AMERICAN JOURNALS
Open Access, Peer Reviewed Journals

American Journal of Technology and Applied Sciences
ISSN (E): 2832-1766 Volume 29, October - 2024

DESCRIPTION OF THE PROCESSES OF ORGANIZING THE ACTIVITIES OF THE STANDARDIZATION DEPARTMENT IN THE ORGANIZATION

Fattoev Firuz Farhod ogli
Senior Lecturer, Department of Metrology, Technical Regulation, Standardization and Certification, Tashkent State Technical University named after I.A. Karimov

A B S T R A C T	**K E Y W O R D S**
The organization's standardization system, standardization processes, management of the standardization service using the Markov chain, and the procedure for developing standards within the organization.	Standard, standardization, Markov chain, standardization service, experts, processes.

Introduction

Using the correlation-regression model of the relationship between the performance indicators of the standardization service (SS) in the organization, it is possible to develop a concept of the work activities of the members of the standardization department.

For this purpose, we can use an econometric model based on Markov chains, describing the process of reaching consensus, and a correlation-regression model of the dependence of the standardization service (SS) activity on the indicators. n Let the number of SS members participating in the process of discussing standards be, $S_0 = (s_0^1;...; s_0^n)$ Vector of preliminary opinions of SS members on the standard project. Here s_0^1- i- Expert opinion. Expert specialists in standardization S exchange opinions on vector values.

In this case, the opinion of each standardization expert may vary depending on the degree of trust in the opinion of another member of the CC, as well as on the level of trust in the opinion of the standardization expert.

It is necessary to make a firm decision with the active participation of all participants. In this regard i - the expert specialist j- the degree of reliability of the expert specialist's opinion $0 < p_{ij} < 1$($i = 1,...,n;\ j = 1,...,n,\ i \neq j$) It is assumed by marking i- the expert specialist is confident in himself. In this case, the expert specialist $0 < p_{ij} < 1$will most likely have his own opinion. Thus, the opinions of a number of expert specialists $n \times n$ by the product of $P_{n \times n} = (p_{ij})$ the dimensional P results in a square reliability matrix. In each row of the matrix, p_{ij} the sum of the probabilities is equal to 1, i.e. $\forall i \in \overline{1,n}\left[\sum_{j=1}^{n} p_{ij} = 1\right]$ is expressed and the process of coordination according to the opinions of the

members of the SS is determined. At the initial stage, to coordinate the conclusions of the expert specialist on standardization, the vector of opinions of the members of the SS is calculated according to the following formula: $S_1 = P_{n\times n} \times S_0 = (s_0^1,...,s_0^n)$

It is known that the development and discussion of a standard consists of several stages, taking into account k - After this stage, the vector of agreed opinions of experts is calculated using the following formula:

$$S_k = (s_k^1,...,s_k^n) = P_{n\times n} \times S_{k-1} = P^k \times S_0 \qquad (1)$$

If $P_{n\times n}{}^l$ if all rows of the matrix are the same l - stops at the stage. Mathematically, this means that l after the process, $P_{n\times n}$ the final reliability matrix F forms a matrix. The final F matrix does not change in the further process and, in turn, is a vector of the opinion of the expert specialist $S_l = S_0 P_{n\times n}^l = (s_l^1,...,s_l^n)$ and, accordingly, remains in its place. At the same time, according to the theory of group consulting of the process, the opinions of the expert specialists are stabilized, and thus multilateral agreement is ensured [3]. Based on the theory of Markov chains, for any vector of preliminary opinions of experts, P the final matrix F provides sufficient conditions for approaching the matrix P means the legitimate correctness of the matrix. In the activities of the SS, in some cases, individual members working in the SS must have their own opinion and trust the opinion of others, regardless of what the initial opinions of the members are. SS, if P the matrix is unchangeable and constant, that is, there are experts who have expressed their opinions, then mutual comprehensive agreement can be achieved through several repeated discussions between the participants of the CX. And this is the Markov matrix P final F approximation to the matrix.

It is necessary to eliminate the disagreements that arise in the standardization system and in quality management to ensure mutual multilateral agreement within the system considered by the standardization department. To achieve this, a significant amount of time and costs are required in the enterprise standardization system. Standardization services P approaching the matrix to the final S_0 since it does not depend on the vector of initial opinions, P it is necessary to manage the trust matrix. The SS should analyze all the negative aspects related to ensuring mutual agreement in its activities.

1. Management in a group of expert specialists. If a group of expert specialists includes a specialist with high management skills (in general, $(\exists i = \overline{1,n} \quad p_{ii} = 1)$ under the conditions $p_{11} = 1$ it can be assumed that as a result of confirming his opinion, the unchanged and resulting matrix F is unchanged and p_{11} the element is equal to one. It is extremely difficult to change the conclusion of the leading expert specialist.

2. The presence of several leaders in the expert-specialist group. The situation when there are several leading specialists in the SS P is characterized by a matrix in which the main diagonal contains ones. If there are several leaders in the SS, that is, anyone $n > 2$ in this case, this situation is fundamentally different from the previous one. The presence of one leader in the expert-specialist group ensures comprehensive agreement, even if it is of low quality. The presence of several leaders (leaders) in the CX leads to the impossibility of achieving comprehensive agreement.

3. Global dominance in a group of experts-specialists. If all the experts of the SS rate themselves highly (i.e. $(\exists i = \overline{1,n} \quad p_{ii} = 1)$ (taking into account the condition $p_{ii} = 1$ is assumed to be equal), then P the

trust matrix E is equal to one (the main diagonal is equal to one, the remaining elements of the matrix are equal to zero). Because any l for the number of repetitions (discussion in SS) $P^l = E^l = E$, so, P means that the matrix does not approach the final one, in this case, agreement cannot be reached. This conclusion is confirmed by many observations of the work of various groups. The more opposing sides in the SS, the more difficult it will be to ensure comprehensive agreement in the group.

4. Transfer of responsibility in a group of expert specialists. It is necessary to consider the situation when each specialist in the group completely trusts the opinion of another member of the SS and refuses responsibility for making a decision. In the theory of Markov chains it is shown that the transition matrix of this type does not approach the final matrix. Therefore, it is impossible to reach a comprehensive agreement in such a group. In fact, for the impossibility of reaching a comprehensive agreement it is enough that there are at least two "irresponsible" specialists in the group, and the irresponsible specialist, agreeing with the opinion of the group, is mistaken in his correct opinion.

5. Agreements in a group of experts (coalition). Another case of impossibility of achieving a comprehensive agreement is the formation of different agreements (views) in the SS. This can be considered using the example of the activity of four experts who have formed two coalitions: the 1st expert believes only himself; the 2nd expert believes himself and the 1st expert respectively; the 3rd expert believes only himself and the 4th expert; the 4th expert believes himself and the 3rd expert. Consequently, agreements in the group are unstable, and it is impossible to achieve agreement in the group. Matrices of this type are decomposed into Markov chains, therefore in this situation agreement is not achieved (any $n > 2$ for).

6. Listening in a group of experts. In a comprehensive agreement, each member not only has the right to participate in the decision, but must also refuse a decision with which he does not agree. At the same time, it is impossible to ignore the minority of dissatisfied members of the group and to seek a solution to all dissatisfied situations. In short, blocking is a listening tool during the work of the SH.

In some cases, during the course of the CX activities, a situation may arise where expert specialists are not interested in making any decision at all. This situation can be considered "incorrect blocking," since the behavior of such an expert specialist is outwardly similar to the actions of a specialist that prevents a decision from being made to take his opinion into account. In this case, the opinion of the expert specialist constantly changes during the discussion. As a result, P^l the final matrix of the matrix M_0 the desire is not met.

Technical committees (TC), in turn, perform the functions of the standardization service at the enterprise. One of the important tasks is to determine the methodology for assessing the activities of the CC and the criteria for their functioning [88].

However, it should be noted that a number of problems have not yet been resolved in one SS.

SS Performance Indicator P values and for SS n The number of terms analyzed was 90. Based on the fact that SSs with up to 30 members outnumber the others, we can conclude that the source data is diverse. P And n preliminary data for finding the necessary connection between n grouped by P The values of the integral indicator are obtained on average. P for average values of the integral indicator A box-and-whiskers diagram was plotted; two observations were outside the resulting "curves."

Taking into account the above aspects, we obtain the distribution scheme presented in Figure 1 (after excluding external indicators). P The most suitable regression model of the dependence of the integral indicator on the number of members of the C C n quadratic equation:

$$y = 0.591x^4 + 3753x^3 - 1{,}42x^2 \qquad (2)$$

The resulting model shows the optimal statistical fit to the typical data after removing the bypassers. Within the framework of the constructed model, we P We can predict an increase in the average value of the indicator that characterizes the effectiveness of the CC with an increase in the number of CC members to 10-20 values, which ensures the best balance between them. The most complete agreement of stakeholders within the CC and the effectiveness of its work.

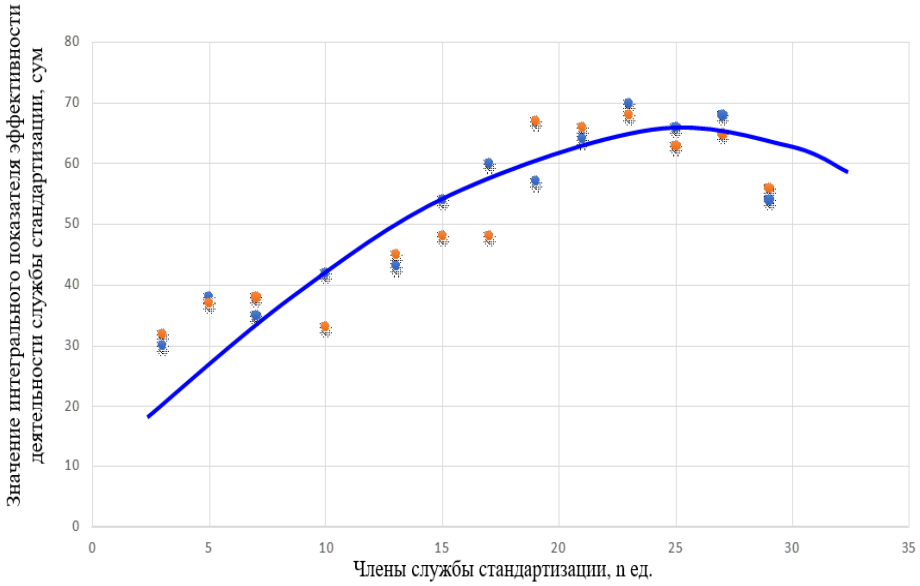

Fig. 1. Distribution diagram of results.

References

1. Karpova O.V. Standardization at enterprises: a textbook on the direction of training 27.04.01 "Standardization and metrology" / O.V. Karpova. - Penza: PSUAS, 2016. - 148 p.
2. Yakovenko N.V., Kachagina O.V. Standardization in quality management at an industrial enterprise // Economics and Management. No. 2. 2012. –P. 75-77.
3. Aronov I. Z., Maksimova O. V., Zazhigalkin A. V. Study of the time to reach consensus in the work of technical committees on standardization based on regular Markov chains // Computer Research and Modeling. 2015. Vol. 7 No. 4 - P. 941-950.
4. GOST R IEC 61165—2019. National Standard of the Russian Federation. Reliability in Engineering APPLICATION OF MARKOV METHODS - Moscow Standartinform 2019. 31 p.
5. Aronov I.Z., Zazhigalkin A.V. Management of the work of technical committees on standardization with the aim of achieving consensus // Scientific and technical journal "Certification", 3/2014. –P. 6-14.
6. Aronov I. Z., Maksimova O. V. Theoretical modeling of achieving consensus in coalitions based on regular Markov chains // Computer Research and Modeling 2020 Vol. 12 No. 5 Pp. 1247–1256.