



Organisational Sustainability Management Principles



Alexey P. Tyapukhin

Orenburg Branch of the Institute of Economics of the Ural Branch of the Russian Academy of Sciences, Orenburg, Russia.

✉ aptyapuhin@mail.ru.

Alexey P. TYAPUKHIN

ABSTRACT

The objective of the article is to substantiate and implement an approach to designing the principles of sustainability management of organisations and their associations, which ensures digitalisation of these principles and their structuring regarding levels of management, as well as between adjacent links in the logistics chain.

The research used methods of classification, analysis and synthesis, induction and deduction as research methods, and binary matrices formed based on classification features and their dichotomies, which make it possible to increase the objectivity of the results obtained, as a tool.

The article substantiates the possibility of designing organisation management principles based on their actual qualitative features of principles and dichotomies with further formation of binary matrices that allow for digitalisation of management principles and their structuring regarding levels of organisation management, as well as between adjacent links of the logistics chain; develops an ordered set of principles for

organisational sustainability management with justification for their quantity and quality; proves the compliance of the developed management principles with the goals and objectives developed by the United Nations in 2015.

The implementation of the obtained results will reduce the lost profit of organisations and their associations, the time and costs for preparation and implementation of management decisions, will respond in a timely manner to the unique requirements of end consumers, and will also ensure that the parameters and characteristics of the internal environment of organisations and their associations correspond to the nature, duration, and volatility of environmental factors.

The suggested approaches and solutions, being sufficiently universal, can refer to full extent, to transport and logistics organisations and associations, as well as to all participants in supply chain, and are particularly relevant with the account for accelerated adoption of digital technology in transport and logistics activities.

Keywords: transport, supply chain, principle, management, organisation, digitalization, structuring, management level.

For citation: Tyapukhin, A. P. Organisational Sustainability Management Principles. World of Transport and Transportation, 2022, Vol. 20, Iss. 2 (99), pp. 128–139. DOI: <https://doi.org/10.30932/1992-3252-2022-20-2-1>.

The text of the article originally written in Russian is published in the first part of the issue.
Текст статьи на русском языке публикуется в первой части данного выпуска.

INTRODUCTION

Rapid changes in political, economic, technological conditions of external environment, accelerated adoption of new vehicles, autonomous and intelligent systems, processes of on-going digitalisation significantly influence activities of the organisations of the transport system of the Russian Federation, predetermine the need to improve their management systems and, first of all, management tools.

Principles of management [1] are ranked among the main tools of management of organisations. Regarding scientific principles, they are understood as «general scientific laws which explain how something happens or works»¹. The importance of management principles for achieving the goals of an organisation was emphasised by many researchers. Depending on the factors of the external environment, as well as on the threats and opportunities that have been formed in the markets at one time or another, several basic versions of these principles, focused either on improving the enterprise management system [1], or on increasing labour productivity [2], or on improving the quality of products and/or services [3], or on introducing a systematic approach to management [4], have been developed and implemented. At the same time, the principles of management are not constant over time, both in quantity and content.

The problem of timely detection of inefficiency of the organisational management principles and the need to update, radically change or design them, is relevant for the following reasons: a wide range of parameters and characteristics of the factors of the external and internal environment of the organisation, the uniqueness of the links between them; their continuous transformation and volatility; a significant proportion of subjectivity in approaches used to determine quantity and quality of management principles; fuzzy patterns of transformation of one version of management principles into another; lack of methods for designing these principles with subsequent adjustment of approaches, methods and functions that ensure the effective impact of the subject on the managed object.

The above reasons largely predetermine the results of managing an organisation in modern

conditions, which are characterised by a focus on sustainability and sustainable development of human society [5]. At the same time, many experts point out the problems associated with management of organisation's sustainable development, for example [6]. This fact, among other things, is due to the non-efficient structuring and coordination of the basic principles of management of supply chains, and, consequently, of their links (organisations).

The process of developing (designing) the principles of managing the sustainable development of an organisation is facilitated to a certain extent, since today the foundations for managing sustainability and sustainable development, including its goals and objectives, have been created [7]. Without questioning the relevance and methodological recommendations for management of sustainability and sustainable development, it is necessary to make adjustments to this sector of management in such areas as: creation of prerequisites for detailed development and subsequent adaptation of these recommendations to the content and structure of new or adjusted principles for managing organisations; substantiation of the approach to determining their quantity and quality, as well as interrelations for the purpose of their further digitalisation; structuring regarding levels of organisation management and harmonisation with the principles of management of counterparty organisations.

LITERATURE REVIEW

The literature review has revealed several important aspects of designing the principles of organisation management that follow.

- Experts attach great importance to the principles of organisation management, extending their influence to almost all the sections of management, for example, in [8; 9].
- The principles of management are used in the main fields of management, such as strategic management [10], marketing [11], innovation management [12], supply chain management [13], etc.
- The principles of management are primarily aimed at a person or a group of people whose forms of behaviour are extremely diverse and are largely related to changes in the organisation's strategy, technologies used, organisational management structures, etc. Therefore, management principles should correspond to these changes [14].

¹ Definition of «principle». Collins Online English Dictionary. [Electronic resource]: <https://www.collinsdictionary.com/us/dictionary/english/principle/>. Last accessed 30.03.2022.



- The application of one or another version of management principles is determined, among other things, by the level of organisational culture [15], as well as an organisation's ability to adapt itself to negative external influences [16], including its focus on sustainability and sustainable development [17].

- It is necessary to distinguish between the production (divisions of the organisation and their relationships) and organisational structures of the organisation's management (positions, their interrelationships, as well as a scheme for distribution of responsibilities, rights and obligations), each of which is characterised only by their inherent, although interrelated, variants of principles.

- It is expedient to design the principles of organisation sustainability management on the basis of seventeen goals and objectives developed by the United Nations [7], while providing the possibility of digitalisation of these principles for development and application of computerised support for management activities, on the one hand, and providing for creation of prerequisites for data structuring principles for different levels of management of the organisation according to the scheme «general director → functional directors → heads of departments → ...», tracking not only vertical, but also horizontal links between them.

- Design of management principles should contain a theoretical substantiation of quantity and quality of these principles, since for the vast majority the management principles developed earlier do not provide answers to the problems above, reducing thus the results of their implementation in practice due to the impossibility of unambiguous structuring and coordination, including with counterparty organisations, although this aspect of management is provided for, i.e., in management of relationships with suppliers and consumers in supply chains [18].

METHODOLOGY

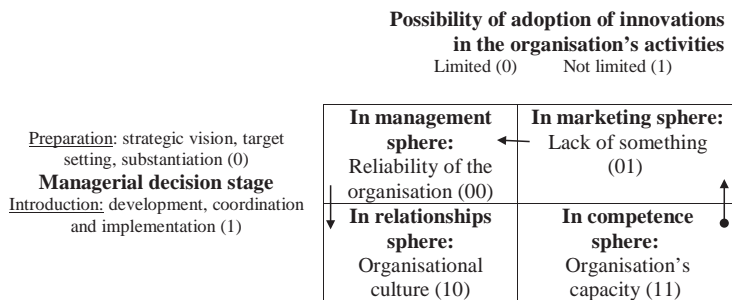
Achieving the objective described in the article requires the use of qualitative methods for studying objects that are complex in structure and content [19]. If quantitative research methods are distinguished by a clearly defined scale and various tools for measuring these objects, then qualitative methods clearly do not allow solving this problem. Nevertheless, theory and practice allowed to partially substantiate its solution. For this it is necessary to:

- Develop an individual, finite series of qualitative features of the object of the study, which in the considered case is a set of management principles as a component of the organisation's management system. The number and sequence of application of these features is established based on two basic methods related to the object of study: analysis of sources and a sociological survey of experts.

- Highlight the so-called actual qualitative features of the given object. At this stage, it is also necessary to select dichotomies that describe the variants of each actual qualitative feature, which are denoted by the codes «0» and «1», respectively. Dichotomies allow getting 2^x variants of the object under study, where the number «2» reflects the number of dichotomies, and x is the number of used qualitative features of this object. It is easy to see that each of the variants obtained in this case can be designated by a binary code, which greatly facilitates digitalisation of these objects. In fact, this means that in the management system of an organisation, a set of management principles will be designated by a basic binary code or a first-level code, blocks or groups of these principles – by a second-level code, and, finally, each principle individually – by a third-level code in accordance with their hierarchy and relationships.

- To shape, based on the faceted method, main variants of the object of study using the above relevant qualitative features and their dichotomies. As a result, binary matrices are formed and studied, which are widely known among specialists in the field of strategic management, marketing, and other fields (see, for example [20]).

- Qualitative features, in turn, can be used not only in parallel, forming 2^x variants of the object of study, but also sequentially. Let us suppose that the CEO is responsible for the management principles which are of interest to the organisation. The implementation of these principles involves the building of a team of functional directors, each of which will be responsible for a part of the management principles, being in interconnection with other functional directors responsible for other management principles. It is obvious that these relationships are supported based on the corresponding qualitative features. Let's assume that there are two such signs. This means that the CEO responsible for a particular set of principles interacts with four functional directors who are linked to each other. In the



Pic. 1. Classification of main blocks of organisation's management principles [developed by the author].

simplest case, each functional director is responsible for a quarter of the management principles. Obviously, each functional director is also able to build his own team of department heads or a lower level of management. Application by him of at least two quality features of the second level leads to building of a team of four department heads subordinate to him, each of which is responsible for one sixteenth of the management principles, and so on. Thus, the designed management principles, and not only them, are almost ideally decomposed regarding the levels of organisation management and, as noted earlier, are easily digitised.

RESULTS

Substantiation of Quantity and Quality of the Principles of Organisation Sustainability Management

Management as a type of human activity is primarily associated with justification, formalisation, development, coordination, adoption, structuring, implementation, and monitoring of management decisions. The processes listed above create the prerequisites for determining the first qualitative sign of the principles of managing an organisation: the «stage of managerial decision». The sequence of processes accompanying the stages of a managerial decision makes it possible to choose the dichotomies of this feature, which involve the preparation (code «0») and implementation (code «1») of a managerial decision.

In a dynamically changing external environment of an organisation, management decisions cannot be fully standardised and, therefore, require the use of innovations, on the one hand, and, on the other hand, provide for some constraints when acting in this or that manner on the object of management (human resources). If in an area of the organisation's activity the possibility of introducing innovations

is desirable, but limited, then in another area it is necessary, since it ensures the competitiveness of this organisation. This aspect of making and implementing management decisions involves differentiation of the second qualitative feature of the organisation's management principles: «the possibility of introducing innovations into various areas of the organisation's activities». This feature provides for dichotomies: «opportunity is limited» (code «0») and «opportunity is not limited» (code «1»). The faceted method of qualitative research makes it possible to form a binary matrix consisting of four ($2^2 = 4$) blocks or groups of organisation management principles (Pic. 1).

Note that the number of blocks of management principles can be more than four. The use of the third qualitative feature and its dichotomies will make it possible to single out eight ($2^3 = 8$) such blocks, which does not contradict the norm of the organisation's manageability when performers execute only their own functions. The classification of the main blocks of organisation management principles (Pic. 1) is the basis for determining each management principle separately, that is, each of four blocks can be divided into at least four management principles.

The data in Pic. 1 make it possible to establish the sequence of using blocks of organisation management principles in practice: the created potential (strategic aspect of the organisation), code «11», should allow the organisation to eliminate the insufficiency of something in the market most effectively (marketing aspect), code «01», while ensuring the reliability of the organisation (management aspect), code «00», based on organisational culture (socio-cultural aspect), code «11».

Let's consider the content of Pic. 1 in more detail.

1. The combination of the dichotomies «preparation» (code «0») of the qualitative



Trends of changes in the organisation's capacity following the negative impact thereon		
	Restored (0)	Not restored (1)
Stable (0) (not subject to adjustment) Stability of the strategic goals of the organisation Unstable (1) (subject to adjustment)	Stability (Mode: return) (0000)	Flexibility (Mode: adaptation) (0001)
	Viability (Mode: survival) (0010)	Survivability (Mode: counteraction) (0011)

Pic. 2. Classification of types of the organisation's reliability [21].

feature «management decision stage» and «limited» (code «0») of the qualitative feature «the possibility of introducing innovations in various areas of the organisation» (Pic. 2) suggests the allocation of such block of principles as «organisation reliability management» (code «00»), which will be further structured into components, in our case, management principles, which, according to the design results, contrary to the opinion of H. Fayol [1], will make not fourteen, but sixteen ($2^4 = 16$) principles.

Since these principles are developed within the framework of the strategic vision of the organisation, that is, for the long term, it is almost impossible to guarantee the reliable operation of the organisation. Depending on the factors of the external and internal environment of the organisation, it is necessary to develop basic options for behaviour in a particular management situation, depending on the effectiveness or degree of achievement of its strategic goals. Thus, we can conclude that the first qualitative sign of the organisation's reliability is the sign of «stability of the organisation's strategic goals», which, as you might guess, has the dichotomy of «stable goals» (code «0») and «unstable goals» (code «1»), or targets to be adjusted. Factors of the external and internal environment can significantly affect the capacity of the organisation, which, as a result of the impact of these factors, can either be restored (code «0») or even increase, or not be restored (code «1»), or even decrease. These dichotomies correspond to the second qualitative sign of reliability of the organisation, i.e., its ability to achieve its goals depending on the factors of the external or internal environment (Pic. 1), such as «trends in the organisation's capacity as a result of a negative impact on it». The joint use of the features and dichotomies presented above allowed the author [21] to propose four options

for reliability of the organisation: «stability» (the «return» mode of functioning of the organisation, code «0000»), «flexibility» (the «adaptation» mode of operation of the organisation, code «0001»), «viability» (organisation «survival» mode, code «0010») and «survivability» (organisation «counteraction» mode, code «0011») (Pic. 2). Let us note that the first two digits of the four-digit code «00» mean «reliability of the organisation» (Pic. 1).

The reliability options justified above (Pic. 2) lay the foundation for designing the principles of managing an organisation at the level of department heads within the responsibilities of one of the functional directors of the organisation, reporting, in his turn, to the general director.

2. The combination of the «preparation» dichotomies (code «0») of the qualitative feature «management decision stage» and «not limited» (code «1») of the qualitative feature «the possibility of introducing innovations in various areas of the organisation» (Pic. 1) involves the allocation of such a block of organisation marketing principles as «managing the insufficiency of something in the market» (code «01»), which will also be further structured into components.

One of the factors that determine the reliability of an organisation is the behaviour of the consumer, who, for example, depending on solvency, can sharply reduce the quantity and quality of purchased products and/or services, or vice versa, increase their quantity and quality, while feeling the lack of something in its various forms. Under these conditions, the organisation, as a rule, seeks to diversify the range of products and/or services, up to the allocation of relevant departments in the production and organisational structures. The task of identifying the main options for insufficiency of something with the consumer of products and/or services, depending

Consumer properties of products and/or services		
Properties (parameters) of consumer's demand	Stable (0)	Typical (0) Unique (1)
	Unstable (1)	Necessity (0100)
		Habit (0101)
		Need (0110)
		Value (0111)

Pic. 3. Classification of lack of something as for consumer of products and/or services [22].

on its behaviour in the market, was solved by A. P. Tyapukhin and E. A. Tarasenko [22] (Pic. 3) based on the following qualitative features and their dichotomies: «consumer properties of products and/or services»: «typical» (code «0») and «unique» (code «1»); «properties (parameters and characteristics) of consumer demand for products and/or services»: «stable» (code «0») and «unstable» (code «1»).

As follows from Pic. 3, value (code «0111») differs from need (code «0110») by the unique consumer properties of products and/or services, and from habit (code «0101») by instability of properties (parameters and characteristics) of demand for products and/or services [22]. Let us note that the first two digits of the four-digit code «01» mean «lack of something as perceived by the consumer of products and/or services» (Pic. 1). The insufficiency options justified above (Pic. 3) lay the foundation for designing organisation management principles at the level of department heads of the second functional director of the organisation or marketing director, reporting respectively to the general director.

3. The combination of the «introduction» dichotomies (code «1») of the qualitative feature «management decision stage» and «limited» (code «0») of the qualitative feature «the possibility of introducing innovations in various areas of the organisation» (Pic. 1) suggests the allocation of such a block of principles as «organisational culture management» (code «10»).

Since this article focuses on sustainability and sustainable development, organisational culture should be evaluated from the position of at least three of its basic aspects: economic, social, and environmental aspects. The author takes the liberty of asserting that the above aspects can be substantiated in a slightly different way than before, namely with the help of such

qualitative signs of the organisation’s management principles and dichotomies as «the type of resources attracted and processed by the organisation»: «natural (material) resources» (code «0») and «human (information) resources» (code «1»); «priorities of organisational culture»: «consolidation and maintenance of the achieved results» (code «0») and «creation of prerequisites for long-term development» (code «1») (Pic. 4).

As follows from the content of Pic. 4, in addition to the economic, social, and environmental aspects of organisational culture, one can single out its intellectual aspect, which concerns, first, creating value for the end consumer of products and/or services (Pic. 3), as well as ensuring survivability of the organisation (Pic. 2). Note that the first two digits of the four-digit code «10» mean «organisational culture» (Pic. 1). The variants of organisational culture justified above (Pic. 4) lay the foundation for designing the principles of managing the organisation at the level of department heads of the third functional director of the organisation, reporting respectively to the general director.

4. The combination of the «introduction» dichotomies (code «1») of the qualitative feature «management decision stage» and «not limited» (code «1») of the qualitative feature «the possibility of introducing innovations in various areas of the organisation» (Pic. 1) suggests the allocation of such a block of organisation management principles as «organisation capacity management» (code «11»), which in the future will also be structured into components.

If we take as a basis almost any organisation focused on making a profit and other activities, we can distinguish in its production structure divisions that perform various functions and solve only their inherent tasks. This refers as well to transport and logistics organisations. This aspect of the study involves structuring of



	Type of the organisation's resources	
	Natural (material) (0)	Human (information) (1)
Consolidation and maintenance of the achieved results (0)	Economic aspect (1000)	Social aspect(1001)
Priorities of organisational culture		
Creation of prerequisites for long-term development (1)	Environmental aspect (1010)	Intellectual aspect (1011)

Pic. 4. Classification of aspects of organisational culture [developed by the author].

	Type of the organisation's resources	
	Natural (material) resources (0)	Human (information) resources (1)
Creation and growth (0)	Technological (1100)	Innovative (1101)
Stage of formation and development of the organisation's capacity		
Implementation and dissemination (1)	Logistics (1110)	Marketing (1111)

Pic. 5. Classification of the organisation's potential [developed by the author].

management principles according to the type of capacity implemented by the departments of the organisation. At the same time, it should be borne in mind that weakening of the capacity of a single unit has an impact on the results of the whole organisation. That is why sustainable capacity development management, controlled by the CEO and functional directors of the organisation, is necessary.

To determine the functional types of the organisation's capacity, it is advisable to use the following qualitative features: «type of resources attracted and processed by the organisation»: «natural (material resources)» (code «0») and «human (information) resources» (code «1»); «the stage of formation and development of the organisation's capacity»: «creation and growth» (code «0») and «implementation and dissemination» (code «1»). The joint use of these features and dichotomies makes it possible to distinguish four types of organisation capacity: technological (code «00»), innovative (code «01»), logistics (code «10») and marketing (code «11») capacity (Pic. 5).

As follows from the content of Pic. 5, the innovative potential (code «1101») is associated with the intellectual aspect (code «1011») of organisational culture (Pic. 4), and the marketing potential (code «1111») determines the effectiveness of the principles of managing the insufficiency of something in the market (Pic. 3). It is to note that the first two digits of the four-digit code «11» mean «the capacity of the

organisation» (Pic. 1). The variants of the organisation's capacity justified above (Pic. 5) lay the foundation for designing the principles of organisation management at the level of department heads of the fourth (if necessary) functional director of the organisation, reporting respectively to the general director.

Thus, it can be concluded that the CEO is responsible for all principles of managing sustainability of the organisation; functional directors ensure the effectiveness of blocks of management principles (Pic. 1); heads of departments supervise the basic principles of managing sustainability of the organisation, formed based on Pics. 2–5, the content of which allows moving from the components of the blocks to specific management principles. The solution to this problem is reflected in Table 1.

Information in Table 1 is based on the logic of achieving the characteristics of the components of management blocks (Pic. 2) by defining in detail of the content of not only local, but also global managerial impacts on the organisation in accordance with the competencies of the heads of departments, functional directors, and the general director of the organisation. To form a holistic impression on the application of principles of managing sustainability of the organisation presented in Table 1, it is advisable to refer to the content of Pic. 6.

This picture shows not only the content of the designed principles, but also shows the relationship of the powers of the heads of

Table 1

Substantiation of the content of the principles of managing sustainability of the organisation based on the content of Pics. 2–6 [developed by the author]

Code	Component	Principle of sustainability management
1	2	3
<i>Block of principles «Reliability of the organisation»*</i>		
0000	Sustainability	Monitoring and crisis management
0001	Flexibility	Diversification and development of competitive advantages
0010	Viability	Business restructuring and distressed asset management
0011	Survivability	Global partnerships and strategic management
<i>Block of principles «Insufficiency of something in the market»</i>		
0100	Necessity	Satisfaction of basic human needs
0101	Habit	Creating a favourable environment for consumption of products and/or services
0110	Need	Ensuring human well-being
0111	Value	Focus on sensations, impressions and experience of the consumer
<i>Block of principles «Organisational culture»</i>		
1000	Economic aspect	Cost and time management in value chains
1001	Social aspect	Social partnership and conflict management
1010	Environmental aspect	Preservation of the environment and environmental management
1011	Intellectual aspect	Training, encouraging initiative and creativity
<i>Block of principles «The capacity of the organisation»</i>		
1100	Technological potential	Aggregate production planning with a variable rhythm and a changing number of employees
1101	Innovative potential	Creation of novelties, development of new technologies and materials, development of new markets
1110	Logistics potential	Elimination of cross-functional barriers, single-piece flow management
1111	Marketing potential	Ensuring availability of products, services, and after-sales service

*Blocks of organisation management principles are presented in Pic. 1.

departments and functional directors, ensuring stability of the organisation based on those principles. Let's take as an example the principle with the code «1100» («Aggregate production planning with a variable rhythm and a changing number of employees»). In Pic. 6 it can be seen that this principle is implemented in conjunction with the principle with the code «1110» («Elimination of interfunctional barriers, management of the flow of single products»), since the general guideline for these principles is a qualitative sign and a dichotomy: «type of organisation's resources: natural (material) resources».

At the same time, the principle with the code «1100» must be carried out in conjunction with the principle with the code «1101» («Creation of new products, development of new technologies and materials, development of new markets»), since both principles presuppose such a stage of formation and development of the organisation's potential as «creation and extension» or dichotomy. The same can be said about the principles with codes «1101», «1110» and «1111» of the block «Management of the capacity of the organisation», for which the functional director is responsible, reporting to the general director.



Block of principles A (0000) «Reliability of the organisation»		Block of principles B (0100) «Lack (insufficiency) of something»	
Trends of changes in capacity of the organisation as a result of negative impact thereon Restored Not restored		Consumer properties of resources Typical Unique	
Monitoring and anti-crisis management (0000)	Diversification and development of competitive advantages (0001)	Satisfaction of basic human needs (0100)	Creation of a favourable environment for consumption of products and/or services (0110)
Business restructuring and distressed asset management (0010)	Global partnership and strategic management (0011)	Ensuring human welfare (0110)	Orientation on feelings, impressions and consumer experience (0111)
Management of cost and time in value chains (1000)	Social partnership and conflict management (1001)	Aggregate production planning with variable rhythm and changing workforce (1100)	Creation of innovations, development of new technologies and materials, development of new markets (1101)
Preservation of the environment and environmental management (1010)	Training, encouraging initiative and creativity (1011)	Elimination of cross-functional barriers, single-piece flow management (1110)	Ensuring the availability of products, services and after-sales service (1111)
Natural (material)	Human (information)	Natural (material)	Human (information)
Type of organisation's resources		Type of organisation's resources	
Block of principles D (1000) «Organisational culture»		Block of principles C (1100) «Capacity of the organisation»	

Pic. 6. Classification of the principles of organisation management [developed by the author].

Relationships between the functional directors of an organisation can be presented in a similar way. To establish them, it is necessary to refer to the contents of Pic. 1. This picture shows that the functional director responsible for the block of management principles with the

code «11» («Management of the organisation's capacity») interacts with the functional director responsible for the block with the code «01» («Management of the insufficiency of something»), focusing on a qualitative sign and dichotomy «the possibility of introducing

Table 2

Comparison of Sustainable Development Goals (United Nations) and organisational management principles [developed by the author]

Code	Sustainable Development Goals(United Nations)	Organisational Management principles
1	2	3
0000	To make cities and human settlements inclusive, safe, resilient and sustainable	Monitoring and anti-crisis management of the organisation
0001	—	Diversification and development of competitive advantages of the organisation
0010	—	Business restructuring and management of organisation's distressed assets
0011	To strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development ...	Global partnership and strategic management of the organisation
0100	To end hunger, achieve food security and improved nutrition and promote sustainable agriculture	Satisfaction of basic human needs by the organisation
0101	To ensure the transition to sustainable consumption and production patterns	Creation of a favourable environment for consumption of products and / or services
0110	To ensure healthy lifestyles and promoting well-being for all at all ages	Ensuring Human Welfare
0111	—	Focus on sensations, impressions and experience of the consumer
1000	To promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all. To ensure access to affordable, reliable, sustainable and modern energy for all	Cost and time management in value chains
1001	To reduce inequalities within and among countries. To promote peaceful communities, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels.To achieve gender equality and empower all women and girls	Social partnership and conflict management
1010	To take urgent action to combat climate change and its impacts.To conserve and sustainably use the oceans, seas and sources for sustainable development.To protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Environmental conservation and environmental management
1011	Quality education and lifelong learning opportunities for all	Training, encouraging of the initiative and creativity of the organisation's personnel
1100	To ensure the transition to rational patterns of consumption and production. To build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Aggregate planning of production with a variable rhythm and a changing number of employees
1101	To build resilient infrastructure, promote inclusive and sustainable industrialization and innovation	Creation of novelties, development of new technologies and materials, development of new markets
1110	—	Elimination of cross-functional barriers, single-piece flow management
1111	To build resilient infrastructure, promote inclusive and sustainable industrialization and innovation	Ensuring the availability of products, services, and after-sales service



innovations in various areas of the organisation's activities: unlimited». The same can be said about his interaction with the functional director responsible for the unit with the code «10» («Organisational culture management»), which have in common a qualitative feature and a dichotomy: «the stage of management decision: implementation or development, coordination and implementation».

Based on this, it can be stated that the designed principles of sustainability management are adapted to a typical hierarchically linked organisation management system, in which not only the elements are justified, as in the prototypes of previously created management principles, but also the relationship between them are also well grounded. In other words, the proposed methodology for designing management principles should ensure the achievement of a synergistic effect from the interaction of officials and their subordinates within the framework of their competencies and powers. This methodology involves the exclusion of a subjective approach to substantiating conclusions and recommendations in cases where it is impossible to measure and evaluate the quantitative parameters of the research object and it is necessary to operate with the qualitative characteristics of this object and the dichotomies, including when structuring the object, if this is part of the research objectives.

Analysis of the content of Table 2 shows that all seventeen goals and objectives developed by the United Nations [7] are considered when substantiating the content of the proposed principles for managing sustainable development of an organisation. At the same time, four principles, although not directly related to these goals and objectives, but in general do not contradict them, considering the preferences of the organisation in a competitive market.

Summing up the results of the study, one can note the characteristic features of the principles of organisation sustainability management proposed by the author, such as: selectivity depending on the factors of the external and internal environment of the organisation; compatibility in their implementation by departments of the organisation; hierarchy; interconnectedness; universality; readiness for digitalisation, as well as for structuring and harmonisation across management levels and between links in the supply chain. In case that some of the used relevant qualitative features

turn out to be unclaimed, new relevant qualitative features and their dichotomies can be identified, thus offering a possibility to design a new version of management principles that will be understandable and accessible for implementation by decision makers and those responsible for performing them, which, in author's opinion, will significantly mitigate the problem of ensuring the sustainability and sustainable development of the organisation at all its levels.

CONCLUSIONS

Management principles constitute an important component of the organisation's management system and one of the tools of implementation of its strategy. Dynamic changes in the factors of the external and internal environment of the organisation, in particular, the restraints associated with countering the COVID-19 pandemic, constantly provoke their adjustment, replacement or design. At the same time, a managerial situation is possible when an organisation is forced to use management principles that, it would seem, have ceased to be relevant. One of the most important factors predetermining the design of new principles of organisation management is orientation of the world community towards sustainability and sustainable development, which provides for meeting the needs of the current generation without compromising the needs of future generations. Many aspects of development and implementation of a new vision of the world order are still incomprehensible, not developed, and therefore are debatable. Within the framework of the topic of this article, a discussion on the following aspects of improving management systems of organisations and their associations with centralised and decentralised forms of management could be very fruitful:

- Expansion and addition of approaches to designing of the principles of organisation management, depending on the strategy of its development.
- Clarification of methods for coordinating and structuring the principles of management of organisations and their associations regarding levels of management, by its functions, by typical requirements of end users of products and/or services; by types of strategies; by the main sections of management and its types, etc.
- Development of principles for managing value chains and networks, supplies and requirements, as well as a methodology for

designing principles for managing their links, from the primary link to the end consumer of products and/or services.

- Development of recommendations for assessing the efficiency and effectiveness of organisational management systems, as well as management principles for the purpose of their timely updating, replacement, or optimisation.

- Creation of prerequisites for solving two seemingly mutually exclusive tasks: creating value for end consumers and introducing the theory and methodology of sustainable marketing, etc.

Also important but rather practical is the issue of adaptation of the suggested general model of management principles to the features of activity of organisations and associations of different sectors of the economy and industries, including transport.

REFERENCES

1. Fayol, H. General and Industrial Management. Paris, Institute of Electrical and Electronics Engineering, 1916, 142 p.

2. Taylor, F. W. The principles of Scientific Management. Harper and Brothers Publishers, New York, London, 1919, 155 p.

3. Deming, W. E. Out of the crisis. Massachusetts Institute for Technology Press: Cambridge, MA, 1982, 507 p. ISBN 9780262541152.

4. Drucker, P. The practice of management. New York, Harper & Row, 1954, 416 p.

5. WCED. World Commission on Environment and Development. Our Common Future. Oxford University Press, New York, USA, 1987, 383 p. [Electronic resource]: <http://www.un-documents.net/our-common-future.pdf>. Last accessed 30.03.2022.

6. Linton, J. D., Klassen, R., Jayaraman, V. Sustainable supply chains: an introduction. *Journal of Operation Management*, 2007, Vol. 25, No. 6, pp. 1075–1082. DOI: <https://doi.org/10.1016/j.jom.2007.01.012>.

7. United Nations. Transforming our world: the 2030 agenda for sustainable development, 2015. [Electronic resource]: <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>. Last accessed 30.03.2022.

8. Albers, H. H. Principles of Management: A Modern Approach. 3rd ed. New York, London, Sydney, Toronto: John Wiley, & Sons, Inc., 1969, 702 p. ISBN 0471019178, 9780471019176.

9. Murugan, M. S. Management Principles and Practices. New York, New Age International, 2007, 520 p. ISBN 8122415067, 9788122415063.

10. Witcher, B. J., Chau, V. S. *Strategic Management: Principles and Practice*. Andover, Cengage Learning, 2010, 352 p. ISBN 1844809935, 9781844809936.

11. Kotler, P., Armstrong, G. Principles of marketing. 14th ed., Pearson Education, Inc., publishing as Prentice Hall, 2011. [Electronic resource]: <https://nit-edu.org/wp-content/uploads/2021/09/Principles-of-Marketing-Kotler-Armstrong.pdf>. Last accessed 30.03.2022.

12. de Casanove, A., Morel, L. Innovation management principles from ISO 50500 series. United Kingdom, *Aston: International Association for Management of Technology IAMOT*, 2018, 16 p. [Electronic resource]: https://www.wu.ac.at/fileadmin/wu/d/cc/npocompetence/14_Coach_Indeed_Content/COACH-Website/10_InnovationCrisis_AddRead_IAMOT2018_paper_97.pdf. Last accessed 30.03.2022.

13. Wisner, J. D., Tan, K. C., Leong, G. K. Principles of Supply Chain Management: A Balanced Approach. *Mason, OH: Cengage Learning*, 2012, 572 p. [Electronic resource]: <http://dspace.vnbrims.org:13000/jspui/bitstream/123456789/4491/1/Supply%20Chain%20Management.pdf>. Last accessed 30.03.2022.

14. Godwin, A., Handsome, O. E., Ayomide, W. A., Enobong, A. E., Johnson, F. O. Application of the Henri Fayol Principles of Management in Startup Organisations. *Journal of Business and Management*, 2017, Vol. 19, Iss. 10, pp. 78–85. [Electronic resource]: <https://www.iosrjournals.org/iosr-jbm/papers/Vol19-issue10/Version-4/K1910047885.pdf>. Last accessed 30.03.2022.

15. Schein, E. H. The Role of the Founder in the Creation of Organisational Culture. Massachusetts Institute of Technology. Sloan School of Management, 1983, 34 p. DOI: 10.1111/j.1741-6248.1995.00221.x.

16. Touma, J. Theories X and Y in Combination for Effective Change during Economic Crisis. *Journal of Human Resource and Sustainability Studies*, 2021, Vol. 9, pp. 20–29. [Electronic resource]: https://www.scirp.org/pdf/jhrss_2021022014443100.pdf. Last accessed 30.03.2022.

17. Daily, B. F. Su-chun, Huang. Achieving Sustainability through Attention to Human Resource Factors in Environmental Management. *International Journal of Operations & Production Management*, 2001, Vol. 21 (12), pp. 1539–1552. [Electronic resource]: <https://www.emerald.com/insight/content/doi/10.1108/01443570110410892/full/html>. [restricted access].

18. Cooper, M. C., Lambert, D. M., Pagh, J. D. Supply Chain Management: More than a New Name for Logistics. *The International Journal of Logistics Management*, 1997, Vol. 8 (1), pp. 1–14. [Electronic resource]: <https://drdougslambert.com/wp-content/uploads/2020/05/Cooper-Lambert-and-Pagh-SCM-IJLM-1997.pdf>. Last accessed 30.03.2022.

19. Bailey, K. D. Typologies and taxonomies: An introduction to classification techniques. Sage Publications, Inc., London, 1994, 90 p. ISBN 0803952597, 9780803952591.

20. Ansoff, H. I. Strategies for Diversification. *Harvard Business Review*, 1957, Vol. 35, pp. 113–124. [Electronic resource]: https://www.casrilanka.com/casl/images/stories/2017/2017_pdfs/sab_portal/course_material/strategies_for_diversification.pdf. Last accessed 30.03.2022. ●

Information about the author:

Tyapukhin, Alexey P., D.Sc. (Economics), Professor, Director of Orenburg Branch of the Institute of Economics of the Ural Branch of the Russian Academy of Sciences, Orenburg, Russia, ptyapuhin@mail.ru.

Article received 01.04.2022, approved 28.04.2022, accepted 11.05.2022.

