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THEORETICAL AND PRACTICAL PRINCIPLES OF ENTERPRISE MANAGEMENT AS A BUSINESS ORGANIZATION IN CONDITIONS OF UNCERTAINTY ON THE PATH TO SYSTEMIC EXCELLENCE
ТЕОРЕТИКО-ПРАКТИЧНІ ПРИНЦИПИ УПРАВЛІННЯ ПІДПРИЄМСТВОМ ЯК БІЗНЕС-ОРГАНІЗАЦІЮ В УМОВАХ НЕВИЗНАЧЕНОСТІ НА ШЛЯХУ ДО СИСТЕМОЇ ДОСКОНАЛОСТІ

Гагарінов О. В. Теоретико-практичні принципи управління підприємством як бізнес-організацією в умовах невизначеності на шляху до системної досконалості. *Український журнал прикладної економіки та техніки*. 2026. Том 11. № 2. С. 370 – 374.

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The article examines the issues of enterprise management under conditions of uncertainty. Uncertainty regarding the management of an enterprise's operations and development is an external condition that makes it impossible to obtain sufficient completeness, reliability, and timeliness of data and information for decision-making at all levels of the management hierarchy, from strategic to operational. Such a state of the external environment for the functioning and development of business entities poses high risks, with a high probability of financial and economic losses, loss of stability, and a general decrease in strategic potential. This generates uncertainty in the internal environment of enterprises regarding the trajectory of strategic movement, particularly the definition of strategic target guidelines for future development, the formation of a system-wide strategy, and a plan of fundamental changes for its implementation, with decomposition into tactical and operational goals and activities. On the other hand, uncertainty is exacerbated by the disorientation of people who perform certain organizational roles in these systems, lead their lives, communicate with others, and interact with the external environment beyond their borders, as well as by deteriorating mental health. That is, an interconnected chain of multifactorial cause-and-effect relationships forms, leading to a negative systemic effect and significantly reducing the level of strategic potential of economic systems. The key ideas, type of world, and concepts of management are compared: from classical certainty to synergistic uncertainty. For the purposes of effective enterprise management in conditions of uncertainty, it is proposed to use management concepts, approaches and tools from classical certainty to synergistic uncertainty, increasing the level of its systemic excellence as a business organization, where systemic excellence incorporates all previous developments of management concepts from classical certainty to synergistic uncertainty, including operational excellence (excellence the internal environment of the enterprise as a business organization), business excellence (excellence of interaction with the external environment) and the excellence of strategic management in a world of high uncertainty. Theoretical and practical principles of enterprise management as a business organization in conditions of uncertainty on the way to systemic excellence are proposed, namely: the principle of action instead of waiting; the principle of speed and simplicity; the principle of open communication and trust; the principle of framework consistency; the principle of preserving the critical core; the principle of attentiveness to weak signals; the principle of scenario thinking; the principle of balancing analytics and intuition.

Keywords: enterprise, business organization, uncertainty, management, systemic excellence, principles of enterprise management under uncertainty.

У статті досліджено проблематику управління підприємством в умовах невизначеності. Невизначеність щодо управління функціонуванням та розвитком підприємства - це стан зовнішнього середовища, який унеможливує отримувати достатню повноту, достовірність та своєчасність даних та інформації щодо прийняття рішень на всіх рівнях ієрархії управління, починаючи від стратегічного і закінчуючи оперативним. Такий стан зовнішнього середовища функціонування та розвитку суб'єктів господарювання продукує високі ризики, які корелюють із високою вірогідністю фінансово-економічних втрат, а також із втратою стійкості та загальним зниженням стратегічного потенціалу. Це породжує невизначеність у внутрішньому середовищі діяльності підприємств щодо траєкторії стратегічного руху, зокрема визначення стратегічних цільових орієнтирів щодо майбутнього розвитку, формування заздалегідь системної стратегії та плану принципів змін щодо її реалізації з декомпозицією до тактичних та операційних цілей та активностей. З іншого боку, невизначеність посилюється дезорієнтацією людей та погіршенням їхнього ментального здоров'я, які виконують певні організаційні ролі в цих системах і забезпечують їхню життєдіяльність, комунікуючи та взаємодіючи із зовнішнім середовищем за їх межами. Тобто формується взаємопов'язаний ланцюг базатофакторних причинно-наслідкових зв'язків, що призводить до негативного системного ефекту та суттєво впливає на рівень стратегічного потенціалу економічних систем. Співставлення ключової ідеї, типу світу та концепцій менеджменту: від класичної визначеності до синергетичної невизначеності. Для цілей ефективного управління підприємством в умовах невизначеності пропонується використовувати концепції менеджменту, підходи та інструменти від класичної визначеності до синергетичної невизначеності, підвищуючи рівень його системної досконалості як бізнес-організації, де системна досконалість вбирає в себе всі попередні напрацювання концепцій менеджменту від класичної визначеності до синергетичної невизначеності, включаючи в себе операційну досконалість (досконалість внутрішнього середовища підприємства як бізнес-організації), ділову досконалість (досконалість взаємодії із зовнішнім середовищем) та досконалість стратегічності управління у світі високої невизначеності. Запропоновані теоретико-практичні принципи управління підприємством як бізнес-організацією в умовах невизначеності на шляху до системної досконалості, а саме: принцип дії замість очікування; принцип швидкості та простоти; принцип відкритої комунікації та довіри; принцип рамової послідовності; принцип збереження критичного ядра; принцип уважності до слабких сигналів; принцип сценарного мислення; принцип збалансованості аналітики та інтуїції.

Ключові слова: підприємство, бізнес-організація, невизначеність, управління, системна досконалість, принципи управління підприємством в умовах невизначеності.

Introduction

The topic of uncertainty in the management of organizational systems for various purposes is highly relevant today. This is confirmed, among other things, by the number of scientific publications in recent times, in particular [1-4 and others]. Some aspects of enterprise management under uncertainty are covered in the author's works [5-6]. Thus, in [1], aspects of enterprise management under



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uncertainty and in crisis are considered. We agree that the uncertainty of the external environment and the lack of system management can lead to a crisis, but in a strategic perspective, including for the development of scientific foundations, we want to fix the following question: "Perhaps a high degree of uncertainty is a reality that is manifested as a new norm?"

The transformation period that the system of international relations, the security system of countries around the world is experiencing today, taking into account military and military challenges, pandemics, technical and technological changes, taking into account industry 5.0, climate and economic challenges, create conditions for the formation of a high degree of uncertainty in the external environment of all business entities in the context of further functioning and development. The relevance of managing business entities under conditions of uncertainty is sharply increasing, given the full-scale war in Ukraine and in other countries worldwide, and its impact on enterprises' economies.

Uncertainty regarding the management of the enterprise's operations and development is an external condition that makes it impossible to obtain sufficient completeness, reliability, and timeliness of data and information for decision-making at all levels of the management hierarchy, from strategic to operational. This state of the external environment for the functioning and development of business entities poses high risks, correlated with a high probability of financial and economic losses, as well as a loss of stability and a decrease in strategic potential in general. This creates uncertainty in the internal environment of enterprises regarding the trajectory of strategic movement, particularly the determination of strategic targets for future development, the formation of a system-wide strategy, and a plan for fundamental changes, including their implementation, with these plans decomposed into tactical and operational goals and activities.

On the other hand, uncertainty is exacerbated by the disorientation and deterioration of the mental health of people who perform certain organizational roles in these systems and conduct their daily lives, communicating and interacting with the external environment beyond their borders. That is, an interconnected chain of multifactorial cause-and-effect relationships forms, leading to a negative systemic effect and significantly reducing the level of strategic potential of economic systems.

Thus, according to [7], the global uncertainty index in 2026 reached a record high, exceeding levels recorded during the Global Financial Crisis of 2008 and the COVID-19 pandemic. As noted in [8], the global level of uncertainty has reached a record high due to several factors: geopolitical tensions, trade wars, and new military conflicts. That is why the word "uncertainty" is increasingly heard in reports from global analysts regarding the future of countries and their economies. As a rule, a high level of this index leads to a decline in investment, a slowdown in the world economy, and increased volatility in financial markets. The world is facing extremely difficult challenges due to military conflicts, economic crises, and shifts in the political interests of world leaders. This may continue for more than one year, since a new architecture of global security must be created. This, in turn, suggests that business entities need to seek opportunities to enhance systemic excellence, build management capacity, and make decisions informed by an understanding of the essence of uncertainty, the principles, and the approaches appropriate to these conditions. That is why the development of a system of principles for managing an enterprise under conditions of uncertainty, and their subsequent application, is an important scientific and practical problem.

Formulation of the article's objectives

The purpose of the article is to further scientific development of the topic of enterprise management under uncertainty by proposing theoretical and practical principles of enterprise management under uncertainty on the path to systemic excellence.

Research results

The concept of "uncertainty" is applied to various spheres of human activity. In the work [9], the author examines the philosophical context of the concepts of "certainty" and "uncertainty" from Democritus to the present. Meaningfully distinguishing classical certainty and classical, quantum, and synergistic uncertainty. Speaking about the ancient origins of paradigms, two parallels are followed, namely: on the one hand, the deterministic paradigm, the prominent representatives of which are Democritus and Leucippus, which says that the world is completely regular; on the other hand, the probabilistic paradigm (Epicurus), which is based on the fact that objective randomness is inherent in the world. These two basic parallels are, to a certain extent, essential to the scientific design of certainty and uncertainty, and are also reflected in approaches to enterprise management.

Classical certainty was scientifically formed in the 17th–19th centuries. The main teachings were the works of Newton and Laplace. This stage is characterized by the idea that if you know all the parameters of an enterprise's external environment and all the laws, then the future can be accurately predicted. Drawing a parallel between the key ideas of this stage and management concepts, we can say that scientific management (F. Taylor), administrative management (A. Fayol), and the bureaucratic model of M. Weber are related to it.

In turn, at the heart of classical uncertainty (17th–19th centuries), as a continuation of classical certainty, lies the idea that uncertainty arises from limitations in human knowledge. That is, reality is certain, but a person cannot know and calculate everything. Ignorance is always greater than knowledge. In this context, from the point of view of enterprise management, and in the light of classical certainty, we can say that the diversity of the external environment and the comprehension of its essence, in terms of its impact on the business entity, are always limited. That is, in this context, the enterprise management system itself is an object of limited knowledge. And, therefore, to effectively manage an enterprise from the position of classical uncertainty, it is necessary to work on overcoming obstacles to the limitation of information and human knowledge. In essence, a parallel can be drawn to the following concepts of management in general: rational management, planning systems, and P. Drucker's management by objectives, etc.

Quantum uncertainty already suggests that uncertainty is a property of reality itself (20th century, 1920–1930s, Heisenberg, Bohr, Schrödinger), that is, it is an internal property of the world. This, in turn, strengthens the focus of attention on research in quantum management. For example, in work [10], through the prism of quantum mechanics (superposition, uncertainty, and entanglement), management decisions are proposed primarily via modeling and forecasting, and in work [11], considering quantum approaches, the effectiveness of enterprise functioning as a system is examined. In general, regarding management concepts in the world of quantum uncertainty, we can discuss situational management, risk management, quantum economics, etc.

Synergistic uncertainty tells us that the world is nonlinear, unstable, and bifurcating (second half of the 20th century - 21st century; Prigozhin, Popper, Hayek). In the world of synergistic uncertainty, even small fluctuations can lead to radical changes, with various possible paths for how events develop. From this world's perspective, enterprise management should be flexible and adaptive; change management should strengthen organizational stability and antifragility; and the enterprise should be considered an integral system based on systems management. Strategic management should be built on flexibility and scenarios. In general, we can say that, in the world of synergistic uncertainty, management concepts are parallel to systems management, change management by P. Senge [12], Agile, antifragility by N. Taleb [13], and others.

Based on the above considerations, the author has systematized the material and compiled Table 1 accordingly.

Based on Table 1, it should be understood that for the purposes of effective enterprise management in conditions of uncertainty, it is necessary to use management concepts, approaches and tools from classical certainty to synergistic uncertainty, increasing the level of its systemic excellence as a business organization, where systemic excellence incorporates all previous developments of management concepts from classical certainty to synergistic uncertainty, incorporating operational excellence (excellence of the internal environment of the enterprise as a business organization), business excellence (excellence of interaction with the external environment) and excellence of strategic management in a world of high uncertainty.

First of all, based on the classical or administrative school of management, the founder of which is the French administrator and entrepreneur A. Fayol, it is necessary to recall the basic principles of management formed by him, namely [14]: division of labor; authority and responsibility; discipline; single leadership; unity of direction in the group; subordination of personal interests to the general; fair remuneration of personnel; centralization; scalar chain (a series of persons holding managerial positions, starting from the name that occupies the highest position to the head of the grassroots level); order; fairness; stability of the workplace for personnel (stability of the composition of personnel); initiative; corporate spirit (spirit of unanimity).

In the author's opinion, these basic principles of management are constructive even in conditions of uncertainty. However, close attention should be paid to the principle of "centralization" and its constructive application depending on the state of the system in conditions of uncertainty.

Table 1. Key idea, type of world, and management concepts: from classical certainty to synergistic uncertainty*

№	Concept	Key entity	Historical period	Key representatives	Key idea	Type of world	Management concepts
1	Classical certainty	The world is completely determined by laws	Scientific design: 17th-19th centuries	Newton, Laplace	If you know all the parameters and laws, you can accurately predict the future.	Mechanistic world	Frederick Taylor - scientific management; Henri Fayol - administrative school; Max Weber's bureaucratic model.
2	Classical uncertainty	Uncertainty due to limited human knowledge	17th-19th centuries	Laplace	Reality is defined, but man cannot know and calculate everything.	Subject of limited cognition	Rational management, management by objectives of Peter Drucker, and planning systems.
3	Quantum uncertainty	Uncertainty is a property of reality itself	20th century, 1920s-1930s	Heisenberg, Bohr, Schrödinger	Even with laws, not all parameters can be precisely determined simultaneously.	Quantum-probabilistic world	Situational management; risk management; quantum economics, etc.
4	Synergetic uncertainty	The world is nonlinear, unstable and bifurcated	second half of the 20th century - 21st century	Prigogine, Popper, Hayek	Small fluctuations can radically change the future; there are many possible "branches" of development	Complex systems, chaos, bifurcations	Agile; complexity management; change management Peter Senge; learning organization; antifragility Nassim Nicholas Taleb; systems management.

* - formed by the author considering [1-6, 9-13].

From a theoretical and practical point of view, this principle of enterprise management under conditions of uncertainty is advisable to apply in tactics during the enterprise's state of crisis. Otherwise, one should follow the path of decentralization with simultaneous improvement of qualifications and management of the connection of system elements with each other, primarily it is about focusing personnel management on linking its unity on the basis of constructive values, strategic target guidelines (to the development of which employees should be involved), including the formation of a long-term vision of development and relevant strategies with further decomposition. Also, regarding the principle of "division of labor" within the framework of enterprise management in conditions of uncertainty, a certain balance should be found between assigning functional areas to employees and rigid management based on a hierarchical basis (linear, functional, linear-functional organizational structures) and a project approach to management (matrix organizational structure). In periods of uncertainty, it is unlikely that employees will be able to work solely within a fixed functional area throughout the enterprise's operations and development; therefore, a culture of rotation and flexible teams should be fostered.

Synergistic uncertainty is closely related to the need to develop and strengthen the enterprise's potential for change and adaptability. We agree with the authors of [2], who consider aspects of adaptive management, but, in our opinion, it should be noted that adaptability is a property of an organizational system that needs to be developed on the basis of system-value management, including the development of the flexibility of the management system and the use of the potential of its self-organization. From our point of view, uncertainty often increases when the management system does not keep up with changes in the object of management. The main element of organizational systems, including socio-economic ones, is a person in a certain organizational role. If the management system tries to reduce diversity, and one way or another, the classical management paradigm is compliance with the law of necessary diversity U.R. Ashby, with the growing diversity of means of personal development of people who perform certain organizational roles at each level of the hierarchy of subjects of socio-economic activity, one way or another, the processes for creating conditions for the growth of uncontrollability and strengthening of bifurcation will increase, this, in turn, contributes to an increase in the level of uncertainty, because in an interconnected world even small fluctuations can lead to radical changes, as evidenced by the essence of synergistic uncertainty. And that is why a systemic approach to managing enterprises is a necessary condition for their survival and development in conditions of uncertainty.

Based on the above and drawing on the author's theoretical and practical experience, including as a consultant in enterprise organizational development, Table 2 proposes theoretical and practical principles of enterprise management under conditions of uncertainty on the path to systemic excellence.

Table 2. Theoretical and practical principles of management enterprise as a business organization in conditions of uncertainty on the path to systemic excellence*

Nº	Principle	Characteristic
1.	The principle of action instead of waiting	In an uncertain environment, solutions are born in the process of action, not just in analysis. Clarity is formed through steps, feedback, and adjustments to direction. Small experiments with controlled risk are a basic tool for maintaining and developing market positions.
2.	The principle of speed and simplicity	In a crisis, the system should be simplified, not complicated. A minimally sufficient level and set of regulations, short decision-making chains, and delegation of responsibility increase adaptability. A quick response is better than a perfect one, but a belated one.
3.	The principle of open communication and trust	Employees (people in certain organizational roles) tolerate uncertainty better than ignorance and a lack of information. Open, honest, and regular communication (even when all the answers are not available) reduces anxiety and strengthens cohesion. The formula "we don't know everything, but we know what to do next" creates a foundation for building and strengthening a team.
4.	The principle of frame sequence	Even in conditions of uncertainty, movement must occur in a common logic. Values - Mission - Vision - Strategy - Change Plan. This allows you to adjust tactics without losing integrity. Flexibility does not equal chaos; it means coordinated changes within a common vector.
5.	The principle of preserving the critical core	Employee development, customer service, and trust maintenance are essential investments in survival and the future. In times of uncertainty, it is wise to cut back on the secondary, but not lose what builds competence, reputation, and loyalty. A system that saves on the future quickly loses the present.
6.	The principle of attentiveness to weak signals	Small deviations are often the first indicators of changing trends. The ability to notice the smallest changes, question the usual, and revise assumptions is one of the key competencies of a manager in the face of uncertainty.

* - suggested by the author.

Based on Table 1, we believe that understanding and practical application of theoretical and practical principles of enterprise management in conditions of uncertainty on the path to systemic excellence can increase the survival potential and the possibility of further effective long-term functioning and development of Ukrainian enterprises in current and future economic conditions. It should also be noted that the application of these principles does not depend on the geographical activity of enterprises.

Conclusions and prospects for further exploration

For the purposes of effective management of an enterprise in conditions of uncertainty, it is necessary to use management concepts, approaches and tools from classical certainty to synergistic uncertainty, increasing the level of its systemic excellence as a business organization, where systemic excellence incorporates all previous developments of management concepts from classical certainty to synergistic uncertainty, incorporating operational excellence (excellence of the internal environment of an enterprise as a business organization), business excellence (excellence of interaction with the external environment) and excellence of strategic management in a world of high uncertainty.

Based on the research, a list of theoretical and practical principles of enterprise management in conditions of uncertainty on the path to systemic excellence is proposed, namely: the principle of action instead of waiting; the principle of speed and simplicity; the principle of open communication and trust; the principle of framework consistency; the principle of preserving the critical core; the principle of attentiveness to weak signals; the principle of scenario thinking; the principle of balancing analytics and intuition.

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