

**State Organization «Institute of Market and Economic&Ecological
Researches of the National Academy of Sciences of Ukraine»**

Summary of scientific novelty for the research

**3.1.8.75/Б «Adaptive management of business processes in the context of
digitalization of the Ukrainian economy»**

(Registration No. 0122U000801, performance period: 01.2022–12.2024)

**Stage I of research «Theoretical basis for adapting business process
management in the context of digitalization of the Ukrainian economy»**

(performance period: 01.01.2022–31.12.2022)

The scientific novelty of the conducted research is as follows:

Originally developed:

- the theoretical and conceptual principles of adaptive management of business processes in the conditions of digitalization of the economy of Ukraine were developed and substantiated on the basis of a system-activity approach and principles of reflection, purposefulness, self-organization, scientificity, self-development, mandatory feedback and perspective, which involve changes in research morphology (development of the theoretical basis for adaptive management of business processes), methods and criteria; substantiation of the theoretical and methodological bases of identification and assessment of dominants and imperatives of adaptation of business process management and their effectiveness at the micro- and meso-levels;

- a conceptual approach to the management of business processes in the conditions of digitization at the meso level according to three models is proposed and substantiated: «Subject-Subject», «Subject-Market of the resource-raw material base, products and services», «Subject-State», by establishing interconnection and coordination of subjects – participants in business processes;

- the classification of the study of the impact of digitalization on the transformation of physical and living labor is based on three (specific, general and universal) and two (general for the economic environment and specific for the labor market) levels, respectively, which were subsequently used in the investigation of the signs and features of the transformation of industrial relations under the influence of digitalization and revealed their competence potential according to five approaches: structural-sectoral, process, technical-technological, virtual, information and globalization.

Improved:

- the conceptual and categorical apparatus of the theory of adaptive management of business processes in conditions of digitalization by introducing such categories as: business process at the micro- and meso-levels; competence potential; adaptive management of business processes; reflexive and active environment of interaction and coordination of business processes;

- conceptual and categorical apparatus of the theory of entrepreneurship by defining the category of «adaptability» in the context of the system characteristics of business process management of entrepreneurial structures under the influence of digitalization as a property of the business process management system of entrepreneurial structures, which determines its ability to quickly (in real time) rebuild internal characteristics with the help of digital technologies in order to make and implement effective management decisions in the conditions of dynamic changes in the business environment;

- conceptual and categorical apparatus of labor theory by introducing the concept of «Transformation of living labor» as changes in social and labor relations in the processes of creating new value and reproduction of labor force;

- on the basis of the identification of such key characteristics of business processes as: reproduction, adaptability, complementarity, the conceptual and categorical apparatus of the theory of business process management has been improved in order to determine the essence of such definitions as: business processes of the subject of entrepreneurial activity under the influence of cyber-physical systems as a set of consecutive, complementary (interdependent, complementary, coordinated) actions that are carried out based on the use of cyber-physical systems and provide the subject of business activity with its extended reproduction (obtaining added value) and adaptation to the business environment;

- the categorical apparatus of the theory of digitization of the economy in the direction of «digital goods» by clarifying from the standpoint of the methodology of economic science such categories as «informational good» (the unity of information and the medium that allows information to be an object of consumption), «digital benefit» (informational benefit, that exists in the form of a bit string), a digital good (a digital good that has value in exchange), a crypto good (a digital good that functions on the basis of technology distributed register);

- classification of digital goods according to their duration (three groups: non-durable, long-term and permanent) and according to their functional role (four groups: items of personal consumption, means of production, money and investment goods);

- classification of types of digital technologies in the context of their use in business structures by introducing such a feature as the size of the subject of their consumption (large, medium, small) based on the identification of barriers that prevent the processes of digital transformation of business structures of different sizes and types of activities, considering that the intensity of digital transformation of business processes of entrepreneurial structures and types of technologies differ significantly for different types of activity. For SMEs: multilateral platforms, Internet of Things, cloud computing, IaaS, infrastructure as a service, PaaS, platform as a service, SaaS, software as a service. For large business structures (depending on the type of activity): industrial – new production technologies, additive technologies, supercomputer technologies, computer engineering, industrial Internet, components of robotics (industrial robots), sensors; of agriculture: «Internet of Things» (IoT), precision agriculture, «smart» greenhouses, «smart» farms, «smart» storage for vegetables and fruits, monitoring the use of agricultural machinery using satellite navigation systems and sensors; construction: building information modeling (BIM) and Digital Twin, artificial intelligence, augmented and virtual

reality, «smart clothes», robots and drones, modular and off-site construction;

- criteria for evaluating the effectiveness of adaptive management of business processes in the conditions of digitalization according to such subsystems as: effectiveness; economy of the organization; quality of products and work; profitability of economic activity; labor productivity; quality of working life; introduction of innovations.

Have been further developed::

- definition and substantiation of the prerequisites for adaptive management of business processes to the requirements of digitalization of the economy based on world experience in two directions of influence: globalization (intensive development of technologies and innovations; strengthening of the importance of the service sector; accelerated inclusion in the process of globalization; distribution of influence in world in connection with Russian aggression) and labor relations (transformation of labor relations in the conditions of changes in communication technologies; motivation of labor behavior in the context of «remote relations»; the process of forming a flexible, virtual labor market in the conditions of digitalization; the formation of creative and service classes);

- theoretical justification of changes in social and labor relations that arise in the process of social production, as well as in the reproduction of human capital under the influence of digital transformation;

- the theory of entrepreneurship by proving that the digital transformation of business processes contributes to the flexibility and adaptability of business structures to rapid changes in external conditions (business environment), based on the study of the evolution of scientific approaches to the digitalization of business process management and the discovery that sub object-oriented modeling methodology in business process management is the only one that can work on a modern, reflective business structure with a flexible structure;

- a systemic representation of adaptive management of business processes, which, unlike the existing one, is presented at the regional level by such components as: approaches to business process management depending on the algorithm of adaptive management of business processes by components of these processes, implementation technologies and by changing the reflexive management model; business process management vectors at the regional level under the influence of the external environment and with the help of the coordination center; the chain «Subject-Market-State-Civil society»; infrastructural-informational-communication environment for ensuring management of business processes at the meso-level;

- definition and content of constituent business processes under the influence of cyber-physical systems on the basis of a system-activity approach, which, unlike the traditional one, takes into account the transformation of main, auxiliary business processes and management business processes;

- the concept of product duration, which is defined as the product's ability to retain value and allows the classification of digital goods according to duration into three groups: non-durable, durable and permanent. This classification makes it possible to determine the specifics of the reproduction of goods from each group, which, in turn, affects pricing and strategies for building business processes at firms for profit from the production and sale of digital goods.

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