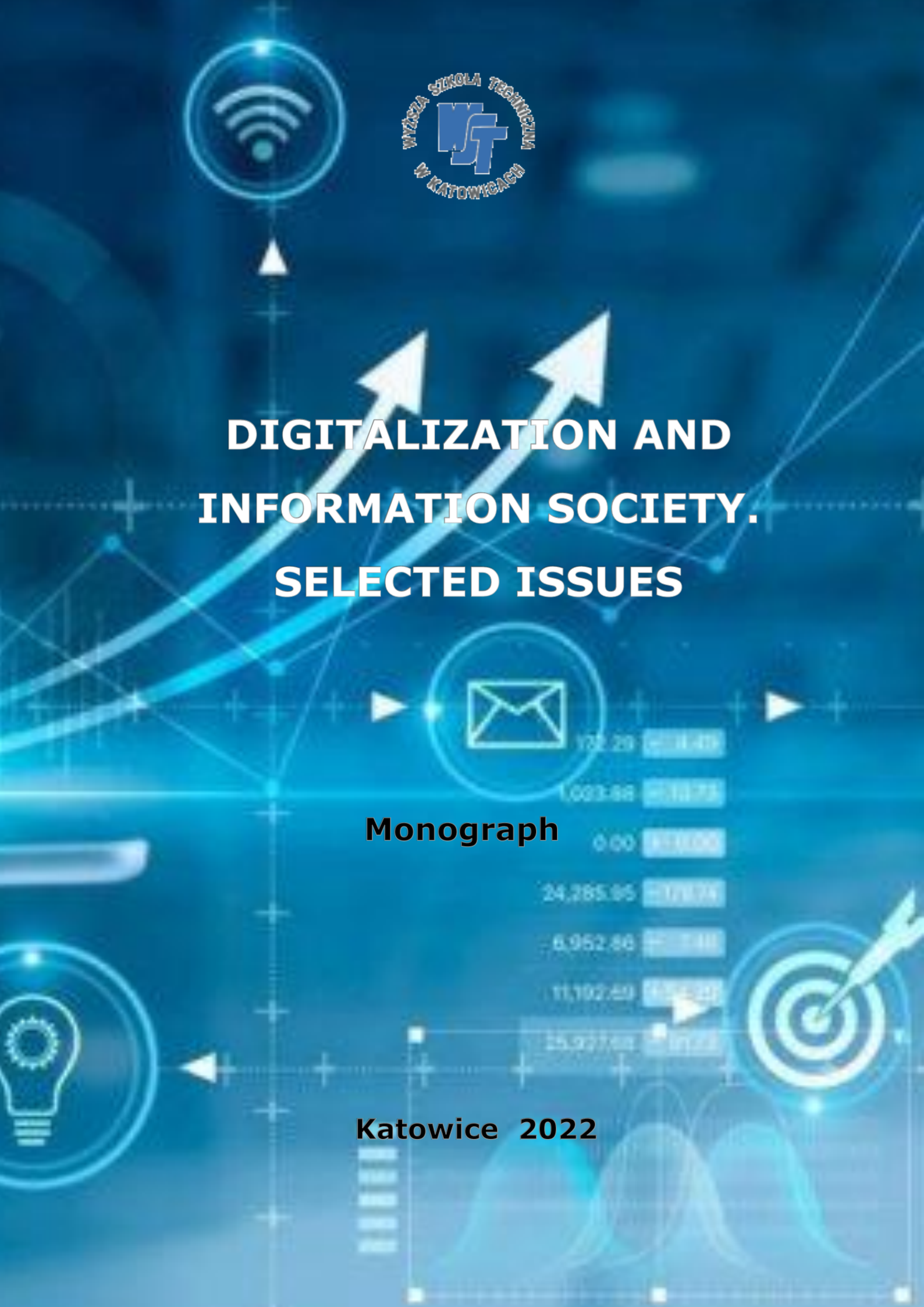

DIGITALIZATION AND INFORMATION SOCIETY. SELECTED ISSUES

Monograph

Katowice 2022

DIGITALIZATION AND INFORMATION SOCIETY. SELECTED ISSUES

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1.1. ТЕНДЕНЦІЇ РОЗВИТКУ ЦИФРОВИХ ТЕХНОЛОГІЙ ВІД ІНТЕРНЕТУ ЛЮДЕЙ ДО ІНТЕРНЕТУ РЕЧЕЙ

Відповідно до Концепції розвитку цифрової економіки та суспільства України на 2018-2020 роки цифрова економіка означає діяльність, в якій основними засобами виробництва є цифрові (електронні, віртуальні) дані як числові, так і текстові. Цифрова економіка базується на інформаційно-комунікаційних та цифрових технологіях.

Саме дані є ключовим ресурсом цифрової економіки, вони генеруються та забезпечують електронно-комунікаційну взаємодію завдяки функціонуванню електронно-цифрових пристроїв, засобів та систем[1].

Для промислових підприємств перехід на цифрову економіку отримав визначення в світі як Industry 4.0 – четверта індустріальна революція. Наразі цифрова економіка – це будь-яка економічна діяльність, пов’язана з інформаційними технологіями. Адже йдеться про споживання послуг або товарів через ІТ-сферу, онлайн-торгівлю, електронне врядування тощо з використанням цифрових інформаційних технологій.

Головним простором цифрової економіки є мережа Інтернет. Цифровий ринок надає необмежений вибір товарів, послуг та миттєво обробляє замовлення.

Результати такого роду рішень впроваджено в онлайн-магазини (Amazon, Aliexpress), е-підпис, інтернет-банкінг (Приват 24), месенджери (Facebook, Telegram), e-governance, тощо.

Глобальна інформаційна мережа Інтернет та сервіс всесвітньої павутини WWW є одними з головних інноваційних винаходів людства XX століття. Високошвидкісні Інтернет-ресурси надають доступ до електронних товарів та послуг, електронних платежів та розрахунків. Саме розвиток Інтернету, цифрових технологій, мобільних комунікацій, сервісів on-line виступають базовим інструментом формування цифрової економіки у діджиталізованому світі.

Цифрові процеси впливають на всі сектори економіки і соціальної діяльності, науку, освіту, виробництво, охорону здоров'я, фінанси, транспорт та ін. Розвиток та впровадження конценції Інтернету речей відкривають нові можливості для цифрового бізнесу в епоху цифровізації суспільства[2].

На сьогодні Інтернет уособлює в собі найкраще джерело різноманітної корисної інформації. Саме через цю глобальну комп’ютерну мережу можна отримати фахову консультацію та допомогу, знайти новітні тенденції та результати новітніх наукових досліджень, набути професійну освіту, переглянути рекламу та новини у реальному часі, отримати електронні адміністративні послуги практично в усіх сферах інформаційного суспільства тощо.

Веб-браузери зробили Інтернет досить простим для користування. Оскільки в даний час доступ до Інтернету стає більш популярним на смартфонах, то користувачі більше користуються цифровими послугами саме з мобільних телефонів. В Інтернет зараз важко не знайти доступу, з кожним днем число пристроїв з виходом в Інтернет зростає[3].

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[1] Про схвалення Концепції розвитку цифрової економіки та суспільства України на 2018-2020 роки та затвердження плану заходів щодо її реалізації. Розпорядження Кабінету Міністрів України від 17. 01. 2018 р. № 67-р.

[2] Що таке цифрова взаємозалежність в сучасному світі? Основні тези звіту ООН щодо Інтернету та технологій.

[3] Профспілка працівників освіти і науки України.

Згідно з дослідженнями, проведеними соціологічним центром Pew Research, до 2025 року більшість громадян почне сприймати Інтернет як базову потребу людини – тобто, такою ж частиною буття, як і звичайне користування комунальними послугами.

На сьогодні у мережі налічується понад 2 мільярдів сайтів. Користувачі Інтернету щодня відправляють 281 мільярд електронних листів. У 2021 році кількість користувачів Інтернету зросла з 4,1 до 4,9 мільярда порівняно з 2019, зокрема через пандемію COVID-19, переконані у Міжнародній спілці електрозв'язку ООН (МСЕ). Причому 51% трафіку генерують боти, а не реальні люди й сайти[4].

Країни-члени фундаментального права на свободу вираження поглядів та інформації, що гарантоване Статтею 10 Конвенції про захист прав людини та основних свобод, заявили про необхідність вільної циркуляції інформації в Інтернет та саморегулювання відносно он-лайнового змісту (контенту)[5].

Також Директива про електронну комерцію 2000/31/ЕС Європейського Парламенту і Ради Європи від 8 червня 2000 р. регулює правові аспекти послуг інформаційного суспільства, зокрема електронної комерції. Директива проголошує свободу надання послуг через Інтернет. Тобто, надання послуг через Інтернет не повинно обтяжуватись спеціальними дозвільними процедурами, застосування яких пов’язано виключно особливостями засобу передачі даних через Інтернет. Постачальникам послуг повинно дозволятись діяти в регуляторному середовищі, що гарантуватиме їм правовий доступ до національних та міжнародних телекомунікаційних мереж.

У багатьох випадках електронна комерція дозволяє скоротити шлях реалізації товару від виробника до споживача. Інтернет-технології надають можливість ефективної прямої взаємодії компаній з кінцевими споживачами без посередницьких послуг. Це дозволяє аналізувати інформацію про всі продажі та про всіх клієнтів, що сприяє проведенню бізнес-аналізу та маркетинговим дослідженням.

Електронне середовище широко використовується для доставки цифрового медіа-контенту. Електронна комерція через Інтернет-магазин являє собою веб-ресурс з каталогом продукції та можливістю замовлення і оплати товарів в режимі on-line. Все більше компаній впроваджують рішення електронної комерції у своєму бізнесі та приймають замовлення лише в електронній формі на своєму веб-сайті.

Затребуваними є три основні моделі електронного бізнесу[6]:

Наприклад, на сайті моделі B2B (електронна комерція між компаніями) можна розміщувати комерційні пропозиції компанії, отримувати відомості від своїх партнерів, постачальників, формувати рахунки для оплати товарів і послуг або навіть укладати контракти. Створення сайтів B2B для компаній дозволяє їм виявляти високу активність на внутрішньому та міжнародному ринках. Прикладами B2B є практичні моделі: IBM, Hewlett Packard, Cisco та Dell та ін.

Модель B2C (електронна комерція бізнес-до-користувача, або торгівля між компаніями й споживачами) включає збирання інформації клієнтами, придбання електронних товарів через комп’ютерну мережу. Прикладами B2C моделей є мережні компанії продажу в роздріб типу Amazon.com, Drugstore.com, Beyond.com тощо. Дана модель знижує вартість товарів та послуг за рахунок широкого доступу споживачів до інформації.

Модель C2C (електронна комерція споживач-до-споживача) включає торгівлю між приватними особами або користувачами. Прикладами моделі C2C є електронні ринки та аукціони на кшталт eBay, що дозволяють пропонувати ціну в системі реального часу; на порталах сайту за тематичною категорією типу Excite і eWanted покупці та продавці можуть здійснювати діалог.

Цифрова економіка має найбільший потенціал для того, щоб розвивати нові цифрові ринки. Активно розвивається мобільна торгівля – закупівля й продаж товарів і послуг через

[4] Інтернету вже 30 років. Дивовижні факти про Всесвітню мережу.
[5] Декларація про свободу комунікацій в Інтернеті. Страсбург, Країни-члени Ради Європи.
[6] Електронна комерція.

бездротову технологію, тобто, через смартфони, мобільні телефони, як через особистих цифрових помічників. Досліджено, що у 2017 році вже понад два мільярди людей здійснили мобільну електронну комерційну транзакцію. Експерти заявляють, що цифрова економіка відкриває нові можливості для держави, суспільства, громадян.

Цифрова економіка основана на нових методах генерування, обробки, зберігання, передачі даних, а також цифрових комп'ютерних технологіях. Головними технологіями цифрової економіки являються великі дані, штучний інтелект, технологія блокчейн, квантові технології, робототехніка, віртуальна реальність тощо

Перевагами цифрової економіки в порівнянні з традиційною економікою являється[7]:

- спрощення фінансових операцій, підвищення ролі електронних та цифрових грошей;
- розвиток можливостей дистанційної роботи;
- впровадження електронного документообігу;
- більш відкритий та доступний ІТ-ринок;
- підвищення рівня виробництва;
- зниження собівартості товарів та послуг тощо.

Багато країн покладають великі надії на цифровізацію економіки, впроваджуючи при цьому різні елементи автоматизації. Одним із найбільш ефективних інструментів у досягненні нового рівня цифровізації стає Інтернет речей. Саме Інтернет речей (Internet of Things, IoT) дослідники називають одним із ключових понять цифрової економіки.

Огляд сучасних технологічних проривів та інноваційних перспектив розвитку глобальної мережі Інтернет, а саме: від Інтернету людей до Інтернету речей здійснили українські вчені В. Рябошлик, О. І. Смолин, В. П. Олексюк. Вони дослідити Інтернет речей як технологічний феномен. Науковці детально описали поняття «хмари» у сфері Інтернету речей, принципи формування бази даних і вплив датчиків у загальній системі[8].

Для раціонального керування ресурсами, а саме: витрачанням газу, води, електроенергії також все активніше використовується Інтернет речей. Це – сукупність пристроїв, оснащених датчиками, сенсорами, засобами передавання сигналів, підключених до глобальної мережі Інтернет. Складовими Інтернету речей є Smart-речі (Smart-розумний, енергійний, кмітливий), так звані розумні речі. Ці гаджети мають невеликі розміри і малу масу, їх зручно носити із собою. Вони можуть мати камеру, термометр, барометр, компас, GPS-навігатор для збирання даних, подання сигналів, візуалізації параметрів роботи організму людини, сприяють прийняттю рішень і організації діяльності та спілкуванні тощо[9].

Ці цифрові пристрої, використовуючи різні датчики, можуть сприймати різноманітні сигнали з довкілля, вступати у взаємодію з іншими пристроями, обмінюватися даними з метою віддаленого стеження за станом об’єктів, аналізу зібраних даних і прийняття на їх основі рішень. Ця концепція дає змогу пристроям виконувати певні дії автоматизовано, без втручання людини.

Smart-технології забезпечують взаємодію об’єктів з оточуючим середовищем, наділяють цю систему здатністю адаптації до нових умов, саморозвитку та самонавчання, ефективного досягнення цілей.

Інтернет речей ґрунтується на таких базових принципах:

- наявність глобальної комп’ютерної мережі Інтернет, до якої під’єднуються різноманітні датчики;
- усі вони мають конкретну адресу в мережі та можливість отримувати дані й відправляти їх по мережі Інтернет;
- робота об’єктів в автоматизованому режимі відбувається в Інтернет без втручання людини за спеціальним програмним забезпеченням.

Для аналізу даних і прийняття рішення комп’ютерні пристрої використовують відповідне програмне забезпечення, яке за відомими алгоритмами опрацьовують отримані

[7] Ничипоренко К. В., Алєксандрова М. В. Цифровізація.
[8] Самойленко М. Ю. Принципи застосування технології Інтернет речей у сучасному світі техніки.
[9] Інтернет речей.

дані. Ці програми можуть встановлюватись на мобільних пристроях та використовувати хмарні технології.

Загальну схему функціонування мережі Інтернет речей наведено на Рис. 1[10].

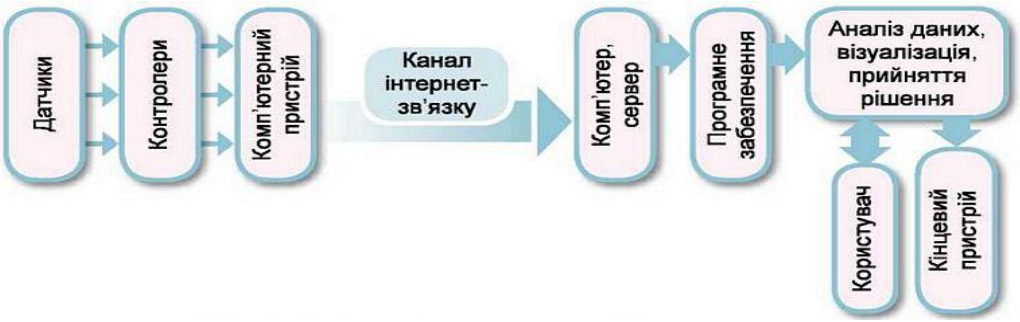

Рис. 1. Функціонування мережі Інтернет речей

Напрямок Інтернет речей став активно розвиватись, коли на початку 2000-х років кількість пристроїв, підключених до мережі Інтернет, значно перевищила кількість користувачів Інтернету. Тобто Інтернет речей за кількістю підключень до глобальної мережі перевищив Інтернет людей.

Період з 2008 по 2009 рік аналітики корпорації Cisco вважають справжнім народженням Інтернету речей, оскільки саме в цей період кількість пристроїв, підключених до глобальної мережі, перевищила чисельність населення Землі. За даними компанії Ericsson у 2018 році кількість таких пристроїв перевищила кількість мобільних телефонів у світі, а до 2022 року кількість пристроїв світу IoT сягнула 18 млрд. І прогнозується, що надалі їх кількість буде зростати[11].

У такому цифровому середовищі створюються нові умови життєдіяльності, для бізнесу, для розвитку економіки, для охорони здоров'я, для забезпечення екологічної безпеки, змінюються особисті та соціальні аспекти життя (Рис. 2)[12].

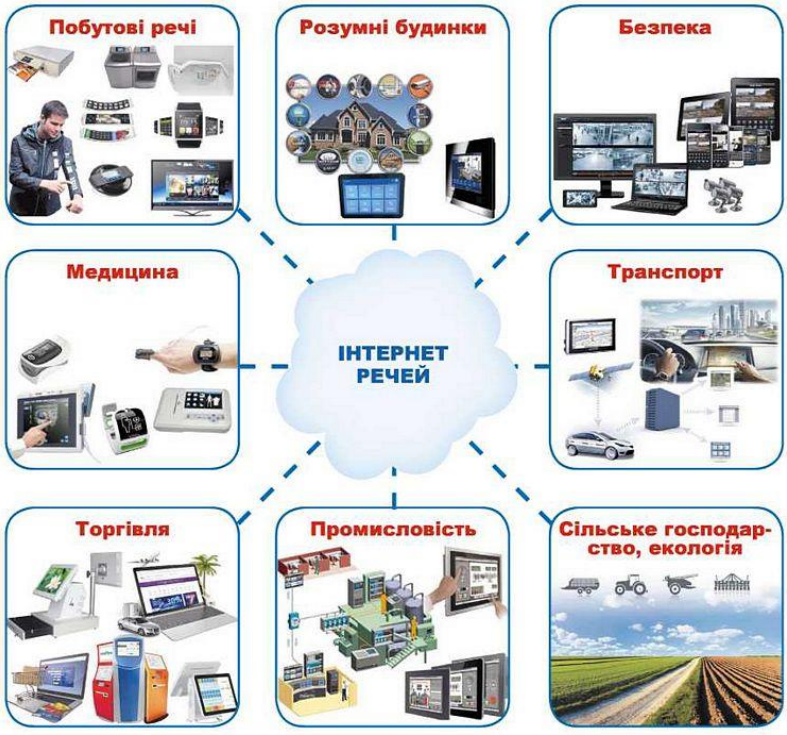

Рис. 2. Використання Інтернет речей

[10] Там само.
[11] Там само.
[12] Там само.

Інтернет речей, зокрема, вважають однією зі складових четвертої індустріальної революції, яка не лише має спростити нам побут, але й дозволить великим підприємствам автоматизувати багато процесів та дозволить ухвалювати ефективні рішення на основі аналізу величезних обсягів даних[13].

Інтернет речей – це система, що об'єднує реальні речі у віртуальну мережу. Завдяки цьому ефективність їхньої роботи підвищується, а втручання людини майже не потрібне.

Основний напрямок розвитку Інтернету речей сьогодні – досягти такого рівня роботи IT-системи, щоб користувачі лише вказували їй про свої потреби, а всі автоматизовані процеси вона взяла б на себе.

У майбутньому на нас чекають розумні будинки, які самостійно зможуть підбирати комфортну температуру в приміщеннях відповідно до наших вподобань, автоматично відчиняти замки на дверях, коли ми будемо наближатися до своєї домівки тощо. Проблему автомобільних заторів буде вирішено за допомогою громадського транспорту з автопілотом та система Smart City та ін.

При цьому, архітектура IoT-пристроїв являється універсальною. Пристрої, підключені до мережі Інтернет, оснащені сенсорами, датчиками та засобами передачі сигналів. Для роботи прилади мають розпізнавати один одного, отримувати інформацію з довкілля, мати мережу для зв'язку між собою та комп'ютер, який все це оброблятиме.

Пристрої Інтернет речей розпізнають один одного завдяки інфрачервоним міткам чи QR-кодам, які дозволяють кожному приладу мати власне «ім'я». Інформацію з довкілля отримують завдяки різним датчикам, сенсорам, а також Bluetooth та Wi-Fi. Обробляє все це невеличкий вбудований комп'ютер.

Для того, щоб ефективно взаємодіяти між собою, пристрої мають спілкуватися однією мовою програмування. Виробники намагаються прийти до загального міжнародного стандарту, який ще остаточно не впорядкований. Відсутність єдиної мережі зв'язку між девайсами сьогодні найбільше гальмує розвиток Інтернету речей.

Ідея втілення IoT в цифрове суспільство ефективно розвивається, оскільки він здатний істотно вплинути на процес діджиталізації цього суспільства. Основна особливість Інтернету речей – це можливість керувати багатьма процесами без участі людини[14].

Таким чином, Інтернет речей – це глобальна мережа підключених до Інтернету пристроїв, оснащених сенсорами, датчиками, засобами передавання сигналів. Ці цифрові пристрої можуть зчитувати за допомогою датчиків різноманітні сигнали з навколишнього світу, вступати у взаємодію з іншими пристроями, обмінюватися даними для віддаленого моніторингу за станом об'єктів, аналізу зібраних даних і прийняття на їх основі рішень. Завдяки впровадженню Інтернету речей активно розвивається не лише цифрова економіка, а й такі сфери діяльності як медицина, освіта, лінгвістика, екологія, агрономія, маркетинг, військова промисловість, сфера правових відносин, сфера безпеки, виробництво, страхування і кредитування, транспорт, туризм та ін.

Сьогодні відбувається радикальна трансформація у світовому виробництві, що не має аналогів у минулому. Цифрова економіка істотно змінює традиційні бізнес-процеси, які за кордоном назвали «digitization of economics», у промисловості – «digitization of industrial organization». Нова цифрова економіка практично впливає на всі види господарської діяльності. Ті компанії, які не зуміють переосмислити свій бізнес, можуть утратити всі конкурентні переваги, які вони мають на ринку[15].

Швидкість та доступність Інтернет-послуг постійно зростає. У сфері хмарних обчислень та IoT досягнуто значного розвитку. Ці технічні переваги разом з останніми досягненнями в галузі автоматизації та штучного інтелекту створюють світ, який є високо оцифрованим.

[13] А. Сабініч. Що таке Інтернет речей.
[14] Смолин О. І., Олексюк В. П. Інтернет речей як технологічний феномен XXI століття.
[15] Там само.

Діджиталізація сьогодні впливає на кожен аспект нашого повсякденного життя та дає нові можливості для фахівців, які проектують, розробляють та підтримують цифрові технології, які використовуються для реалізації IoT.

В галузі освіти цифрова трансформація реалізується через систему електронного навчання. Основою Інтернету та оцифрованого світу є комп'ютерні та інформаційні мережі. Тридцять мільярдів пристроїв Інтернету речей генерують трильйони гігабайт даних. Бездротові мережі, в залежності від масштабу, можуть бути персональними, локальними або глобальними мережами. Тому для ефективної роботи з пристроями IoT розуміння принципів мережевого зв'язку є вкрай важливими.

Особливе значення для Інтернету речей має рівень технічного, апаратного та програмного забезпечення. Під час роботи з «розумними пристроями», сенсори та активатори, Smart Home, Smart City, Industrial, Power Grid, можна редагувати існуючі або програмувати власні пристрої, використовують технології Python, Javascript, Blockly, SBC та MCU, Home Gateway та RegServer, налаштовувати правила роботи пристроїв.

В зв'язку з такими глобальними масштабами популярності IoT очікується, що набуватиме поширення новий напрямок – Всеохоплюючий Інтернет (англ. Internet of Everything, IoE), тобто Інтернет усього оточуючого середовища, Інтернет для всього довкілля.

Таким чином, з розвитком цифрових технологій, відбувається еволюція глобальної мережі Інтернет, а саме: від Інтернету людей до Інтернету речей і далі – до Інтернету всього оточуючого (Рис. 3).

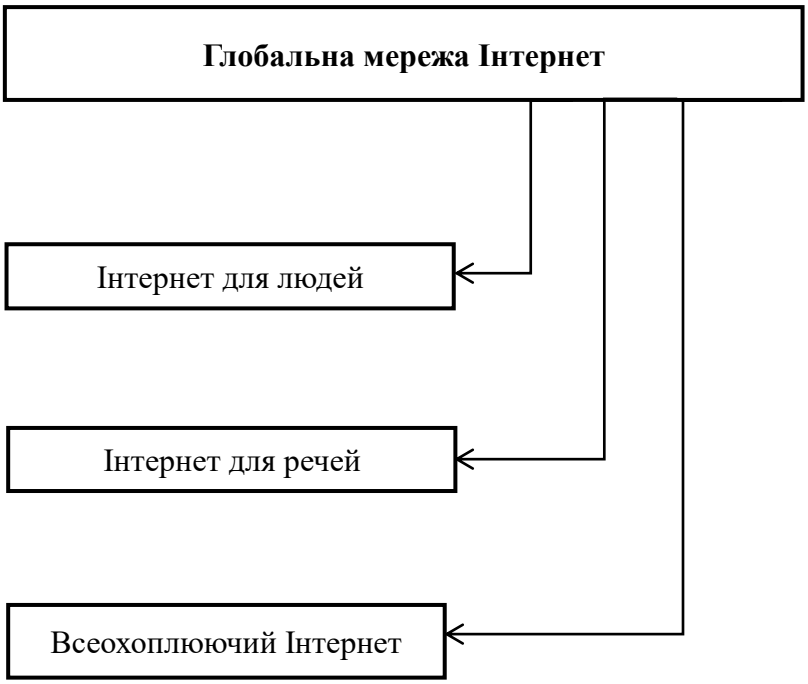

Рис. 3. Еволюція мережі Інтернет

По-перше, надшвидкісні магістралі Інтернет забезпечують "живе" спілкування та ведення аудіо- і відео-мовлення, надають багато корисних та необхідно життєвих послуг. По-друге, потенціал Інтернету почав реалізовувати сценарії бізнес-моделей "розумних" речей. Підключені до Інтернету "розумні" пристрої надають людям більше можливостей для раціонального керування ресурсами. По-третє, стрімкий розвиток Інтернету людей та Інтернету речей, в свою чергу, призведе до зміни цілих галузей та цілих індустрій. Таким чином, все навколишнє середовище буде оцифровуватись та ставати більш "розумним".

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ANNOTATION

Part 1. SOCIETY IN THE DIGITAL AGE: SOCIAL AND HUMANITARIAN ASPECTS

1.1. Valentyna Yuskovych-Zhukovska. TRENDS IN THE DIGITAL TECHNOLOGIES DEVELOPMENT FROM THE INTERNET OF PEOPLE TO THE INTERNET OF THINGS

The principles of using Internet resources in the development of the digital economy are revealed. The transformation of the global Internet in the context of digitalization in society is studied. The essence of the terms "Internet of People", "Internet of Things", "Smart Technology" is outlined. It is determined that the digitalization of economic activity in the information society is realized mostly with the use of services via the Internet. The directions of development of the Internet are analyzed, namely: with human participation and automated, ie without human participation. Citizens' activities in such a society are becoming more focused on the use of digital technologies.

1.2. Olha Haborets. CONCEPTUAL FUNDAMENTALS OF SELF-IMPROVEMENT DEVELOPMENT OF PERSONALITY

The article deals with the problem of the study of personality, the process of its self-development and self-improvement of the personality in its historical and philosophical aspect, describes the main historical stages, as well as analyzes the works of scientists of different epochs, devoted to the problem of formation of self-improvement and philosophical study of philosophical and philosophical studies. The problems of development and formation of a certain phenomenon in the philosophical heritage are considered.

1.3. Mariia Zaslavska. FACTORS OF ENDOGENOUS GROWTH OF THE VALUE OF COMPETENCIES OF HIGHER EDUCATION INSTITUTIONS

The aim of the study is to determine the factors of endogenous growth in the value of competencies of higher education institutions (HEIs). The roles of higher education are generalized in the work and modern roles are defined. These are ensuring the transfer of knowledge and technology from science to industry and business, creating knowledge based on research work in companies, research laboratories and universities, the availability of knowledge about the University for the Business Environment. New opportunities for HEIs have been created. They are building a critical mass based on strategic partnerships and a quadruple spiral model, focusing universities on societal challenges and innovation, building entrepreneurship, creating regional innovation ecosystems and creating new cultures and orchestrations.

1.4. Oleksandr Kibakov. ACCELERATED ASSESMENT OF FATIGUE STRENGTH CHARACTERISTICS

For establish the characteristics of the fatigue resistance of objects (parts or samples), both traditional and accelerated methods for determining these parameters are used. Traditional methods are expensive and time consuming, since their implementation requires a long time and a large number of test objects. Accelerated methods – allow you to reduce both the time and the number of tested parts. With regard to objects subjected to cyclic loading in operation, the traditional method becomes unsuitable if it is necessary to make operational design and technological decisions when modernizing equipment. It follows that the replacement of long traditional methods with accelerated ones that would not be inferior to them in terms of resolution becomes

an important task. In practice, the suitability and effectiveness of many accelerated methods have been proven. At the same time, the relevance of the further development of known and the search for new, more universal methods is felt. In this regard, of particular interest are methods based on testing one object under a regular loading regime. In this paper, a method has been developed for the accelerated construction of an individual high-cycle fatigue curve for testing one object. It includes fatigue testing of the part under study, macroanalysis of its fracture, calculation of fatigue curve parameters and endurance limit for each tested object. The possibility of constructing an inclined section of the fatigue curve along the initial ordinate is shown. Based on the study of the fracture of the part, taking into account the closure of the crack edges, the nominal maximum stress acting at the moment of failure was calculated. The possibility of estimating the initial ordinate of the fatigue curve from the calculated value of this stress has been studied. It is proposed to determine the endurance limit by the found parameters of the fatigue curve and abscissa of the break point of the fatigue curve. The acceptability of using this approach for the operational assessment of the fatigue resistance characteristics is shown of destroyed objects.

1.5. Iryna Ostopolets, Svitlana Sytnik, Snizhana Stepanova, Magdalena Wierzbik-Strońska. DIGITAL TECHNOLOGIES IN THE STUDY OF PSYCHOLOGY

The article reveals the role and importance of the introduction of digital technologies in the process of education in higher education. The possibilities and advantages of interactive exercises developed with the help of the web service LearningApps.org are considered. And Mindmapping. Features of use of the corresponding resources, sequence of stages of creation of educational exercises are described. Examples of developed interactive exercises in psychology by teachers and students as a creative independent task are given.

1.6. Yuliia Sidenko. PERINATAL SYMBOLISM AND ITS DETERMINATION BY OEDIPAL DEPENDENCE OF THE SUBJECT

The article aims to solve a significant theoretical and methodological issue of seeking ways of depth cognition of psychological meaning within perinatal symbolism, which is objectified through the means of representation by prospective psychologists during group psycho-correctional sessions of Active Socio-Psychological Cognition (ASPC). The research has been conducted in accordance with the psychodynamic paradigm that synthesises psychoanalytic, phenomenological, humanistic and other approaches to cognition of the psyche.

1.7. Volodymyr Siaskyi, Inna Siaska. TO THE PROBLEM OF COMPUTER SIMULATION MODELING OF PHYSIOLOGICAL PROCESSES AND SYSTEMS

The general scheme of construction of computer simulation models of physiological processes and systems of the human body is offered. Based on the concept of representation of the organism in the form of a set of hierarchically related structural elements and processes of reception, transmission and processing of information that takes place in them, the criteria for selecting the object of simulation are formulated. Structural and functional decomposition of models is carried out using a multilevel hierarchy of «black boxes» and information flows through which the interaction of structural elements. To transform the information flows at the lower level of decomposition, the model of the «atomic black box» (atom) is used, which is analogous to artificial neural networks. The final computer simulation was performed for kidney and lung models.

1.8. Natalia Shavrovska. AWARENESS AS A MECHANISM OF FORMATION OF LIFE PERSPECTIVES IN NEW CONDITIONS

The article reveals the phenomenon of mindfulness meditation as a tool of self-regulation, adaptation and one of the factors influencing the formation of life prospects in a constantly changing environment. The purpose of this type of cognitive-behavioral therapy is to solve people's

psychological difficulties by combining the concept of awareness with the ideas of cognitive-behavioral psychology. This practice teaches the client to be fully present in the situation "here and now", to notice the usual states of his consciousness, to control attention and behavior. It is a training of awareness and attention, especially to internal factors, as well asstabilization of mental state. In the works of some researchers, the technique of meditation appears as a practice of merging consciousness and the object of concentration. The object can be an idea, thought, mantra, and the subject of sensory perception–melody, crystal, image, candlelight. In this case, there is an attempt to stop the internal dialogue, which allows you to be "here and now", sharpen attention and awareness, balance the emotional state caused by negative thoughts, as well as relax from the growing flow of information from the outside world, while allowing to think more effectively due to better concentration.

Thanks to stable attention and achieving a higher level of awareness, it is possible to track and comprehend their automatic behavior, and further reduce automatisms. In this way a person receives more information about himself, a more complete feeling of himself is achieved – his body, his thoughts, hisemotions. The therapeutic effect of mindfulness is to reduce vulnerability to stress, the ability to get out of personal destruction and deal with debilitating events and situations.

Emotional stresses by their origin are usually social, and resistance to them in different people is individual. Stress responses to psychosocial difficulties are not so much a consequence of the latter as an integrative response to their cognitive assessment.

1.9. Volodymyr Shportko. DEVELOPMENT OF THE INFORMATION SOCIETY AND INFORMATION WAR IN THE CONDITIONS OF UKRAINE'S STRUGGLE AGAINST RUSSIAN AGGRESSION

The state and problems of information society development in the conditions of information (hybrid) war of the Russian Federation against Ukraine are considered. The connection of the information war waged by Russia – the aggressor state with the further development of military aggression against Ukraine to achieve political goals is shown. Emphasis is placed on the importance of understanding the content of information warfare in the confrontation between the parties by applying concentrated information to the population of the country, as well as the population of the enemy and other countries. The hybrid Russian-Ukrainian war is an expression of the inter-civilizational conflict affecting the socio-cultural space and creates additional risks for Ukraine and European countries.

1.10. Svitlana Shcherbinina, Olena Shevchenko. INFORMATION SUPPORT FOR ENSURING THE ENERGY EFFICIENCY OF THE HOUSING SECTOR OF UKRAINE

The paper considers information support for energy efficiency of the housing sector of Ukraine and its component - software for energy management system. The mechanism of realization of the energy management system in the housing sector of Ukraine is presented. It is determined that the successful application of the mechanism of energy management system implementation largely depends on the functionality, convenience and technical capabilities of the software used in this field. The indicators of software quality are described, as well as the characteristics of software products for the energy monitoring and management system presented in the modern information technology market. The rating of software by quality assessment is given. It is noted that software products for the energy management system are more widely used in the public sector compared to the residential sector. The model of the digital platform "Energy efficient housing: state, region, city, territorial community" is proposed, the main goal of which is to combine all resources, tools, knowledge, specialists in real time by integrating digital technologies to ensure energy efficiency in Ukraine.

1.11. Liubov Chagovets. CONCEPTUAL BASIS OF THE UKRAINE DIGITALIZATION STATE ASSESSMENT AND ANALYSIS

The aim of the article is to develop a conceptual basis for assessing and analyzing the digital development of the country, which, unlike others, is based on methods of intellectual analysis of multidimensional objects, which improves the quality of formation and decision-making. The essence of digitalization is considered in the thesis and the analysis of a modern condition of digital transformation of the country is executed; the advantages and disadvantages of modern methods and models of digital development assessment is carried out; system analysis and mathematical modeling methods to assess the digitalization state of Ukraine are analyzed. The results can be used in the practice of the state's digital development management and regional management.

1.12. Inna Chernykh. MOTIVATIVE MODEL THE SOCIAL DEVELOPMENY DONNACEA FACULTY OF CIVIL ENGINEERING

The article presents the main results of qualification work on the management social development the target group Donbas National Academy of Civil Engineering and Architecture of the Faculty of Civil Engineering. For a comprehensive assessment of the state of the faculty and future threats to development, the influential indicators are analyzed and identified, which are summarized in the matrix of SWOT-analysis. The characteristics of the motivational climate of DonNACEA are given, which forms the main determinants of improving the quality work and is the main factor in the satisfaction of participants the target group the Faculty of Civil Engineering with their professional and social life. The results the calculation of the social passport are given and the analysis of the state of social development the target group Faculty of Civil Engineering is given.

1.13. Nina Ursani. THE AESTHETICS OF PATRIOTISM IN THE LYRICS OF VASYL STUS

The article analyzes the aesthetics of patriotism in the lyrics of Vasyl Stus based on his collection "Winter Trees". Rarytsky, V. Melnyk-Andrushchuk, R. Krylovets, devoted to the work of the poet.

The study examines works in which the toponym "Ukraine" appears, gives an artistic reception of Ukrainian history, sounds philosophical motives related to philosophical reflections on the role of the hero in the fate of his country, declaring a clear national civic position. In the article, the nation-building issues of Vasyl Stus relate to the study of the expressive civic sound of aesthetic dominants and the universal nature of the embodied existential problems associated with the ambivalent essence of the universe, with the eternal problems of life in the Winter Trees collection. Thus, the aestheticization of patriotism in the lyrics of Vasyl Stus is considered through the prism of creating the image of a hero-patriot of his nation.

1.13. Yuliia Bilotserkivska, Anastasiya Goloborodko. PSYCHOLOGICAL ASPECTS OF THE LOGISTICS OF THE MEDICAL SERVICE OF UKRAINE IN THE CONDITIONS OF MILITARY CONDITION

The article examines the impact of psychological aspects of logistics on the functioning of the medical service in the military condition in Ukraine - a theoretical aspect of the issue, both logistics and its relationship with the medical service. The specifics of the medical service work and the main aspects of its functioning are disclosed in view of the time and duration of the medical services provided. The specifics of emergency medical care work and the way in which the information passes due to the logistics of dispatching emergency medical care in conditions of peace and war in Ukraine are investigated. As a result of the study psychological aspects of logistics were established. The paper presents practical recommendations on the use of psychological aspects of logistics as a method of influencing the quality of medical services rendered by the medical service of the country.

Part 2. EDUCATIONAL ASPECTS OF INFORMATION SOCIETY DEVELOPMENT

2.1. Tetiana Koksharova. EXPERIMENT IN CHEMISTRY EDUCATION: CLASSICS AND MODERNITY

Experiment is a key component in the process of teaching chemistry. Demonstrations belong to the groups of verbal-visual teaching methods the features of which are the combination of the lecturer's word with the experiment. A big role belongs to the technique of demonstrations. Experiment in the context of distance education has its peculiarities. One type of independent work that is performed without the supervision of the lecturer is home experiment. Video experiments and photo presentations can be successfully applied in distance educations. Remote experiment is characterized by a large number of specific and useful features but it has certain disadvantages compared to the real experiment. Video experiments and photo presentations also have some advantages.

2.2. Svitlana Liulchak. THE DESIGN AND USE OF DIGITAL EDUCATIONAL ENVIRONMENT OF VOCATIONAL EDUCATION INSTITUTION

The purpose of successful introduction of the single information-education space of a educational institution is the creation of an automated system of this institution, which unites all the substructures and levels of its activity. The establishment and operation of an information-education space of an educational institution is responsible for the success of introduction of the information and communication technologies into the educational activity at all its levels. The tasks aimed at preparing students to living in the conditions of an information society, at forming the ability to successful socialization in the modern society are becoming of special importance. The article analyzes the ways of creating a single information-education space of a educational institution, determines the advantages and disadvantages of its functioning.

2.3. Kostiantyn Surkov, Kateryna Surkova, Maryna Lomakina. MODEL FOR CORRECTION OF AIR TRAFFIC CONTROLLERS' SIMULATOR TRAINING

The article considers the problems of correction of future air traffic controllers' simulator training, analyzes the research on control and correction of training, provides the concept of future air traffic controllers' correction. Scientific works on computer learning, learning process management, systems analysis have been considered. Substantiation and description of the model for correction of air traffic controllers' simulator training, developed on the basis of the methodology of system analysis, are given. The model reflects the complex process of educational activities management in the implementation of corrective measures in air traffic controllers' simulator training, which has components: input, process, output and feedback. The developed model is a complex dynamic model of the correction process control of air traffic controllers' simulator training.

2.4. Mykola Blyzniuk, Oleksii Debre, Nadiya Vakulenko. TECHNOLOGICAL EDUCATION IN THE MODERN INFORMATION SOCIETY

The article states that technological culture as a concept emerged in the late twentieth century to denote human interaction with technology, its life and activities in the technological environment. The phenomenon of technological culture is studied in philosophy, sociology, pedagogy and psychology. Technological culture combines objective and subjective components of culture, serves as a prototype of a universe (universal culture for modern society), the mastery of which is necessary for every person at the level of general and professional education. In order to be competitive and ready for the challenges in the field of technology education

in the information society, it is necessary to implement ideas that will be in demand in the near future, it is necessary to monitor trends and respond adequately. When introducing innovations to train a new generation of professionals, it should be remembered that in foreign and national sources (scientific and practical), in the practice of other educational systems, new ideas can be found and used effectively, which will take into account the experience of such innovations and to adapt them as much as possible during technological education.

2.5. Nelly Bondarenko, Serhii Kosianchuk. PROBLEMATIZATION AS ATTRACTOR OF PERFECTING LANGUAGE EDUCATION

The authors substantiate the relevance of problematization learning in today's globalized information society. The article considers the determinism of problematization learning; its essence is revealed and the structure is determined. The authors analyzed the psychological patterns of problem solving and didactic features of mastering the school course of the Ukrainian language (based on problematization learning). The role and place of the problem situation, problem questions and tasks, appropriate methods in the process of realization of problematization mastering of educational material are clarified; examples are given. In the article the authors characterize the methods, identify the strengths and weaknesses of problematization learning, and predict the further development of such learning.

2.6. Olena Harmash, Vita Hryhorieva. DIGITAL TOOLS OF TEACHING FOR FOREIGN LANGUAGES AT UNIVERSITY

The article deals with one of the important problem using digital instruments by teaching foreign languages for future teachers in modern Universities. It is emphasized that the field of education has an important and difficult task adapting methods, forms, of teaching and learning to the needs of modern digital society, which will allow quickly and efficiently to work and to learn in the information field, exchange views, content. It is considered the concept of “digital technology”. It is noted effective teaching and learning process by using special principles. It is revealed some digital resources that are effective by foreign languages teaching (for ex. Zoom, Google Classroom, Ted Talks, Thinglink, Kahoot! and others).

2.7. Nataliia Kalashnik, Tamila Kravchenko, Iryna Shastko, Maria Kuzmina. FORMATION OF READINESS FOR FOREIGN LANGUAGE PROFESSIONAL-ORIENTED COMMUNICATIVE COMPETENCE OF FUTURE SPECIALISTS WITH HIGHER EDUCATION

The UNESCO Program Document «Reform and Development of Higher Education" states: "The quality of higher education is a concept that is characterized by many aspects and largely depends on the contextual framework of the system, institutional objectives or conditions and norms in this discipline».

The article outlines the actual problem of readiness of future specialist with higher education for foreign language professional-oriented communicative competence. It was determined that general professional training of future physicians is a component of professional training, and its fundamentalization is carried out in three main areas: information, activity and personal and combines all structural and functional components of the pedagogical system: goals, content, process, methods, techniques, forms, personal quality, result. The correlation of global, degree and local goals of professional and general professional training of future physicians and the requirements of today is based on the competence approach «initial (initial) $\rightarrow$ learning ability $\rightarrow$ ability readiness $\rightarrow$ practicality».

2.8. Larysa Maladyka, Vitalii Nuianzin. THE APPLICATION OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE TRAINING OF FUTURE PROFESSIONALS OF STATE EMERGENCY SERVICE (SES) OF UKRAINE

The present day burning problems of the higher educational system reforming are lightened out in this article.

The necessity and actuality of the modern informational technologies usage in the curriculum of the higher educational establishments of the State Emergency Service (SES) of Ukraine.

2.9. Larysa Prysiazhniuk, Olha Hroshovenko. THE USE OF DIGITAL TOOLS IN THE TRAINING OF FUTURE EDUCATORS OF PRESCHOOL EDUCATION

The study highlights the problem of the system of training future educators of preschool education by digitalization. The authors reveal the role of digital tools in the implementation of educational content aimed at acquiring key and professional competencies by students. The possibilities of various online resources for the effective organization of educational interaction during classes are analyzed. It is concluded that the choice of digital tools should be made taking into account the educational strategy chosen by the teacher and the content of education. An indicative map of the use of modern digital tools in the structure of educational activities in higher education has been developed and presented.

The results of the research allow us to assert the relevance of building a model of attracting investment and innovation based on public-private partnership, which will combine public and market vectors. It is based on the concept of state-partner attractiveness and state-partner potential of territorial formation.

Lviv region has a significant potential to increase investment attractiveness due to its advantageous geographical location, significant human, industrial and scientific-educational resources. Among the priority tasks facing the region today is to attract additional investments, which will contribute to the creation of new jobs and economic growth.

2.10. Iryna Samokhvalova. FEATURES OF THE TRAINING PROCESS OF VOLLEYBALL PLAYERS AGED 10-12 AT THE STAGE OF INITIAL TRAINING

The article is devoted to the problem of increasing the level of physical and technical training of volleyball players at the stage of initial training. The study involved 36 athletes of the initial training group aged 10-12 years in Sumy. As a result of the pedagogical experiment, significant improvements in the performance of test exercises of special physical and technical training in athletes of the experimental group were established. We have proposed a method of optimizing the training process of volleyball players at the preparatory stage of training, which is built with increasing hours for general and special physical training and the use of information technologies training.

2.11. Nadiia Senovska, Iryna Nestaiko. WEBINAR AS A FORM OF QUALIFICATION OF TEACHERS: ON THE MATERIAL OF PRACTICAL EXPERIENCE

The article analyzes webinars as part of the modern educational process in Ukraine. The practical author's experience of holding the webinar "Secrets of professional self-regulation of a teacher", which was organized within the framework of teacher training, is described. Researchers have studied the experience of theoretical substantiation and development of webinars as a form and technology of teaching described in scientific works of Ukraine. The analysis of the author's webinar was carried out according to the following attributes: topic, purpose, tasks, tools, software, advertising, structure and duration of the lesson, content, features of interaction and communication with students, efficiency.

2.12. Yana Suchikova, Sergii Kovachov, Ihor Bohdanov, Tetyana Nestorenko. IMPROVING THE READINESS OF FUTURE NANOENGINEERS TO CARRY OUT PRODUCTIVE ACTIVITY: TECHNOLOGIES AND TOOLS FOR ASYNCHRONOUS LEARNING

The events of recent years, namely the two-year COVID epidemic and the beginning of Russia's invasion of Ukraine and the outbreak of a full-scale war, have caused serious problems in higher education, i.e., the inability to conduct offline classes. This problem is especially acute for technical and natural majors, as the training of relevant specialists requires practical work in laboratories. Today, due to hostilities and temporary occupation of some regions of Ukraine, a large number of students and teachers do not have the opportunity to attend/conduct training in the usual remote mode with online communication. Therefore, asynchronous learning has been introduced in some regions. At the same time, Ukrainian universities have not had the relevant experience yet. So, there is an urgent need to develop appropriate tools and mechanisms. In the offered research, we have analyzed the possibility of using open databases of nanotechnology products and crystallographic structure of substances by future specialists in the field of nanomaterials. The use of these databases enables mastering the required materials and acquiring key nanotechnological competencies. For practical activities, it is proposed to use a program for visualization of substances' structure, which will help future nanoengineers to acquire skills for productive innovation.

2.13. Alexander Sklyarenko. EDUCATION AS AN INNOVATIVE FACTOR OF THE DEVELOPMENT OF MODERN SOCIETY

The paper analyzes the state and development of national education during the period of Ukraine's independence, identifies current problems in the field of education, identifies the reasons for their emergence, offers scientifically sound ways to modernize national education in the context of globalization, European integration and national self-identification – information society.

2.14. Alina Stopkina, Andrii Stopkin. FORMATION OF INFORMATION COMPETENCE OF FUTURE SPECIALISTS IN THE SOCIAL SPHERE BY CLOUDY TECHNOLOGY

The article is devoted to the use of cloud services in the formation of information competence. The study substantiates the importance of cloud services and analyzes the use of cloud technologies in the information and educational environment of higher education. The authors clarified the didactic possibilities of cloud services and identified the pedagogical conditions for learning to use them. Methodological aspects of designing the learning process based on the use of cloud services, aimed at improving the level of information competence.

2.15. Tatiana Turka, Zoya Pashchenko, Andrey Zaika. APPLICATION OF DIGITAL PLATFORM KAHOOT! IN THE WORK OF A TEACHER OF MATHEMATICS

Today, the digital competence of a mathematics teacher is a very important skill in considering the scale of digitalization processes in the world, the formation of a digital society. Enriching the teacher's knowledge in the direction of SMART-technologies fully meets the requirements of modern school. The article is devoted to the use of software tools in school, which significantly expand the capabilities of teachers and students, forming important for our time technological competencies. The advantages and disadvantages of Kahoot! are considered in the work of a mathematics teacher. The functions of this platform are given, the algorithm for creating an interactive test Kahoot!

Part 3. CURRENT PROBLEMS OF DIGITAL ECONOMY DEVELOPMENT

3.1. Oleksandr Hladkyi, Valentyna Zhuchenko, Agbaje Temitope Adetomilola. DIGITAL FEATURES OF SUSTAINABLE DEVELOPMENT IN TOURISM

The article considers the features of sustainable tourism development in modern conditions. The main economic and social determinants of the development of the tourism industry in conditions of uncertainty are identified. Attention is paid to the study of the main preconditions and consequences of global economic transformations in the field of international tourism. The source base and periodization of stages of development of the concept of sustainable development of tourism within the modern paradigm of sustainable development are determined. Examples of successful implementation of the concept of sustainable tourism development in modern conditions on the example of the tourism industry of the European Union. The study is supplemented by an overview of the main problems of management in the implementation of the concept of sustainable development of the tourism industry.

3.2. Anna Kozachenko. NON-CASH PAYMENT SYSTEMS IN THE CONDITIONS OF DIGITALIZATION

The article analyzes the processes of digitalization of non-cash payments. The essence of the concept, the need for non-cash payments, the basic principles of their organization are determined. Emphasis is placed on the significant variety of non-cash payments by their types and features of implementation. The peculiarities of settlements with the use of a payment order and a settlement check are highlighted. The advantages and disadvantages of using non-cash payments and payment cards, in particular. Based on this, promising areas for improvement and development of the payment card market are proposed, which will directly ensure the financial stability of the enterprise. Requirements for issuing and conducting transactions with electronic money are considered. The indicators of the market of non-cash payments with the use of payment cards, electronic money and the impact of digitalization on their structure are analyzed.

3.3. Volodymyr Kulivnuk, Oleksandr Hladkyi, Tetiana Tkachenko, Anastasiia Mishcuk. USING OF SWOT-ANALYSIS IN RECREATION, PHYSICAL AND REHABILITATION MEDICINE

SWOT analysis has been used for strategic planning since the 1960s by identifying the following factors: strengths, weaknesses, opportunities and threats. In the field of Recreation, Physical and Rehabilitation medical services, the strengths include those items: professionalism of medical staff; modern medical (rehabilitation) equipment; convenient location, comfort and safety in providing of medical (rehabilitation) services; positive patient feedback; understanding of health consumer needs; established market positions; expanding the range of services. There are weaknesses of Recreation, Physical and Rehabilitation medical services: unstable financial policy and monopoly position of the Ministry of Health. We can highlight these opportunities: sale of services that return a profit out of health insurance system; health customer loyalty. Finally, there are some threats of Recreation, Physical and Rehabilitation medical services: competition in rehabilitation field; high interest rate on credit; increased sensitivity to the economic situation in service sector; reduction of health customer incomes.

3.4. Olena Martseniuk. TRENDS IN DIGITALIZATION IN THE INSURANCE MARKET OF UKRAINE

Theoretical and practical principles of using digital technologies to revive the development of insurance business and optimize insurance risk management in today's challenges are summarized. It is noted that the digital transformation changes the depth of the basis of interaction between insurers and policyholders. Positive trends in the digitalization of business processes in insurance have been identified and its relevance during the COVID-19 pandemic has been determined. Maintaining the stability of insurance companies, especially in times of crisis and economic instability, requires the development of new sales channels for insurance products.

The article is devoted to the study of the use of digital and Internet technologies in the insurance industry, which provide new opportunities in insurance for both policyholders and insurers.

Given the economic importance of digital technologies in the insurance business in today's challenges, it is justified that the continuation of the digital transformation of the insurance industry is the main direction of development of the insurance market of Ukraine in the near future.

3.5. Leonid Melnyk, Yuriy Derev'yanko, Oleksandr Kubatko, Bohdan Kovalov, Iryna Dehtyarova, Oleksandr Matsenko. DYNAMICS OF ECONOMIC PROCESSES IN TRANSITION TO THE DIGITAL ECONOMY

The paper analyzes the dynamics of economic processes in the transition to the digital economy. It defines the key parameters of economic dynamics during modern industrial revolutions. The research describes factors changing the dynamics of economic systems in transition to a digital economy. It proves that the time factor is a highly malicious category closely related to economic factors. The paper explains how the economic system undergoes quantitative and/or qualitative changes in the transition to the digital economy. It shows how economic systems respond to changes in economic conditions (including changes, if necessary, production volume, product profile, switch to new products, diversifying the order portfolio, etc.) in transition to the digital economy.

3.6. Mariia Nazarkevych, Hanna Nazarkevych, Volodymyr Hrytsyk, Ivan Tsmots. DEVELOPMENT OF MULTIMEDIA PRINTING DOCUMENTS PROTECTED ON THE BASIS OF THE MOIR EFFECT

A new method of protection based on hidden elements is considered, for the construction of which the moire effect is used. This method will be able to provide a high level of protection of information in printed or electronic form, leaving no opportunity for falsification even on the best modern copying devices. The possibility of using the proposed method to protect information is analyzed. Latent elements contain micrographic images; vector curves that are difficult to reproduce, atypical rasters. We build latent elements by means of fine raster, vector and fractal graphics, based on the software developed by the authors. These latent elements are printed by offset printing, which we consider to be the original document. Copies were made from each original on a typical photocopier, which will be considered copies or forgery. With the help of densitometric measurements, it is highly probable that the impression belongs to the original or the forgery.

3.7. Olena Polova. DEVELOPMENT OF THE DIGITAL INDUSTRY IN THE FIELD OF HOTEL AND RESTAURANT AND TOURISM BUSINESS

The article discusses the basics of the digital economy, its characteristic features and scope. An analysis was made of the state of development of the digital economy in the world, reflecting the growth of its share in the gross domestic product, for which a characteristic feature is the state initiative to promote and develop digital processes, rather than business structures. An analysis of the level of digital technologies involved in the development of the tourism industry indicates

the paramount importance of information as a key factor in the digital economy. The paper characterizes the information space of the tourism sector, describes digital services and platforms that have become widespread and replaced the offices of travel companies. The proposed model of a digital platform for tourism and hospitality "Tourism 4.0", with a description of its characteristic principles, can be achieved because of a combination of key technological capabilities, namely artificial intelligence, the Internet of things, robotics, voice technologies, and blockchain.

The hospitality industry, for which digitalization processes have become especially relevant, has been able to expand its target audience, improve service quality, and thus develop rapidly, using more and more high-quality digital platforms – there are dozens of technology startups in the world travel and travel companies by bringing original ideas to the industry. Of course, digitalization in the field of tourism is a process uneven for different countries, so the analysis of key modifications and trends will give an idea of the challenges facing tourism not only in a particular country but also in a particular region.

3.8. Oksana Ruda. MANAGEMENT OF BANKS IN TERMS OF DIGITALIZATION OF BANKING

The article reveals the essence of digital technologies for the development of banking services. The development of the digital economy is an important stage in the development of the digital market in Ukraine and its further integration into the single global digital market. The main characteristics of the digital economy, factors, state, as well as the main problematic issues of the current stage of development of banks are analyzed. An analysis of the impact of digitalization on the activities of modern banks and the specifics of the development of digitalization in Ukraine. It is proved that under the influence of digital technologies in the banking sector the processes of disintermediation are developing.

3.9. Anatolii Anchev. THE IMPACT OF DIGITAL MARKETING AND FINANCIAL TECHNOLOGIES ON THE DEVELOPMENT OF THE INFOCOMMUNICATION SPHERE AS A COMPONENT OF INNOVATIVE INFRASTRUCTURE

The article substantiates the need to develop the field of infocommunications as one of the priorities in the development of innovation infrastructure, the effective operation of which guarantees the interaction of subjects and objects of innovation, as well as access to various information resources, which, in turn, increase efficiency use of the country's innovation potential.

3.10. Olga Bralorazumova, Oleksandr Nestorenko, Vira Dubrovina. METHODS AND MODELS FOR ESTIMATING EXPORT POTENTIAL BY EXAMPLE INDIVIDUAL PHARMACEUTICAL ENTERPRISES OF UKRAINE

The article provides a theoretical justification for the formation of the export potential of the pharmaceutical company and the definition of possible methods and models for its evaluation for individual pharmaceutical companies in Ukraine. It is determined that export activity is a component of production and financial activities of the enterprise and is characterized by complete independence in choosing a foreign counterparty, product range, in determining the contract value, volume, price and delivery time. Therefore, the study of factors influencing the efficiency of export operations is of key importance. It is noted that the key factors of success of a pharmaceutical company in the market include external financing and efficiency of operations of market participants, as well as market growth prospects and the impact of the external environment.

3.11. Liudmyla Hnatyshyn, Oksana Prokopyshyn, Nataliia Trushkina. TRANSFORMATION OF MARKETING ACTIVITY OF AGRICULTURAL ENTERPRISES IN THE DIGITAL ECONOMY: THEORETICAL ASPECTS

The article analyzes and summarizes the existing conceptual approaches to defining the essence of the concepts of “sales activity”, “marketing activity”, “agrarian marketing”, “transformation”. It has been established that the digital age will contribute to the transformation of the marketing management paradigm of agricultural enterprises, tools for the formation of marketing strategies, marketing policy, digital channels, customer experience, management approaches to supply chains and the creation of an appropriate logistics infrastructure and agricultural clusters. The author's interpretation of the economic category “transformation of the marketing activities of an agro-industrial enterprise in the digital economy” is presented, which refers to the process of changing the essence, the types, forms, properties and structure of marketing systems and networks, the principles of corporate culture, consumer values, the system of views, management functions, the nature of partnerships between business entity, customers and different categories of stakeholders.

3.12. Vasyl Gorbachuk, Maksym Lupey, Seit-Bekir Suleimanov. GLOBAL DECENTRALIZED MECHANISMS OF DATA MANAGEMENT

Infrastructure is a prerequisite for the collection, exchange, storage, processing and distribution of up-to-date data through their digital nature. The use of all the socio-economic value of modern data services involves a publicly available digital infrastructure, as well as adequate speed of the Internet at an affordable cost. Such an infrastructure begins with adequate international bandwidth to ensure smooth and permanent access to global Internet communities. The developing world does not have such an infrastructure, but it has a large stratification of the population in terms of broadband Internet connection. Thus, the data infrastructure is becoming a source of injustice, including the digital divide between rich and poor countries. Mitigating such adverse events requires well-designed infrastructure strategies.

3.13. Lidiya Guryanova, Roman Yatsenko. MODELLING THE SOCIO-ECONOMIC EFFICIENCY OF THE HEALTH CARE SYSTEM

The goal of the study is to develop a set of models for assessing the socio-economic efficiency of the resource provision of health systems, which, based on the methods of multidimensional data analysis, make it possible to form recommendations for choosing the most effective model of financial development. The problem of assessing the socio-economic efficiency of the health care system was analyzed; review of existing approaches, methods for assessing the socio-economic efficiency of the health care system was carried out; scheme of the relationship between models for assessing the socio-economic efficiency of the health care system was developed; modelling methods and software tools for implementing models were substantiated; model for a comprehensive assessment of the level of resource provision and socio-economic efficiency of the health care system was developed; model for classifying countries according to the level of socio-economic efficiency of the resource provision of health care systems was developed; model for identifying a class of countries was developed; recommendations to improve the level of socio-economic efficiency of the resource provision of health care systems were formulated.

3.14. Nadiya Dubrovina, Ruslan Chemchykalenko, Dmytro Nestorenko. IMPROVING THE EFFECTIVENESS OF THE SALES STRATEGY OF THE PHARMACEUTICAL COMPANY IN INTERNATIONAL MARKETS

The article considers the issues of theoretical adjustment of the peculiarities of the organization of sales activities in pharmaceutical enterprise and provides recommendations for improving its efficiency in the international market on the example of an individual enterprise.

An analysis of the sales activities of “Zdorovya Pharmaceutical Company LLC” is carried out. This company is one of the leading companies in the pharmaceutical industry of Ukraine, and for many years has held significant positions in its segment and supplies its products to various countries, including CIS and individual countries in the EU. Examples of using simple models for cost analysis and budgeting, constant monitoring of trends and potential for sales abroad, which will allow the company to improve its sales activities and increase profits from the export of pharmaceutical products.

3.15. Liudmyla Zveruk. MODERN DIRECTIONS OF DEVELOPMENT OF FINANCIAL MANAGEMENT OF ENTERPRISES

The digital economy involves the introduction of information technology and innovation not only in production but also in management processes, in particular in the financial management system. The peculiarity of financial management is that it is: a comprehensive system that includes the concept of management, mechanism and organization of management; complex, dynamic and open system with elements of financial logistics; includes the development of financial strategy, tactics and financial policy. The Financial Planning and Analysis Platform (FP&A) includes budgeting, forecasting and analytics processes; combines in-depth analysis of operational and financial data; consists of such types of management activities as: planning, budgeting, integrated financial planning, management report, forecasting and modeling. The impact of digitalization forms a new conceptual model of financial management based on the use of cloud computing, network technology, remote control, cybersecurity, integrated management system.

3.16. Tetiana Katkova. DIRECTIONS OF IMPROVEMENT OF THE SYSTEM OF DIGITAL MARKETING COMMUNICATIONS OF THE SUBJECT OF FOREIGN ECONOMIC ACTIVITY

The aim of the article is to analyze the state and trends of foreign economic activity of the enterprise analyzed in this study, as well as to substantiate recommendations for improving the system of its digital marketing communications in order to improve foreign operations and financial and economic activities in general.

The study reveals the urgency of the problem of improving the system of digital marketing communications of entities specializing in foreign economic activity. It is shown that digitization of the marketing communications system of enterprises is not only a modern trend, but also a way to further large-scale digital transformation of business processes and business in general.

It is proved that the introduction of digital marketing communications of enterprises developing foreign economic activity is due to the need to learn the features of modern network technologies in the implementation of marketing approaches to promote products (services) in foreign markets, search for useful information, potential customers and business partners, market expansion sales, ensuring the effectiveness of advertising campaigns to organize an effective feedback system with buyers and consumers.

The scientific novelty of the research results is to substantiate the directions and tools of development of digital marketing system of the enterprise, to determine the tools to improve Internet marketing communication policy, to develop tools to improve marketing communication policy in digital communication system.

The characteristic of the general foreign economic activity of the researched enterprise is given. It is shown that the development of the system of digital marketing communications of enterprises requires changes in the flows of information marketing channels in the following areas: sales promotion; consumer relations; financing; risk management; material and technical supply; calculations; property rights. The range of modern topical communication and information elements of the marketing communications system of the enterprise, namely media and advertising communications, hardware and software, mobile and e-marketing technologies is determined.

The applied significance of the research results is to determine the directions of further development and effective use of digital marketing tools of foreign economic activity, namely

the vectors of relations: (1) consumers, (2) subjects of economic activity and economic sector, (3) representatives of the government and public sectors, (4) subjects of industry infrastructure, innovation and technology activities and information and communication technologies.

3.17. Yurii Kravchyk. DIGITAL COMPETITIVENESS MANAGEMENT OF THE NATIONAL ECONOMY OF UKRAINE

The purpose of the article is to analyze the state, trends, factors of influence and components of security, as well as to identify tools and means of ensuring the digital competitiveness of the national economy of Ukraine.

The study reveals the relevance of the problem of forming and ensuring the digital competitiveness of the national economy. The essential characteristics of the concept of "digital competitiveness of the economy" are generalized. The author's vision of the structure and system of digital competitiveness of the national economy as a system of characteristics within the components is revealed: resource provision of the digital economy; the level of development and realization of the potential of the basic sector – ICT; development of digital infrastructure and digital communication system; sufficiency of technical and technological support for the functioning and development of the digital economy and society; availability of a system of horizontal and vertical integration connections and relations; the ability of the digitization system to develop. The analysis of the state, dynamics and structural and functional aspects of digital competitiveness of the national economy of Ukraine is carried out.

The leading methods of rating assessment of the competitiveness of the economy and its digital components are generalized. The characteristics of Ukraine's places in the world ranking of digital competitiveness in 2014, 2017-2021, as well as the places of Ukraine and other countries in the rankings of digital competitiveness and investment attractiveness in 2019, 2021.

A set of state policy measures aimed at strengthening the digital competitiveness of the national economy of Ukraine has been developed, namely: de-shadowing of business processes and increasing the transparency of digital activities; intensification of cooperation of IT entities with enterprises of other types of economic activity; improving the investment infrastructure of the digital economy sector; improvement, diversification and increase of efficiency of foreign economic cooperation of domestic subjects of ICT sphere with external partners; digital transformation of the domestic economy and participation in this process of representatives of the ICT sphere, development of the infrastructure of the digital economy; participation of ICT actors in improving business processes of enterprises.

3.18. Yuriy Lotyuk. MAN-MACHINE INTERACTION IN THE INDUSTRIAL INTERNET OF THINGS

Selection of dialogue control elements is executed to build a model of human-machine interaction in the industrial Internet of Things; the user’s interface is evaluated on the basis of users’ questioning and observation; an experiment to assess ergonomic hypotheses is conducted; dialog controls are worked up.

3.19. Halyna Madi. WAYS TO OVERCOME ECONOMIC MARGINALITY IN THE CONTEXT OF THE REALITIES OF MODERN UKRAINIAN SOCIETY

When considering ways to overcome economic marginality, it is important to focus on such aspects as the social policy of the state and personal readiness to overcome the current situation. In modern Ukrainian society, the main determinants of the marginalization process are economic decline, unemployment, migration, rising crime, the collapse of the social sphere, and the crisis of the value system. One of the most significant factors influencing the dynamics of economic marginality is the lack of a single scale of values in transition, which increases the destructivism of marginality.

3.20. Yuri Pozdnyakov, Igor Bratishko. REGULATORY BASIS FOR ECONOMIC MEASUREMENTS OF DAMAGES COMPENSATION VALUE PERFORMANCE IN UKRAINIAN AND INTERNATIONAL EVALUATION STANDARDS

The article behaves to the field of damages and its compensation independent expert appraising/valuation. A comparative analysis of the legal framework regulatory basis for damages independent valuation implementation in national (NVS), international (IVS) and some foreign standards is considered. It is shown that the requirements for such economic measurements performing in Ukraine in national NVSs are set out in a very limited amount, and this may cause some difficulties in methodological approaches and evaluation procedures selecting and justifying. Based on the comparative analysis of NVS, IVS and some foreign standards rules, it was concluded that the requirements for evaluation works in the research area are set out with a very different degrees of completeness and details circumstantial. However, some IVSs and foreign standards contain a more complete statement of the damages and its compensation value economic measurement features. This convincingly confirms the expediency of these recommendations applying in evaluation practice, as it is required by the principle statements of the national legal framework for evaluation.

Theoretical bases, on those damage economic measurements expert valuation methodology is based, are examined. Main conditions that must be met when these economic measurements performing are formulated. The main principles of the economic measurements implementation using the metrological methodical approach are considered. Base terms, limitations, original assumptions of that evaluation works performing conditions are set. Possible directions of evaluation methodologies improvement are analyzed. Some recommendations in relation to priority directions of further researches are offered.

3.21. Yurii Seliutin, Dmytro Obolonkov. THE DETERMINATION OF THE RESIDUAL LIFE OF BUILDING STEEL STRUCTURES BY THE RELIABILITY INDEX INDICATORS

In order to assess the operational safety of steel constructions, the paper analyzes the principles of calculating the safety of structural steel constructions with consideration for the reliability index β at all phases of constructions operation and the design fundamentals of the reliability index β for both new constructions (at the design stage) and structural steel constructions in the conditions of the long-term operation.

The task of safety and reliability calculations, first of all, consists in assigning normalized safety parameter values, i.e. normalizing the reliability index, the value of which should be strictly related to the consequence classes (CC), which are determining for setting the reliability coefficients for further calculations while designing the constructions.

The article considers the calculation values β of the reliability index for constructions operated beyond the time limit for operation, with accumulated defects and damages. To improve the mechanism for calculating the reliability index value for the constructions operated beyond the maximum operating limit, with accumulated defects and damages, several tasks were set to determine such values β of the reliability index below which the construction is no longer considered to be operational and to define the reliability index values β for possible performance of renovation works (reconstruction, refurbishment) to strengthen and extend the remaining structural lifetime.

Thus, emphasizing all of the aforementioned, the main conclusions to the article should be specified: at the stage of solving the issue of calculating the reliability index for structures being operated over the projected service life, with damages and initial defects accumulated during the operation period, it is required to perform their review and determine two main criteria for solving the issue of determining the reliability index, namely: to set such values of the reliability index below which the structure will be no longer operational, to define and set such values of the reliability index at which it is possible to carry out renovation works on steel structures, their reconstruction or repair.

Considering the possibility of changing the reliability index compared to a new structure, given that the residual service life may be shorter than the design one, taking into account the economic factors and factors of probability of losing a person's life, setting of such reliability index values is necessary for further possibility of the service life extension of a structure and determination of its residual life.

3.22. Volodymyr Chenash. ANALYSIS OF THE IMPACT OF DIGITALIZATION PROCESSES FOR THE FORMATION OF INNOVATIVE DEVELOPMENT PLATFORM SOCIO-ECONOMIC SYSTEMS

The essence of digitalization processes is analyzed and the necessity of their implementation at the regional level is substantiated. It is proposed to supplement the existing approaches to the definition of "digitalization" in the domestic scientific opinion with the innovation-stimulating direction and determine that its essence is to stimulate innovation processes in socio-economic systems by taking advantage of digital tools and implementing new IT solutions to collect and processing of information flows between participants of intraregional interactions. A study of the advantages and disadvantages of digitalization of society, as well as the features of innovative entrepreneurship in a digital economy. The components of the strategy for the implementation of digital technologies in socio-economic systems have been formed.

3.23. Nataliia Suduk. PRIORITIES AND MEANS OF EFFECTIVENESS OF REGIONAL ECONOMIC COMPLEXES OF UKRAINE ON THE PRINCIPLES OF DIGITALIZATION TAKING INTO ACCOUNT WORLDWIDE

The study focuses on the relevance of public administration issues of effective functioning of regional economic complexes on the basis of the introduction of smart technologies and digital transformation (digitalization).

The purpose of the study is to substantiate the priorities and means of improving the regional economic complexes of Ukraine on the basis of digitization, taking into account the most progressive world experience.

Insufficiently high efficiency of regional policy in Ukraine was stated and it was concluded that in order to properly increase the effectiveness of regional policy, intensify economic development and improve the quality of life, it is necessary to ensure active and comprehensive implementation of digital transformation of economy and society.

Strategic guidelines for programming the effectiveness of regional economic complexes of Ukraine on the basis of digitalization have been determined. This is the transition to technology and smart-oriented approaches to the organization of production systems, formation and development of socio-economic infrastructure; introduction of modern technologies of spatial development, settlement management; realization of ICT potential in the development of digitalization of the system of social infrastructure facilities; strengthening the effect of the factor of cultural traditions, security of consumption; replacement of raw materials sectors of the economy by the development of digital-oriented economic activities.

The applied significance of the research results is that specific regional policy measures have been identified, which are focused on smart digital development of territories and provide for the formation of digital infrastructure; development of digital economy branches; digital security; digitization of health and education systems; social responsibility of entrepreneurship and society in the digital environment; digitalization of the labor market and new forms of employment; use of ICT smart technologies to keep the space clean and safe.

The scientific novelty of the research results is the further development of the tools of state policy of digital transformation of regional socio-economic systems.

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