« Modernization catering establishments factory and improving the sector of service»

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In recent years in connection with the restructuring of the Republic and the free development of the economy, the modernization of the country, ensuring macroeconomic stability constant task of constant growth. This, in turn, is the basis of success in market economy, improving the forms of real estate, the drastic changes in the economy, with the share of gross domestic product in the of service and service. On these days catering service companies one is considered one of the most important activities of business and it is engaged in many organizations and private entrepreneurs. Development of public supply meets the demand of people on diet and nutrition. In this task, technical equipment catering plays a special role. They very in type, size and type of service rendered. However, not all meet modern requirements. Therefore, Catering should be updated with the technical and technological side.

Modernization of catering – this update enterprises, improvement, equipment for modern requirements, catering services, improving quality of service. Solution to these problems in more efficient foodservice, improving organizational and economic mechanisms, identification of opportunities, development of quality indicators for services catering. Important indicator of software service companies to provide services is a comprehensive modernization of their. In this important technical and technological modernization. Modernization of the enterprise is the first entry in the production of «new technology». In catering our country is now used different equipment. Study the issue of modernization of catering to the scientific, technical and methodological aspect is one of the urgent problems requiring special attention.

First criterion of services in service companies providing services is their comprehensive modernization. In this regard, technological upgrading of enterprises takes an important place. Technical modernization means the introduction of "new (the innovative) technology" in production is the first place.

"New technology" is the result of scientific and technological victories. In the country as compared to the previously known and a prototype or analog using this growing power production and meet the needs of society as a product of high interest.

Therefore, in the enterprise, where services are provided service to a new technology (and new technology), it need to look not only as a new product and a new object of exploitation, but also in a broader sense.

"New technology" if it is a new product in the producing company, the company becomes a new object of exploitation for user. Therefore, from time to time it need to change the pace, power resources of scientific and technological progress and clarify effective rate,

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which is considered a crucial vehicle for enhancing the process.

To increase the utilization of new technologies in production, of course, the following is important: the optimality of its key indicators, the quality of the structure and technology, the conditions of its implementation and condition are important.

When people talk about the technical condition of enterprise's technology, they understand the assessment of baseline production towards improved by comparison and relativity. The main mission is the relative improvement of products to comply with the intended functional definitions. However, you can learn planning techniques, quality improvement and compliance with international standards. If you are comparing products with the definition of customer value and social need, it need to be understood as the technical and economic level. That is, on the one way, if it is possible to assess the using and replacement of one another, and to compare it with the other way, the definition of social labor expended in its creation and using [1].

At the present, the regulations (GOST, OST, GOST 15467-79) in determining the technical state compares the main technical and economic indicators of production. However, this state indicates that the theory is not improved and this approach is often not possible to compare with samples issued abroad.

If the technical conditions of production economics indiscriminately is characterized as improved, the technical and economic level linked to economic performance and knowing the technical development, then we can compare the technical level with foreign models completely.

At present, in many cases, the method of the experiment, that is, in the opinion of the research team with the exchange of some other equipment remains without solution accurate measurement. Such a state, all the time does not address the issue properly and as a result profitability may be negatively affected.

This task on a large industrial power plants can be solved in modeling and measurements in different ways. Technical grade products in many parameters, seen as a function and is calculated. That is, the j - technical conditions of production is determined by the parameters[2] X_i (i=1,n):

$$K_{t\partial_j} = \varphi(x'_{ij}; x'_{i\acute{o}}; a_i) \quad (1)$$

Here: $x'_{i\acute{o}}$ – i- basic assessment rate;

a_i - i- Benefit's rate.

If you will assess the technical business degree, then it has to be taken into account and additional economic indicators. The coefficient of the technical and economic level will be:

$$K_{t\partial} = \psi(x'_{ij}; x'_{i\acute{o}}; З_{\ell j}; З_{\ell\acute{o}}) \text{,(2)}$$

Here: $З_{ij}$ - industry costs. (l=1,1)

In this mathematical model, the degree of technical and techno-economic level of each other is not opposed, but rather can make each other.

We believe in the assessment of modernization should use both models. Because, if the technical level shows enterprise's level , technical and economic level shows a direct link Profitability.

According to the calculation of technical and techno-economic level there are many views. In the calculation of the technical and economic level, we considered the most widely used method[3]:

- in determining of technical and economic indicators with the help of experts or other means should be to determine the coefficient advantage
- choose to calculate the main parameters, such as natural indicators (relative material compatibility, relative power consumption) and the estimated value of the relative, the relative real costs. As a general indicator of the degree of technical and economic performance discount is available to take the costs of labor;

- integrated technical and economic indicators of the degree to GOST 15467-70 and integrated quality approach each other;
- lagging performance of the new machine from the average degree of the industry with the expiration of a few years, is understood as the technical and economic level ;
- in determining the technical and economic level to determine the corresponding value of consumption to labor costs;
- in determining the degree of technical comparison with the world advanced manufacturing in this industry.

Similarly, in determining the degree of technical use different methods. For example, in industrial plants for the production of electronic equipment and instrumentation it offers following:

- the calculation using the generalized complex indices;
- when you are choosing integrated indicators with statistical indicators of primary bond or advantage[4];
- in determining the degree of technical $K_{td}(t+t)> K_{td1}$ (t) the conditions determined on the primary;
- in any device, equipment should be selected key parameters;
- for comparing the election and require basic equipment designs;
- If K_{td} overall, the expression to the primary indicators will be K_{TD} (x_i , a_i) and K_{td}, select the largest.[5]

In calculating the overall technical level when compared to the primary, the calculations will be more accurate, that is necessary to take the ratio K_{td} (x_{ij} , a_i) to K_{tdb} (x_{ij} , a_i). If the multiplicative form, K_{tdj} / K_{tdb} the additive function is as follows:

$$\sum_i a_i \frac{x'_{ij}}{x'_{iá}} \neq \frac{\sum_i a_i x'_{ij}}{\sum_i a_i x'_{iá}} \quad (3)$$

If (4) the device to model the total cost of technical degree, then for determine the actual value of the condition scale is required to be:

$$\frac{K_{tdir}}{K_{tdi\ell}} = const\forall \quad (4)$$

$$j = \overline{1,m}\,;\ r = \overline{1,R} \quad \ell = \overline{1,R}$$

Actually it performs the following relationship:

$$K^*_{tdi} = \alpha\, K_{tdir} = \beta\, K_{tdi\ell} \quad (5)$$

Here: - K_{tdi} generalized version of the actual value of the cost

-α β characterizing factor of scale models.

Analysis of constructed mathematical models of technical equipment and tool's degree showed that the implementation of the above conditions in relation to the widely used (especially in the sector instrument) qualimetry following models are available:

$$K_{td} = \sum_{i=1}^{n} a_i \cdot P_i \quad (6)$$

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$$K_{td} = \prod_{i=1}^{n} a_i \cdot P_i^{a_i} \qquad (7)$$

$$Ktd = \sqrt[n]{\prod_{i=1}^{n} a_i \cdot P_i} \qquad (8)$$

$$K_{td} = \sum_{i=1}^{n} a_i \cdot P_i^{a_i} \qquad (9)$$

$$K_{td} = \sqrt{\sum_{i=1}^{n} a_i^2 (1 - q_i)^2} \qquad (10)$$

(6) – (9) function(x_j) the absolute, the same (q_j) for primary relative indicators (10) function is only relative values for (6) functions to implement the terms of scaling is applied (4) is:

$$a_{ir} = \gamma \frac{x'_{ir}}{x'_{i\ell}} a_{i\ell} \qquad (11)$$

Here: γ - factor to calculate the value's total cost (K_{td}) of the real technical degree;

In many cases, if γ = 1, then $K_{td}=K^*_{td}$.

When you are selecting equipment recorded and dynamics of the technical degree (at the time), and therefore the dynamics of technical degree are determined.

To determine the dynamics of the technical degree of tools and equipment, that is, measuring of change in time use the following formula:

$$K_{тд}(t) = \frac{1}{1 + dexp[-\alpha(t - t_0)]} \qquad (12)$$

Here: if it is time $K_{td}(t_0) = K_{td0}$ will be factor

$$\partial = \frac{1 - K_{td0}}{K_{td0}} \qquad (13)$$

The same:

$$\alpha = \frac{\ell_n - \left(\frac{1 - K_{td1}}{K_{td1}}\right)}{t_1 - t_0} \qquad (14)$$

To determine and year (time) when a new instrument is used according to expert opinion is determined by K, this factor is determined , and it is concluded. Here sometimes not to improve the accuracy of expert judgment used indicators of multifactor models. For example, they may have the expression

For the group A: $K_{td}=0,98\cdot q_1^{0,27}\cdot q_2^{0,027}\cdot q_3^{0,039}\cdot q_4^{0,021}\cdot q_5^{0,018}$

R=0,798; δ=2,91% ; F_1 =8,41; F_2 =2,14

For the group B: $K_{тд}=0,90\cdot q_1^{0,042}\cdot q_2^{0,026}\cdot q_3^{0,018}$

R=0,93; δ=3,2% ; F_1 =10,1; F_2 =8,8

Here

• Group A: q_1 - Operating temperature; q_2 - voltage operating voltage range; q_3 - changing the voltage on the different states; q_5 - further term.

• For the group: q_1 - Measuring range; q_2 - Accuracy class; q_3 - the rate of change; R - the correlation coefficient; δ - standard deviation; F - coefficient Fisher.

From these it is clear that for each instrument or group of instruments Multivariate regression primary indicators will increase the accuracy of its calculations, but the calculation process is complicated and reduces its effectiveness.

In the same way, this method is used for microprocessors:

$$K_{td}=\left[\sum_{i=1}^{l}\beta_l\cdot\sum_{i=1}^{n}\alpha_{il}\frac{x_{il}}{x_{l\delta}}+\Delta S\right]K_{no} \quad (15)$$

Here:

β_l - Weighting element *l* of the microprocessor;

i - The primary indicator;

l - The element weight to factor;

$l=\overline{1,L_S}$ - The structure of a set S;

α_{il} - *i* - a primary indicator; *l* - weight to the element ratio;

ΔS - Peer-review the development of architecture set S;

K_{nos} - The degree of programmability of the set S.

In addition, there is a method of cluster analysis, it is calculated proximity indicators comparisons across groups dendogrammy.

We have considered the analysis of the various methods used to update tselyu equipment (tools, equipment, products, etc.) used in various industries.

The analysis shows that these methods are suitable only for individual or groups of similar, but their use within the plant equipment in this form for a complex and innovative updates and technical base leads to complex calculations.

Therefore, mainly for services with the use of industrial methods of calculations and computations technical performance of service companies offer the following:

1. Grouping base of the company on key indicators. Each group must calculate the $K_{тд}$ - coefficient of technical degree and their average - a mathematical value must be taken as a technical degree of business:

$$K_{ктd}=\left[\frac{\sum_{n=i}^{j}\overline{K_{tdij}}}{n}\right] \quad (16)$$

Here:

n - The number of groups;

3. $\overline{K_{tdij}}$ - The average value of the calculated level of technical objects (machinery, equipment, etc.) from each group.

$$K_{ktd} = \left[\frac{\sum_{n=i}^{j} K_{tdis}}{n} \right] \qquad (17)$$

Here:

n - the number of objects in the group.

K_{tdis} -coefficient of technical degree objects (tools, equipment, products, etc.). To calculate the chosen formula (4), and for the scale of the formula K_{tdij} (11), i.e validity will be considered the main indicators of computational objects (tools, equipment, products, and so do you).

4. To determine the dynamics of enterprise technical degree coefficient Ktd calculated on the basis of the formulas (13) and (14) will determine the dynamic coefficients.

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