



## ECONOMICS AND MANAGEMENT OF ENTERPRISE

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### THE IMPACT OF CORPORATE CULTURE OF DIGNITY ON COGNITIVE BIASES, STRATEGIC DECISION-MAKING AND TECHNICAL DEBT MANAGEMENT IN IT ENGINEERING

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The object of research is the corporate culture of dignity as an interdisciplinary determinant of organizational behavior that operates at the intersection of IT engineering, cognitive science, behavioral economics and knowledge management. The analytical focus is on the impact of cultural variables on cognitive distortions in strategic decision-making, as well as on the dynamics of technical and social debt in IT companies.

The problem to be solved is the absence of a holistic cognitive-behavioral model that would describe the mechanisms of the transformative impact of a culture of dignity on organizational biases and structural inefficiencies in engineering systems. Existing approaches largely ignore the relationship between managerial ethics, team interaction architecture, and the cognitive ecology of decision-making.

The research methodology included a critical analysis of theoretical sources, the development of the author's analytical model, and a content analysis of cases of three global technology companies (Spotify, Google, Airbnb). A qualitative analysis of corporate practices and the content of open reports revealed a strong correlation between a high level of transparency, autonomy, psychological safety and feedback in organizations with a strong culture of dignity and a reduction in the frequency of cognitive distortions and the pace of technical debt elimination. The data are the result of analytical generalization rather than empirical quantitative research. Estimates show that such organizations demonstrate an acceleration in the pace of technical debt reduction by 15–20% compared to those without established feedback practices.

The practical significance of research lies in the possibility of using the results to develop organizational development policies, training programmes for IT team leaders, strategic management systems and technical debt audits.

The findings contribute to the expansion of theoretical understanding of the role of humanistic factors in high-tech management and have the potential to implement the UN Sustainable Development Goals, in particular in terms of decent work, inclusive governance and innovation sustainability.

**Keywords:** dignity, cognitive biases, technical debt, decision-making, IT engineering, behavioral economics.

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**INVESTMENT ATTRACTIVENESS FORMING  
OF MANAGERIAL PROJECTS**

pages 14–25

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In the modern realities of economic development, investment conditions for entrepreneurial and project activities are of particular importance. The object of this research is the processes of project management that are carried out in the conditions of formation of investment attractiveness. Investment conditions for the formation of management projects become a key factor in the development of project networks both at the national and international levels. One of the most problematic areas is the isolation of investment attractiveness at the macro level of the existence of an economic system for the effective development of management projects.

During the study, the following logic of constructing the study was used, which provided for the isolation of the interpretation of investment attractiveness as an economic and theoretical category, which can be defined as a set of external environmental factors, including economic, legal, political, social and cultural factors. These factors are formed at different levels of the economic system: nano-, micro-, meso-, macro-, mega-. The results obtained suggest that in the process of forming investment attractiveness, project networks acquire special importance. They should reflect the availability of project infrastructure and personnel that can initiate, develop and implement projects that relate to a certain industry or region of a particular country. In addition, the results obtained indicate that after determining the theoretical features of project investment attractiveness, approaches to using the category of "investment climate" in the context of project management were outlined. The conditions for forming the investment climate in Ukraine were also assessed and how investment attractiveness is formed in different countries of the world was indicated. In connection with all the above aspects of forming investment attractiveness, the work provided conditions for increasing the efficiency of implementing management projects.

As a result of the research, conclusions were drawn regarding the features of the influence of investment attractiveness factors on increasing the profitability of management projects and on the use of methods for their optimization.

**Keywords:** investment attractiveness, project activity, project management, project networks, project startups.

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# DEVELOPMENT OF METHODS FOR FORMING THE COST OF PRODUCTION AND ASSESSMENT OF ITS IMPACT ON THE EFFICIENCY OF AN INDUSTRIAL ENTERPRISE

pages 26–33

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The paper considers the influence of the level of production cost on the overall efficiency of the functioning of industrial enterprises in the conditions of the modern economy and its economic potential. The value of the cost of production as one of the key factors determining the efficiency of an industrial enterprise and the level of its economic potential is considered. The main components of the cost, methods of its accounting and optimization opportunities are analyzed. Practical recommendations for improving production efficiency through cost management are given. A comprehensive analysis of the structure and dynamics of production costs has been carried out, the main factors influencing the formation of the cost of production, in particular, resource intensity, energy consumption, organizational and technological level of production and managerial approaches have been identified. In this research, let's focus on the importance of cost rationalization and increasing the level of accounting and control over costs as key tools for ensuring the competitiveness of the enterprise. To control the cost, such methods as break-even analysis, accounting by centers of responsibility, regulatory accounting, calculation by types of products are proposed for use. The effective use of these methods allows to identify inefficient costs, conduct a comparative analysis of costs by periods, and make informed management decisions. Among the main ways to reduce the cost of production, was identified: introduction of energy-saving technologies, automation of production processes, improvement of logistics, inventory management, revision of supply contracts, as well as motivation of employees to increase labor productivity. On the example of a generalized profile of an industrial enterprise, the influence of various components of costs on the profitability of products is analyzed. It has been found that timely changes in the market situation and avoid unprofitable decisions.

**Keywords:** cost of production, methods of formation, efficiency, economic assessment, industrial enterprise, costs, resources.

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## ECONOMIC CYBERNETICS

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### QUANTIFYING ASSET PRICE VOLATILITY WITH FRACTIONAL BROWNIAN MOTION

pages 34–41

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The object of the study is the behavior of stock market volatility in response to sudden shocks and crisis-driven fluctuations, with a specific focus on capturing its complex temporal structure and memory effects. One of the biggest challenges in this domain lies in the inherent stochastic nature of volatility: it evolves irregularly over time, cannot be directly observed, and must be estimated from indirect indicators. Conventional models, particularly those grounded in classical Brownian motion, often fall short in accurately representing such dynamics, as they neglect the long-range dependence – or “market memory” – commonly observed in real financial time series. This oversight can lead to significant errors in volatility estimation, especially during phases of market turbulence such as financial crises or global events.

A fractional diffusion framework was used during the study to model asset price dynamics, incorporating a time-dependent and initially unknown volatility function. This approach relies on fractional Brownian motion, whose non-Markovian properties enable the model to effectively account for long-term correlations in market behavior. To estimate the volatility, it is possible to employ statistical tools based on p-variations, which allowed to compute the Hurst index and reconstruct the underlying path of realized volatility with high sensitivity to structural market changes.

It is possible to obtain that this method significantly improves the accuracy of volatility tracking, particularly under stress conditions, such as those observed during the 2020 COVID-19 crisis. It is connected to the fact that the suggested method has a number of features, in particular its ability to incorporate memory effects and to respond adaptively to high-frequency data variations. Thanks to that, let's manage to capture abrupt volatility spikes and sustained market uncertainty more precisely. Compared to the standard models, it is possible to achieve the following advantages: enhanced responsiveness to market dynamics, improved reliability of volatility forecasts during crisis periods, and a more realistic reflection of financial market complexity.

**Keywords:** stock market, fractional Brownian motion, parameter estimation, markets with memory, volatility.

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**DETERMINING THE CAPABILITIES OF ARTIFICIAL INTELLIGENCE ON THE DEVELOPMENT OF CRYPTOTRADING AND BLOCKCHAIN TECHNOLOGY**

pages 42–52

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The object of research is crypto trading and blockchain technologies, including the development of trading bots and the implementation of automated risk management systems. AI includes the development of trading bots, the implementation of automated risk management systems, and the use of predictive analytics tools that optimize trading operations. This is important, as AI technology plays a crucial role in the rapid analysis of huge amounts of data to predict market prices and trading opportunities, thereby increasing the efficiency of investments. In addition, AI provides investors with real-time information and assists in risk management. However, there are objective difficulties, and crypto fraudsters study different scenarios and adapt to changing market conditions using AI. By using the methods of observation, generalization, systematization and comparison, the authors have achieved results in determining the significance of implementation. In particular, the integration of artificial intelligence and cryptocurrencies can be applied, which aims to use the capabilities of big data processing and continuous learning to create a more efficient trading environment and financial services. The results presented in this paper give grounds to assert that it is possible to implement in the real business and technological environment (exchanges, crypto-exchanges, cryptocurrency operations, IT infrastructure, big data, AI). The article proposes innovative models and applications of artificial intelligence for use in trading business operations, where the main tool for users is generative artificial intelligence and interfaces. This method makes it possible to define generative artificial intelligence and natural language interfaces as the main means for trading operations that will be carried out using cryptocurrencies. As a result, real-time cryptocurrency trading and investment strategies based on data and algorithms have become possible.

**Keywords:** artificial intelligence, trading, trading bots, blockchain technology, smart contract automation, cryptocurrency projects, crypto fraud.

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## MITIGATING OPERATIONAL RISKS IN CRITICAL INFRASTRUCTURE THROUGH INTEGRATED ERP-BPMS: A MULTI-CASE STUDY

pages 53–63

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Operational risks in critical infrastructure sectors, from housing services and specialized construction to water technology and energy utilities, have significant socioeconomic implications. This study investigates how an integrated enterprise resource planning-business process management system (ERP-BPMS) supported by a dedicated information administrator (IA) can systematically mitigate these risks. Using a quasi-experimental, multi-case design, four anonymized organizations contributed baseline data (3–9 months) and post-implementation data (6–8 months). Six indicators were tracked: integral qualification score (IQS), cost prediction accuracy (CPA), system stability index (SSI), preventive maintenance ratio (PMR), sourcing score, and information utilization rate (IUR).

Results reveal that IQS increased substantially in all cases (e.g., from 9.5 to 42.1), while CPA values commonly exceeded 0.85. Preventive maintenance ratios increased by 15–20 percentage points, indicating a notable shift from reactive to proactive strategies. In the energy utility case, the SSI improved from 1.04 to 1.31, showing enhanced service reliability. The IA's oversight proved instrumental in ensuring consistent data governance, standardizing metrics, and streamlining cross-departmental coordination. These improvements translated into measurable resource savings that significantly outweighed the costs of maintaining the IA role. Cross-case analysis suggests that a staged implementation, beginning with pilot phases for core modules, can reveal data inconsistencies early and inform tailored training programs. Managers in sectors where cost accuracy and project timelines are critical may benefit substantially from such phased rollout. Collectively, these findings highlight that a unified ERP-BPMS platform reinforced by structured human governance can significantly bolster risk management in mission-critical contexts. This research contributes to both information systems and project management fields by offering a tested framework for enhancing resilience and operational stability in high-stakes environments.

**Keywords:** ERP, BPMS, integration, risk, management, infrastructure, data, governance, case, study.

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# IMPROVING THE APPROACH TO ASSESSING THE IMPACT OF FINANCIAL MARKET DIGITALIZATION ON THE RATIONALITY OF FINANCIAL DECISIONS

pages 64–75

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The object of research is the process of assessing the impact of digital transformations on the rationality of financial decisions (RFD) in the context of the functioning of modern financial markets.

The problem being solved is to specify a scientifically sound approach to the integrated analysis of quantitative, qualitative and simulation characteristics, which allow for accurate determination of the effectiveness of digital technologies in the processes of financial decision-making, taking into account uncertainty, data limitations, behavioral factors and the level of digital literacy.

It is proven that the growth of spending on digital technologies is closely correlated with the growth of the RDF level, which is confirmed by the results of multi-criteria analysis, ARIMA forecasting, Monte Carlo modeling and clustering. The effectiveness of the use of hybrid simulation models that combine system dynamics with an agent approach is determined, and indicators of digital sustainability of companies are also proposed.

The recommendations developed to improve the approach to assessing the impact of digitalization of financial markets on RDF can be used by financial institutions, regulatory authorities and the corporate sector to assess the effectiveness of digitalization, increase the validity of financial strategies, reduce the level of risk, adapt to martial law conditions and strengthen competitiveness in the digital environment.

**Keywords:** digital finance, digital resilience, simulation modeling, digital transformation, financial literacy.

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## DEVELOPMENT OF PRODUCTIVE FORCES AND REGIONAL ECONOMY

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### ASSESSMENT OF HIGH-TECH EXPORT DYNAMICS AND THE IMPACT OF ITS CYCLICALITY ON GDP AND THE COUNTRY'S PRODUCTION RESERVES

pages 76–86

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The object of this research is the dynamics of high-tech exports and their impact on GDP and production reserves. The instability of high-tech exports can hinder long-term economic growth, particularly in economies where technological sectors play a crucial role in national competitiveness.

To address these issues, the research employs an econometric approach that integrates both linear and cyclical components to analyze the structural dynamics of high-tech exports. As a result, the research identifies two dominant economic cycles, lasting 3.8 and 5.7 years respectively, which significantly influence overall export trends. This is attributed to the nature of high-tech industries, where product innovation cycles, shifts in global demand, and technological progress contribute to periodic fluctuations in export volumes.

The proposed econometric model offers a more accurate assessment of production reserves by identifying periods of economic acceleration and deceleration. This is achieved through the model's ability to isolate cyclical components, enabling strategic adjustments in industrial planning, investment policy, and

innovation-driven growth. For instance, based on the identified cycles, companies can better align product launch schedules, reconfigure production capacity during demand slowdowns, and optimize export contract volumes during peak growth periods. Compared to conventional forecasting methods, this approach provides a more comprehensive understanding of high-tech export dynamics, enhancing economic stability and industrial resilience.

The research also holds practical significance. Specifically, the implementation of adaptive budgetary and industrial strategies that are attuned to cyclical dynamics can reduce the risks of overproduction, shortages, or price volatility. In post-war Ukraine, the findings may facilitate the development of strategic policies aimed at the recovery and modernization of the industrial sector. Given limited resources and the urgent need for innovative reconstruction strategies, the proposed model could serve as a foundation for crisis-responsive planning and the rationalization of investments in priority industries.

**Keywords:** high-tech, high-tech products, export, production reserves, mathematical modeling, dynamic indicators, cyclicity.

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## REGIONAL DEVELOPMENT PROJECT MANAGEMENT: FINANCIAL ASPECT

pages 87–92

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The article explores the financial aspect of managing regional development projects in the context of strategic planning and socio-economic challenges. Particular attention is paid to project financing, their role in investment incentives for regions, infrastructure modernization and human capital development. The object of the study is practical mechanisms for financing projects aimed at the socio-economic development of regions. The authors analyze the main sources of funding, the role of the State Fund for Regional Development (SFRD), and co-financing mechanisms from local budgets. The authors consider the impact of project financing on regional development, taking into account current economic and social circumstances, including military challenges. Particular attention is paid to the strategic management of financial resources, which allows achieving long-term sustainable development of territories and reducing territorial disparities. The model of regional development project management has been improved, reflecting a systematic and strategic approach to the financial support of regional initiatives, with a focus on efficiency, transparency, multi-channel financing, risk management, and institutional capacity, which ensures its adaptability to the challenges of modern regional policy. The proposed approaches can be used as a basis for the development of regional development strategies focused on achieving social justice and economic efficiency. Analyzing the research of scholars, it has been found that most of them focus on the need to attract alternative sources of funding. This will increase the financial capacity of local budgets by 20–30% compared to traditional approaches. Some models of interregional financing adapted to the conditions of Ukraine demonstrate a 25% increase in resource efficiency due to the digitalization of infrastructure project management. The article also emphasizes the importance of cross-sectoral cooperation and partnerships between the public, private and civil society sectors in project financing. The presented results are of practical importance for local governments, think tanks, and regional development policy makers. In the context of European integration processes, the application of the best European practices in financial management at the regional level is becoming increasingly important. The implementation of innovative financial instruments can enhance the adaptability of regional systems to external shocks. The results of the study can serve as an analytical basis for further scientific developments and implementation of effective state regional policy.

**Keywords:** project management, regional development, financing, socio-economic development, public policy.

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## PROBLEMS OF MACROECONOMICS AND SOCIO-ECONOMIC DEVELOPMENT

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### RESEARCH OF PROBLEMS AND PROSPECTS OF ECONOMIC ADAPTATION OF MILITARY SERVICEMEN: SOCIOLOGICAL AND STATISTICAL ANALYSIS

pages 93–99

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The object of research is the system of economic adaptation of military personnel returning to civilian life after participating in hostilities during the full-scale war in Ukraine. As a result of the conducted analysis and sociological

research, several key deficiencies in the functioning of this system were identified, including: insufficient level of state support during the transition to civilian employment, low level of informational assistance, difficulties with job placement, and limited access to retraining and entrepreneurial development.

To identify and address these shortcomings, a comprehensive approach was applied, including statistical analysis of the labor market, regional analysis of job vacancies, study of veteran support initiatives, and a sociological survey of servicemen using an online questionnaire. These methods made it possible not only to detect weaknesses in the adaptation system but also to develop proposals for its improvement.

The study found that 58% of military personnel are only partially prepared for reintegration into civilian life. The main reserves for improving adaptation include expanding access to training programs (noted by 48% of respondents), promoting entrepreneurship (important to 34%), and developing digital and creative skills (needed by 22% and 28%, respectively). The results also revealed a high potential for self-employment among veterans, with 26% intending to start their own business, which could become a growth driver for regional economic activity.

The authors interpret the results by asserting that effective economic adaptation is achievable through the creation of an integrated institutional support model. This model should combine state policy, digital labor market tools, human capital development, and the utilization of veterans' creative potential. The results of the sociological study of the needs of military personnel, presented in the article, give grounds to argue about the possibility of their involvement in entrepreneurial activity. Such an integrated system can ensure not only employment but also economic self-realization and sustainable reintegration of veterans into post-war society.

**Keywords:** adaptation, creative potential, military personnel, labor market, self-employment, entrepreneurial activities.

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#### INNOVATION CYCLES AS A STRATEGIC METHODOLOGICAL OBJECTIVITY OF THE NEW TECHNOLOGICAL PARADIGM OF SOCIO-ECONOMIC DEVELOPMENT

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The object of research is the processes of socio-economic development in the context of technological transformation, taking into account innovation cycles. The paper examines the role of innovation cycles as a strategic methodological objectivity that determines the dynamics of socio-economic development in the context of the transition to a new technological paradigm. The relevance of the topic is due to the global challenges of our time: digitalization, digitalization of the economy, development of artificial intelligence, transition to a green economy and the need to formulate adaptive development strategies that can respond to the pace of technological change. Innovation cycles are viewed as a multi-stage process that includes emergent ideas, new technologies, mass adoption of innovations and their impact on the structure of production, employment and institutional models.

On the basis of historical and theoretical analysis, the paper traces the evolution of industrial revolutions – from Industry 1.0 to the anticipated Industry 6.0. It is noted that each new phase of industrial development is accompanied by the formation of a new technological paradigm that changes the principles of interaction between technology, capital, labor and knowledge. Industry 6.0, as the expected next stage, is associated with the symbiosis of artificial and biological intelligence, autonomous economies, decentralized management structures and value-oriented innovation development.

The author substantiates the need to understand innovation cycles not only as an empirical phenomenon, but also as a methodological basis for strategic planning. In this context, the paper proposes a conceptual model that provides for the integration of cyclical analysis into the processes of state regulation, forecasting and formation of sustainable growth policies. The conclusions presented are of interdisciplinary importance and can serve as a basis for further research in the fields of economics, sociology, public administration and technological development.

**Keywords:** innovation cycles, technological paradigm, industrial revolution, strategic management, socio-economic transformation.

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