

Transformation of labour rationing: realities of the digital economy

Yadransky D.N.
Ural State University of Economics
Institute of Economics
Yekaterinburg, Russia
yadransky_usue@mail.ru

Latypov R.T.
Ural State University of Economics
Institute of Economics
Yekaterinburg, Russia
latypov_usue@mail.ru

Chumak E.V.
Ural State University of Economics
Institute of Management and Information Technology
Yekaterinburg, Russia
chumak_usue@mail.ru

Abstract — Article deals with the modern management problem associated with improving the accuracy of the ration of managerial work. Emphasis is on the need to move from the rationing of the working day to the rationing of individual labor functions (operations). The subject of the article is contradictions arising in the process of integration of quantitative and qualitative methods of research of the work process. The main purpose of the article is to create the author's concept of overcoming contradictions between the existing methods of regulation managerial labor and the practical need of enterprises in developing these norms. Concept is based on the synthesis of quantitative and qualitative methods. The methodological framework of the study consists of the concept of foreign and domestic researchers involved in the issues of labor rationing and management efficiency. The problem of the article lies in the fact that the existing approaches to standards of management personnel are not sufficiently adapted to solving problems in conditions of intellectual labor. The cause of the problem is seen as the need of enterprises to improve the efficiency of not individual employees involved in management issues, but of the entire business process management. In combination with the totality of such general scientific and special methods of cognition, such as dialectical, systemic, descriptive, theoretical modeling, the article offers approaches to eliminate this contradiction. The main conclusion of the article is the necessity of application of two-stage approaches to the valuation of managerial work, where the first phase involves a qualitative analysis of the structure of the business process, is conducted after the close study of the cost of labor in the performance of these functions. The article defines the limitations of the application of this method and offers recommendations for its integration with methods of studying the cost of working time. As the resulting conclusions, it is proposed to apply not for all business processes but for the most significant for the organization. This method will optimize the costs of rationing, and explore only the largest (and, accordingly, costly) business processes for an organization. The basis of this method is the ranking system proposed in the article. It is also insisted that in modern management practice it is inappropriate to control individual participants in a business process (jobs). It is necessary to standardize the entire business process with its further distribution among the performers.

Keywords — *efficiency, factor, business process, mapping, quantitative methods, qualitative methods, rationing*

I. INTRODUCTION

Classic Taylor stage of labor rationing in the conditions of post-industrialization of the economy is gradually coming to a logical conclusion. On the one hand, this is facilitated by the development of microelement rationing systems, which make it possible to abandon the direct study of working time costs. On the other hand, the increase in the share of intellectual (information, management) labor leads to the fact that classical methods (including microelements) are simply not able to provide a solution to the project and analytical tasks. The main objectives of labor regulation for modern economic practice are:

- evaluation of the effectiveness of the existing work process;
- modeling of information (management) work process;
- an increase of labor productivity by identifying the loss of working time.

These goals are somewhat different from the classical ones and, accordingly, require the modernization of the existing methodology of rationing. The solution to these problems requires significant changes in the methodology of regulation of labor based on other forms of accounting for labor costs. There is a need to develop new management approaches to this issue since there is no centralized system of labor regulation in the Russian Federation today. In our opinion, the solution to these problems is based on the integration of quantitative and qualitative approaches to the determination of labor costs and, accordingly, to the rationing and regulation of labor activity.

II. LITERATURE REVIEW

Problems of labor rationing in the field of intellectual activity in modern literature have already been considered. So, in particular, O. Feoktistova, considering the rationing of labor of a researcher, comes to the conclusion that such a labor

regulation should have an individual character and be carried out within the framework of each specific research project [1]. In general, an interesting approach for modern business practice has limited application. First of all, this is due to the fact that the current activities are not of a pronounced project nature among a significant number of specialists and managers. Secondly, is the high labor intensity of labor valuation, whereby the actual costs of developing standards can significantly worsen the economic performance of the economic system.

To the most common methods of regulation management work G. Shabanov proposes to use the following methods:

1. The method of rationing by analogy - rationing based on a similar experience of other effective enterprises.

2. The method of expanded standards of the number - an indirect measurement of the complexity of the work and the calculation of the number of involved personnel of engineering and managerial workers, both for the entire production and for individual structural units.

3. The method of direct regulation is the division of labor into separate operations and the analysis of the time spent on their performance (for constantly repeating works or works that can be divided into repeated operations) [2]. However, analyzing the current economic practice, it can be stated that the regulation by analogy in most cases is not applicable due to the lack of a reliable information base (closed information for third parties). The method of expanded standards of the number is practically not applicable due to the lack of methodological basis for the calculation of these standards. We explain the latter statement by the fact that the correlation dependences developed during the Soviet era are outdated, and the development of new ones, similarly, in market conditions is practically impossible. The method of direct regulation of such restrictions does not have, however, and has no unambiguous methodology for the analytical development of standards of persons engaged in creative work (or work containing a creative component).

III. RESULTS AND DISCUSSION

Considering the two main methods of developing standards used in modern domestic rationing, it can be stated that experimental-statistical methods are more often used for regulation engineering and management personnel. Technically sound standards are used less frequently because of the complexity of their development for a given rationing object.

It should be noted that technically sound depend on the technical capabilities of the equipment, and accordingly, for most engineering and managerial workers, whose work is not directly related to the operation of the equipment, they are not applicable. Experimental-statistical, being based on the results of previous work, require the existence of an effective system for analyzing the engineering and managerial work process. It also requires highly qualified specialists who have experience in conducting such research and a clear initial research algorithm. Faced in practice with the situation of the development of such standards, we can state several initial requirements for conducting such a study:

- availability of methodology at the stage of approval of the technical task;

- all researchers have unambiguous evaluation criteria and strict adherence to the methodology developed by all researchers;

- reproducibility (typicality) of work in individual areas;

- the researcher's understanding of the direct connection between the employee's current action and the performance of the job function (business function) assigned to him.

Thus, a photograph of working time, describing everything (including the cost of working time), does not allow one to clearly establish their connection with specific functions and, accordingly, to identify those that are not effective (not appropriate) for this employee. Timekeeping as a method of studying the cost of working time is also often inapplicable due to the lack of a system of cyclical labor operations of the managerial employee during the day.

In our opinion, to solve the problem, it is possible to adapt the methods of qualitative analysis. In this case, we propose to use the same developed approaches. Authors of the article of adaptation innovative solutions proposed a matrix of the dependence of the speed of adaptation on the complexity of the idea and the qualifications of the employee [3]. This idea was somewhat adapted to the rationing of intellectual (managerial) labor. In this case, functions selected from the job description or by analyzing the actual work performed are analyzed. The analyzed functions must exhaust the whole range of functional tasks of a particular employee. The further process requires the adoption of a number of hypotheses. We assume that in any process of intellectual (managerial) labor there is an opportunity to distinguish work with different levels of complexity. The ability to perform work does not depend on the individual abilities (aptitudes) of a particular employee, is universal and can be formed in the process of preparation. Each of the works is also characterized by the significance of its result. Such a hypothesis allows scaling individual functions of workers (work).

The following scales were applied in the dependency analysis:

Duration of the function: high (more than 50% of working time) - 3; average (up to 25% of working time) - 2; small (up to 10% of working time) - 1.

Functional area of activity:

3-main-directly provides the main result of the organization (design, production, services, sales);

2-support - providing basic production process resources, plans, regulatory documents, etc. required to effectively perform the core functions;

1-service, associated with ensuring the rhythm and productivity of the main and auxiliary technological process (transport, storage, accounting and analytical). The functional direction of the activities may differ significantly depending on the specific type of operational activity of the organization.

The complexity of the work is characterized by the necessary level of initial training to perform a specific function (experience + education), as well as the level of standard tasks: 3 – complex function; 2 – medium complex; 1 – easy function. Latter category can be divided into qualification requirements and standardized operations. In any case, we are talking about the need for effective scaling of operations, in order to disclose the cost of labor (both current and spent on preparation for this type of activity or function).

The complexity of the decision - required number of documents taken into account in the decision making a process or the number of structural units (people) with which coordination is necessary for the final performance of a

particular function: 3 - a multidimensional function; 2 - complex function; 1 - local function.

Significance of the result of a managerial (analytical) action for the activities of the organization as a whole: 3 – function of global importance; 2 – function of complex value; 1 – function of local value.

In assessing the complexity of the evaluation ranks and in accordance with them are three levels of regulation: priority (the total values of the scales from 12 to 15), important (from 11 to 7) and desirable (less than 7). Within the framework of this scale, it is possible to offer a greater number of ranks or ranking directions, but the expediency of such a complication seems to us ambiguous. Firstly, due to the increase in the labor intensity of rationing, secondly, these indicators indicate the priority for rationing rather and it is not norms themselves.

Such a classification can also be used in the design of managerial work, in the distribution of functions by the priority method (highest rating indicates a higher priority) for the greatest attention to equipment, skills development, etc.

According to the results of the ranking, we can turn to the question of establishing objectively necessary labor costs for implementation, as well as combine functions (redistribute between individual performers, etc.). Regulation managerial work in full (by analogy with the labor of workers) seems to us inexpedient due to the complexity and work costs of the rationing process. It is necessary to normalize the most work-intensive and significant functions. A prerequisite is seen through the regulation function, rather than the work of a particular employee in a particular workplace. It is the last thesis that determines the fundamental difference of the author's approach to the regulation of managerial work.

Based on the last statement, it is necessary to introduce the notion of “labor intensity of the realization of a function” into scientific use. Such labor intensity characterizes the totality of labor costs to perform a specific function (business function). In this context, it is a set of stages that are implemented sequentially within one or more services (departments) of the organization in order to obtain a certain (set) result, which can be designated as the “purpose of the function implementation”. Final result of the business function is binary - “execution” / “not execution”, and it is characterized by duration. Use of a binary approach to assessing the performance of business functions is proposed by other authors [4]. At the same time, such logic can be extended to assess the individual contribution to the execution of a business function. If a particular business function is divided between several performers, the failure (improper fulfillment) of the element of business functions of the individual performer will result in a violation of its implementation by other performers. Therefore, by establishing the physical capability of a particular business function to be performed by a group of performers, the entire normalization and evaluation process can be represented in the binary form: execution / non-execution. Final efficiency will be determined by compliance with the normative (estimated, planned) duration. Methods of culinary classification, as mentioned above, it is necessary to determine the priority business functions (as the direction of rationing). In our opinion, functions that will have a lower priority and shorter duration can be presented in the form of correction factors to the basic parameters of the main functions.

In the process of developing approaches to the rationing of managerial work, it is necessary to assess the priority of the functions themselves, which will be rationed, and to determine

the effectiveness of the dates for the start of implementation of these functions. In this case, the hypothesis is that working in a multitasking modern management worker (specialist) is forced to suspend (postpone) a different function to start the function received to perform untimely. It is also possible with a high rating of importance (priority). At the same time, the question of establishing optimal “entry points” can be determined by methods of qualitative analysis (using Agile technologies), for example, when determining the parameters of the value stream [5].

It should be noted another fundamental problem of the rationing of labor of management personnel. This problem has already been mentioned in the scientific literature, in particular Yu. Medvedeva [6]. As the author notes (in relation to labor protection specialists), Interdisciplinary standards do not indicate all job duties of occupational safety specialists in comparison with the “Unified Qualification Reference Book of Managers, Specialists and Employees” (CEN) [7] and Professional Standard “Specialist in the field of labor protection” [8]. This problem is typical for many other areas of intellectual work. Therefore, the establishment of the structure and specifics of a business function without the use of qualitative methods (first of all, mapping) seems to us impracticable. Agreeing with the statement of E.Zhulina that “the labor rate is not only the amount of necessary labor time costs but also an expression of his job duties” [9], we believe that the consolidation of work duties in the modern management process is the result of the preliminary analytical work of the normalizer.

Working process (set of business functions), initially structured by mapping methods, should be analytically studied for optimal loading, even distribution of the elements of functions, with a view to their further normative assignment to specific services and positions. Need for preliminary qualitative research we explain the importance of a clear structuring of the working process for accurate coverage of the elements of its components. At the same time, an accuracy of further rationing will depend on the clarity of such structuring. We fully agree with the important thesis that the labor rate can turn from a means of increasing management efficiency into a tool that significantly worsens the state of many processes ... [10]. The author of the article believes that this rule is typical only for machine-building enterprises, we believe that this thesis is valid for any enterprise where work standards are applied while their efficiency (accuracy) is not high enough.

IV. CONCLUSION

Thus, there is a need to develop a functional algorithm based on the analysis of business processes of labor rationing for managers. The fact of this algorithm is based on the fact that the process of labor regulation is also a business process (which is considered in the work of O. Shutina [11]). In fact, having developed the optimal structure and algorithm of the business process, it becomes possible to ensure its effective flow. This process approach puts forward special requirements for the organization of consistent quantitative and qualitative research. The main difficulty lies in the fact that quantitative research is preceded by qualitative research. The latter may adversely affect the accuracy of the quantitative study. That is why we believe that mapping based only on self – assessment (which today is the main form of value stream mapping) is not accurate enough. There is a need for a precise description of

the mapping procedure in order to eliminate the subjectivity of the assessment. In our opinion, such criteria can be:

1. Application of mapping only for functions with measurable parameters "input" and "output";
2. Tracking information product (change, increment, systematization of information) in terms of changing its value;
3. Mapping precedes the observation of the actual working process, which determines the structure of the function and the transition point of operations;
4. Flow mapping without parallel operations.
5. The observer keeps track of the whole process, not the work of a particular performer;
7. The element is the element on which it is possible to define further expenses of time precisely;
8. We forget to identify informal actions and channels of information transfer. Operations are mapped in fact, with the identification of all informal channels, actions, ways to obtain (transmit) information;
9. Flow mapping is entrusted to specialists, third-party in relation to this process (normalizers).

The specific process of rationing a business process requires more specificity depending on the characteristics of the flow in a particular organization. However, in general, this process can be mapped by existing methods, taking into account the limitations stated above. After the mapping, the further process of studying the complexity of the business process proceeds in accordance with the existing methods of studying the cost of working time. As a method of fixing the costs most fully, we, first of all, relate a photograph of working time.

In our opinion, with the help of this technique, any business process occurring in the organization can be studied, and then modeled and optimized practically, which brings to a new level the existing methods of business process management.

References

- [1] Feoktistova O.A. Rationing of research work: methodological approaches. Oksana Feoktistova / Internet magazine "NAUKOVEDENIE" Issue 5 (24), September - October 2014 <http://naukovedenie.ru>
- [2] Shabanova G.P. Improving productivity and rationing labor [Electronic resource] / Institute for Enterprise Issues, 2010. Access mode: <http://www.ipnou.ru>
- [3] Aristarkhova M.K., Zueva M.S., Abzgildin D.A. Modeling the process of adopting an innovative solution to the conditions of production // Upravlenets. 2018. T. 9. No. 3. Pp. 51–57. DOI: 10.29141 / 2218-5003-2018-9-3-9
- [4] Mints Aleksey. Classification of tasks of data mining and data processing in the economy/ Aleksey Mints / Baltic Journal of Economic Studies Vol 3, No 3 (2017) p. 47-52
- [5] Arzhentsov Vladimir Fedorovich, Davydova Nadezhda Stanislavovna, Fatkhullin Ruzal Rasimovich Mapping value streams (on the example of PJSC "KamAZ") // Vestnik of Udmurt University. Series "Economics and Law." 2017. №1. URL: <https://cyberleninka.ru/article/n/kartirovanie-potokov-sozdaniya-tsennosti-na-primere-pao-kamaz> (date of treatment: 25.09.2018).
- [6] Medvedev Yu.V. Contradictions in the rationing of work of labor protection specialists in a market economy / U, V. Medvedev / International Research Journal. 2017. No. 8-1 (62). P. 25-28.
- [7] Order of the Ministry of Health and Social Development of the Russian Federation on May 17, 2012 No. 559n "On Approval of the Unified Qualification Reference Book of Managers, Specialists and Employees, Section "Qualification Characteristics of Managers and Specialists Implementing Work in the Field of Labor Protection "[Electronic resource] // ATP ConsultantPlus. - URL: <http://www.consultant.ru> (date of treatment: 09/02/2018)
- [8] Order of the Ministry of Labor of Russia dated August 4, 2014 No. 524n "On approval of the occupational safety standard" Specialist in the field of labor protection "[Electronic resource] // ATP Consultant Plus. - URL: <http://www.consultant.ru> (date of treatment: 09/02/2018)
- [9] Zhulina E.G. Rationing labor for the sake of improving its quality. Labor Rationing as a Tool for Managing the Quality of Working Life / E.G. Zulina / Russian Entrepreneurship. 2009. No. 7-2. Pp. 47-51
- [10] Pshenichnikov S.V. Regulation of labor at the present stage of development of aviation engineering (on the example of OAO Omsk Machine-Building Design Bureau / S. Pshenichnikov / Vestnik of Omsk University. Series: Economics. 2008. No. 1. P. 103-104.
- [11] Shutina O.V. Labor Rationing as a Business Process O.V. Shutina / Vestnik of Omsk University. Series: Economics. 2009. № 2. P. 19–25.