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METHODOICAL APPROACH TO DETERMINE THE PERSONNEL RESISTANCE IMPACT ON THE STRATEGIC CHANGE POTENTIAL AT ENTERPRISE

***Summary.** The complex conditions of domestic enterprises functioning require the changes introduction in its activities, which, depending on the goals, are either strategic or organizational in nature. Regardless of the type of changes, their implementation affects all processes of the enterprise, directly influencing the staff work. As a result, there may be resistance to change, prevention which is one of the most important tasks in ensuring the change implementation effectiveness.*

The purpose of the study is to substantiate a methodical approach to determine the impact of staff resistance on the strategic change potential at the enterprise.

A methodical approach is developed to determine the interdependence between staff resistance and the strategic change potential of an enterprise, which consists of the following stages: 1) to identify possible causes of staff resistance to strategic change in the enterprise; 2) the quantitative assessment of staff resistance to strategic change through expert survey; 3) the calculation

of the integral index of the strategic change potential in the enterprise in terms of its components using taxonomic analysis; 4) identifying the relationship between the staff resistance level and the strategic change potential through the trend models development, which will allow for further forecasting.

It is suggested to estimate the level of personnel resistance to change according to a formula that takes into account 4 types of personnel in response to changes: innovative, implementation-oriented, reactive, conservative.

The quantitative assessment of the level of staff resistance to strategic change was carried out by means of an expert survey, and an integral indicator of the strategic change potential in terms of its components was calculated, using a taxonomic analysis for the studied enterprises. Trend models have been built to identify the relationship between staff resistance and the strategic change potential. It is determined that the best level of dependency description is given by the polynomial function. It is proved that increasing the level of personnel resistance to strategic changes adversely affects the integral indicator of the strategic change potential.

Key words: *resistance to change, organizational change, strategic change potential, staff readiness, trend model.*

Formulation of the problem. Nowadays the vast majority of Ukrainian industrial enterprises are operating in an unstable socio-economic and political environment and exhibiting a significant decline in production and are in a very difficult position. At the same time, their main task on the path of Ukraine's integration into the world structures is to direct production to the conditions of domestic and foreign markets, transition to world standards of product quality etc. This requires a significant revision of the existing approaches to the production management system in the sense of forming substantially new trends in enterprise development. Particular attention should be paid to the formation

and practical implementation of an effective and efficient system of strategic change management.

The analysis of the nature of planned changes of industrial enterprises shows that most often they concern its structure, introduction of new technologies of work, as well as creation of new directions of activity (new product) and innovations in the system of material incentives. Effective implementation depends on the intensity of the staff's resistance to change, especially if the changes are related to the technical and technological updating of their work, the introduction of a different style of management and corporate culture. In this regard, developing approaches to identifying the link between staff resistance and the strategic change potential in the enterprise, as well as finding ways to overcome resistance to change, are key to its ongoing operations.

Analysis of recent research and publications. The issues research of overcoming the personnel resistance to strategic changes in the context of their management is devoted to the scientific works of famous foreign and domestic scientists, among them: I. Adizes [1], T. Bazarov [2], R. Kegan [3], L. Lahey [3], E. Naumtseva [4], P. Neves [7], M. Sycheva [2], H. Harrington [6] and others. At the same time, further research requires aspects of determining the interdependence between the level of staff resistance to possible innovations and the strategic change potential, the study of which, in turn, is indispensable in the framework of ensuring innovative development of the enterprise. In this regard, the purpose of the article is to substantiate a methodical approach to determining the impact of staff resistance on the strategic change potential in the enterprise.

Research results. A thorough study of the scientific background allows us to ascertain the unresolved issues of ensuring the effectiveness of strategic change in enterprises, one of which is the lack of a methodical approach to identify the relationship between the level of staff resistance to strategic change and the potential of these changes in the enterprise. It is the study of change

potential that will help to identify not only the opportunities for enterprise development but also the conditions for ensuring the effectiveness of strategic change. Therefore, it is proposed to realize the interdependence between the personnel resistance and the strategic change potential of the enterprise through the use of methodical approach (fig. 1), which consists of the following consecutive steps: 1) identify possible causes of staff resistance to strategic change in the enterprise; 2) quantitative assessment of staff resistance to strategic change through peer review; 3) calculation of the integral index of the strategic change potential in the enterprise in terms of its components using taxonomic analysis; 4) identifying the relationship between the level of staff resistance and the strategic change potential through the development of trend models, which will allow for further forecasting.

The developed scheme of methodical approach will allow to analyze the real state of personnel resistance to strategic changes in the enterprise with the possibility of identifying the causes of resistance; to evaluate the enterprise change potential in terms of such components as financial-investment, resource, production-technical, technological-innovative, human, intellectual, information-communication, marketing, management; determine the impact of staff resistance to strategic change on the change potential in the enterprise, which will ultimately provide an opportunity to identify systemic causes of impaired effective functioning of the enterprise.

The first step of the proposed methodical approach is to identify possible causes of staff resistance to change in the enterprise. Thus, one of the reasons for resisting strategic change, according to scientists [5], is intolerance to uncertainty or impatience to change, which implies the rejection of everything new, the desire for conservatism in judgments, decisions and actions. On the other hand, uncertainty tolerance contributes to successful change adoption and implies a desire for innovation and originality.

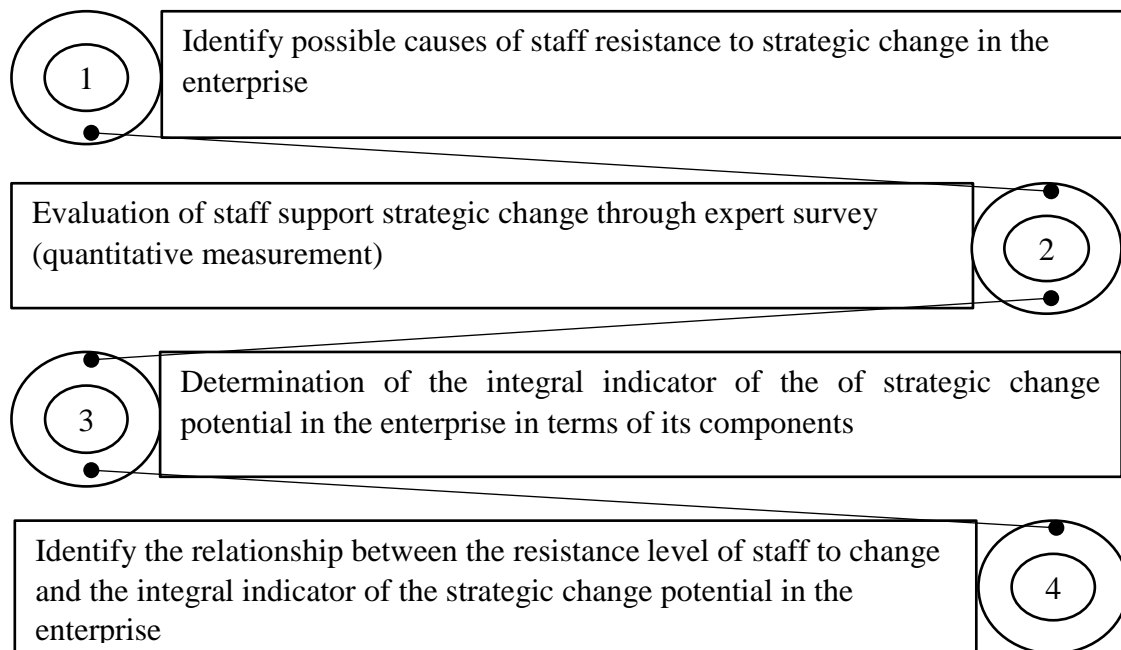


Fig. 1. Outline of a methodical approach to determining the impact of resistance to strategic change on the strategic change potential in the enterprise

In E. Naumtseva's work [4], the relationship between job satisfaction and attitude towards change is explored: if staff are positive about their work, they like it, the more they identify with it, the more they are ready to accept change. Workers with low tolerance to uncertainty usually do not show commitment to their work and enterprise in the situation of changes, they evaluate their mostly negative and resist innovation.

One of the key aspects of understanding the causes of staff resistance to strategic change is identifying precisely the group of reasons (individual, group or organizational) that is fundamental to the emergence of resistance. The practice of industrial enterprises confirms the predominance of individual and organizational reasons for resistance to change. Individual statements include: inertia, unwillingness to overcome difficulties, and take on additional responsibilities; fear of imaginary or real negative consequences; lack of respect and trust in the people making the changes, etc. Organizational reasons for resistance to change include: an imperfect organizational communication

system; features of organizational culture; lack of a clear enterprise development strategy; authoritarian management style in organizational change. As for group causes of resistance to change, which are less significant from the point of view of company management, they include mainly informal rules of conduct and certain group rules and the threat of unit power loss.

It should be noted that strategic changes are perceived by staff primarily as innovations for them, which are inextricably linked to increased tensions and increased experiences. In this regard, it can be argued that the individual causes of resistance to change (especially in terms of socio-psychological aspects) are inseparably linked to the response style of staff to possible uncertainties. Against this background, it is proposed to assess the personnel resistance level to strategic change through expert questioning, namely using a special questionnaire developed by T. Bazarov and M. Sycheva [2]. The peculiarity of this questionnaire is the correlation of response styles to changes with the existing classification of attitude types to strategic change and taking into account the advantages of other known methods of assessing resistance to change, including: tolerance for uncertainty; the method of measuring the overall innovation disposition; Casey's questionnaire; activity style questionnaire.

It should be noted that the type of reaction to change is understood as the predominance of human interaction certain ways with the situation of change, which is expressed in emotional, cognitive and behavioral reactions. According to this technique, there are four types of human response to change: conservative; reactive; implementation-oriented; innovative.

A questionnaire method was used to identify the type of change response, which includes a set of statements that correspond to a particular type. As a result, the highest score corresponds to the most pronounced type of change response [2].

As a result of the obtained data on determining the personnel reaction type to possible changes in the enterprise, it becomes possible to determine the personnel resistance level to organizational changes by the following formula:

$$R = \frac{N_i + N_{rr}}{N_r + N_c} \times 100\%$$

where R – is the level of staff resistance to strategic change;

N_i – the staff number of innovative type of change reaction;

N_{rr} – the staff number focused on implementing the type of response to change;

N_r – the number of reactive-type personnel responding to change.

N_c – number of conservative-type staff responding to change.

The explanation of the criterion for assessing the staff resistance level to strategic change is as follows: if R is more than 100%, then staff resistance is high, strategic changes can lead to the destabilization of the state of the enterprise and reduce its effectiveness; if R is less than 100%, then staff resistance is low, strategic change is targeted and successful.

Determining the integral indicator of the strategic change potential in an enterprise in terms of its components is the next important step in the methodical approach context. The task of assessing the strategic change potential is to determine their possible effectiveness.

Taking into account the existing approaches to assessing the potential for change and exploring the specificities of their application in the enterprise, it is determined that the strategic change potential is a set of available resources at the enterprise, which are used to meet the current goals of the enterprise and can be used with the possible attraction of additional resources to achieve the strategic goals of the activity. In addition to these resources, the potential includes dynamic enterprise abilities that combine organizational capabilities, staffing competences and core business competencies.

The calculation of the generalized indicator of the strategic change potential in the studied enterprises was carried out on the basis of its components study (financial-investment, resource, production-technical, technological-innovation, human, intellectual, information-communication, marketing and management) using taxonomic analysis arithmetic.

The purpose of the next step is to identify the relationship between the personnel resistance level to change and the integral indicator for the strategic change potential in the enterprise. For this purpose, the method of trend projection using linear, polynomial, power, logarithmic and exponential approximation (types of trend line) was implemented. The application of this approach is possible for every enterprise of agricultural machine-building, in addition to not only identifying the link between indicators but also making predictions, which will facilitate the more correct use of tools to overcome possible change resistance in the context of the relevant mechanism implementation.

Therefore, the dotted diagram was constructed for each studied enterprise of agricultural machine-building and a trend line was added indicating the equation and the magnitude of the approximation reliability in MS Excel. In addition all types of the trend lines, as mentioned above, were subsequently constructed in order to obtain the most accurate approximation and, accordingly, the most accurate prediction. Generalization of the obtained results allows us to group them (table 1) for holistic visualization.

Analyzing the obtained data, we emphasize that the highest accuracy of approximation for all investigated agricultural machinery enterprises is achieved in the polynomial trend model.

It should be noted that the polynomial approximation is used to describe the quantities that alternately increase and decrease. According to the table, the values of the coefficient of determination are close to one in all enterprises, with

the increase in the level of staff resistance to strategic change adversely affecting the integral index of strategic change potential.

Table 1

The generalization of influence determination results of personnel resistance level to changes on integral index of the enterprise strategic change potential with indication the function type and determination coefficient

Enterprise	Kind of trend line		
	exponential	logarithmic	polynomial
PJSC «El`vorti» (PJSC «Chervona zirka»)	$y = 1,8991e^{-1,434x}$ $R^2 = 0,5886$	$y = -0,695\ln(x) + 0,4429$ $R^2 = 0,5922$	$y = 51,785x^2 - 51,609x + 13,693$ $R^2 = 0,9544$
PJSC «Kharkiv Tractor Plant»	$y = 1,2936e^{-1,33x}$ $R^2 = 0,8453$	$y = -0,372\ln(x) + 0,4204$ $R^2 = 0,8503$	$y = 18,104x^2 - 13,061x + 3,1559$ $R^2 = 0,9246$
PJSC «Zavod im. Frunze»	$y = 15,158e^{-5,333x}$ $R^2 = 0,8927$	$y = -2,742\ln(x) - 0,8441$ $R^2 = 0,8902$	$y = 128,65x^2 - 138,1x + 37,936$ $R^2 = 0,9924$
PJSC «XELZ «Ukrelektromash»	$y = 2,054e^{-3,382x}$ $R^2 = 0,7094$	$y = -0,736\ln(x) - 0,1375$ $R^2 = 0,7347$	$y = 7,4842x^2 - 6,6852x + 2,0853$ $R^2 = 0,7357$
PJSC «Lozivs`ky`j zavod «Traktorodetal`»	$y = 2,447e^{-2,268x}$ $R^2 = 0,8951$	$y = -0,902\ln(x) + 0,1615$ $R^2 = 0,8916$	$y = 26,238x^2 - 23,366x + 6,1284$ $R^2 = 0,9036$
PJSC «Zavod agrotexnichny`x mashy`n»	$y = 2,5102e^{-2,754x}$ $R^2 = 0,3959$	$y = -0,914\ln(x) - 0,0003$ $R^2 = 0,3693$	$y = -370,35x^2 + 235,47x - 36,279$ $R^2 = 0,7624$
PJSC «Odes`ky`j zavod sil`s`kogospodars`kogo mashy`nobuduvannya»	$y = 1,077e^{-0,962x}$ $R^2 = 0,122$	$y = -0,157\ln(x) + 0,6367$ $R^2 = 0,135$	$y = 273,67x^2 - 94,824x + 9,097$ $R^2 = 0,7724$
PJSC «Nizhy`ns`ky`j zavod sil`s`kogospodars`kogo mashy`nobuduvannya»	$y = 1,6923e^{-2,239x}$ $R^2 = 0,6098$	$y = -0,553\ln(x) + 0,2009$ $R^2 = 0,6129$	$y = 1007,5x^2 - 524,64x + 69,076$ $R^2 = 0,995$
OJSC «Kolomy`yasil`mash»	$y = 2,3e^{-3,611x}$ $R^2 = 0,9978$	$y = -0,844\ln(x) - 0,238$ $R^2 = 0,9979$	$y = 93,148x^2 - 51,568x + 7,9953$ $R^2 = 0,9999$
OJSC «Chortkivs`ky`j zavod «Agromash»	$y = 1,1361e^{-1,499x}$ $R^2 = 0,7628$	$y = -0,264\ln(x) + 0,4155$ $R^2 = 0,7421$	$y = -9,3382x^2 + 3,0949x + 0,6$ $R^2 = 0,8151$

Explanation: y – a generalized integral index of the strategic change potential; x – the personnel resistance level to organizational changes; R^2 is the determination coefficient; for each enterprise, a trend line type is selected in bold, providing the highest accuracy of approximation.

Conclusions. Thus, the article proposes the methodical approach to determine the impact of staff resistance on the strategic change potential in the enterprise, which involves the implementation of the following steps: identifying possible causes of staff resistance to change in the enterprise; quantitative assessment of staff resistance to strategic change through expert survey; calculation of the integral index of the strategic change potential for the enterprise, taking into account its components and using taxonomic analysis; identifying the relationship between staff resistance levels and the potential for change by building trend models. The proposed models for each surveyed enterprise make it possible to more accurately determine the predicted level of the strategic change potential, taking into account the existing level of change resistance.

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