

**PEDTR 2019****18<sup>th</sup> International Scientific Conference “Problems of Enterprise Development:  
Theory and Practice”****EVALUATION OF ADMINISTRATIVE WORK EFFICIENCY IN  
THE CONTEXT OF DIGITALIZATION**

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***Abstract***

The paper reveals the features of administrative work under the conditions of digital transformation. The criteria and indicators to evaluate administrative work are determined. The calculating formulas to evaluate organization and efficiency of administrative work are given. Today, the consequences of slowness are often more serious than the effects of mistakes. You need to be able to quickly adopt innovations. Modern practice of enterprise management proves that it is not efficient to build many different local systems (information, communication, educational, motivational, etc.). The paper presents some indicators that allow you to calculate the information need in the work of the head. It is shown that big data processing requires an integrated set of operations, on the basis of which it will be possible to automate the activities of different services, specialists, and managers. Modern staff management requires special managers' skills and searching for reserves of labour management efficiency that are conditioned upon new technologies introduction in business processes. In this regard, the management success is determined by the ability to respond flexibly to modern changes. The paper reveals the methods to evaluate the effectiveness of administrative work. The new forms of labour management such as crowdfunding, crowdsourcing, and sharing technologies are presented. The administrative reasons to lose working hours by the head are discovered.

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**Keywords:** Administrative work, automation of administrative labour-intensive processes, business proficiency assessment, efficiency of management activities, labour management, management efficiency.

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## 1. Introduction

Objective requirements of the external environment for management activities. The problem to manage administrative work and make effective managers' decisions at the stage of digital transformation is of particular importance. The industrial revolution 4.0 has brought a new level of working relations to the world, which not every company is ready to accept or support. On the one hand, new information technologies significantly contribute to save working hours and labour resources at the enterprise. On the other hand, they force the heads of enterprises to allocate significant resources not only to purchase and install these new technologies in the companies, but also train employees and increase their competence level, so that staff could work under the conditions of digital transformation.

In the context of digital economy introduction, the peculiarity of managers' work is to completely use the information flows and provide themselves and their staff with the necessary quantity and quality of information. To meet the modern requirements of the company's development, managers have to effectively and efficiently organize their work and make appropriate use of the available economic resources. The resolve of this important problem is possible only if the administrative work is optimized and non-productive operations, which lead to losses, decrease in profitability, and labour productivity of the manager, are reduced.

To perform well means to achieve final goals and intermediate results, and to make optimal use of available resources. In order to achieve efficiency, it is necessary to correctly formulate goals, structure tasks, have a clear system of performance indicators, and correctly allocate and attach areas of responsibility to participants of the work activity.

The combination of social networks, mobile applications, Big Data Analytics, and cloud technologies (SMAC-social, mobile, analytics, cloud) influence the demand for the workforce and the specifics of building business models. This technologies combination made it possible to make a digital revolution, replace a human being to robots, and improve the professional competence of the head.

Klaus Schwab, President and founder of the Davos economic forum, noted that the main production factor will not be the capital, but human resources (Business Switzerland, 2016). Today, the concept of "high qualification" is a subject to revision, since the traditional definitions of skilled work, which is based on the higher education or the ability to make an expert assessment within the sphere of the profession, are somewhat outdated. Now it is important to have soft skills and learn new skills and approaches (the concept of "structural mobility") in different business environments.

## 2. Problem Statement

Crowdfunding and crowdsourcing technologies are being actively introduced into the modern managers' activities, a completely new business model is being formed ("on-demand economy"), and new forms of labour management are emerging (sharing economy) (Makhmudova & Solovova, 2019).

There is a dramatic "breaking" of skills in business models within an extremely short period and there is a demand not for soft skills, but a group of new digital skills for non-digital professions. Today, most small, medium, and even large businesses compete not with goods and services they provide to the customers, but with digital platforms, on the basis of which it is possible to diversify the range of products,

create and provide an increasing volume of diverse and high-quality product, and quickly respond to changes in consumer demand to be profitable.

It should be noted that the business goals have not changed but the ambitions have increased, because all companies, regardless of the technical and economic state, are now equal to the need to implement digital technologies. That means that each company has a chance to become a leader. In this regard, it is especially important to pay attention to the efficiency of managers' work. They will either help bring the company to the leading positions, or not.

The legal and legislative framework has already responded to the fixation of new forms of labour relations with the staff. Distance employment is being fixed for freelancers and self-employed. At the same time, new forms of labour management are also being improved.

The management system includes three mandatory stages:

1. Building of information space to determine control activities;
2. Automated managerial decision-making;
3. Screen forms to present information about recommended managerial decisions and their justifications.

### **3. Research Questions**

Criteria and indicators to evaluate the manager's work. Administrative work includes several evaluation aspects: setting goals, competently built labour processes, usefully directed information flows, and managerial decision-making. However, to make a management decision, you need to analyze a large amount of information, which is helped by special PC programs that allow you to visualize information at a distance. To evaluate the efficiency of the results in administrative work, it is necessary to measure the musing qualitative and quantitative indicators. Let us name just a few of them.

The quality indicators include scientific and technical level of management (the use of scientific methods, office mechanization facilities, and computer technology), level of managers' qualification, validity of managers' decision, and reliability and completeness of information available to the management system. These indicators include the level of the management culture (characterized by a practiced leadership style, number of conflict situations, etc.), and also the managers' work culture (the use of working hours, adherence to hours of operation, and working conditions).

Quantitative indicators to evaluate the management system efficiency include labour and financial criteria. The labour criteria consist of share of specialists, employees and workers in their total amount, actual labour intensity of administrative and managerial work (compared with the standard), and amount of administrative labour inputs per ruble of output. The financial criteria include the amount of operating costs to maintain executive personnel in the total wage bill of the company.

The main factors of labour complexity are managers' functions, diversity of work, degree of self-sufficiency in operations, management level and degree of responsibility, and elements of novelty and/or creativity in the work.

#### 4. Purpose of the Study

Responding to the current trends in the development of business processes, the attention of scientists and practitioners is focused on evaluating the efficiency of managers' work. This is due to the fact that the success and development of companies largely depends on a clear situation understanding and competent actions on the part of the head. There is the most popular method in Russian practice to identify reserves of working hours using work time study and chronographic observations. This is a powerful method, although there are some difficulties to determine the regular labour elements in order to carry out their rationing. The formulas to calculate the necessary indicators are presented in Table 01.

The coefficient of intensity of working hours use is obtained by expertise. It takes into account the company specifics and reflects the efficiency of the manager's work time expenditures

**Table 01.** Formulas to evaluate efficiency and labour management of administrative work

Indicatorname	Formula to calculate the indicator	Commentary
Efficiency of work time expenditures during the day	$Ef = \frac{n}{ta}$	Ef – cost-effectiveness of working hours during the day n – time for long-term tasks ta – time for operational activity
Evaluation of the working hours efficiency		
Labour utilization coefficient (K)	$K = K_{ext} * K_{int}$	$K_{ext}$ – coefficient of extensive use of working hours $K_{int}$ – coefficient of intensity of working hours use
Coefficient of extensive use of working hours ( $K_{ext}$ )	$K_{ext} = \frac{(G - Hloss)}{G}$	G – general fund of working hours Hloss – loss of working hours
Coefficient of intensity of working hours use ( $K_i$ )	$K_i = 1 - \sum_{i=1}^n \sqrt{(if - jn)_i^2}$	$j_{nb}$ and $j_n$ – actual and normative share of each element in the structure of the working time balance n – amount of cost elements of working hours
Evaluation of manager's business qualities		
Professional prospects coefficient ( $K_{pp}$ )	$K_{pp} = Ed * (1 + Wexp / 4 + A/18)$	Ed – evaluation of the educational level, which is usually accepted 0.15 for those with the incomplete secondary education 0.60 for those with the secondary education 0.75 for those with the technical secondary education and incomplete higher education 1.00 with the higher education by occupation Wexp - work experience A - age

Source: authors based on (Kuznetsova, Muhina, Hachatryan, Chernetsova, & Shpakova, 2015).

The indicators of quantitative evaluation of the information flow volume in the managers' work can objectively assess the level of information needs in the work and identify the bottlenecks in the industrial management, labour, and control. Quantitative evaluation of the level of information needs in the managers' work is based on the comparison of calculated or normative values of the industrial management, labour, and control with the actual value.

In order to determine the bottlenecks in the managers' administrative work, it is necessary to calculate the information flow and indicators of administrative work efficiency. The calculated indicators are shown in Table 02.

**Table 02.** Calculation of the information need in manager’s work

Indicator name	Formula to calculate the indicator	Commentary
Coefficient of efficiency of management documentation	$K_{30} = \frac{D_{st} + D_{stz} + D_{unf}}{D_0}$	K <sub>30</sub> -coefficient of efficiency of management documentation D <sub>st</sub> , D <sub>stz</sub> , D <sub>unf</sub> -corresponding amount of standard and standardized documents, and unified standard documents used at the enterprise D <sub>0</sub> – total amount of document types
Coefficient of computerization of managerial work	$K_{31} = \frac{E_{mct}}{E_{tm}}$	K <sub>31</sub> – coefficient of computerization of managerial work E <sub>mct</sub> – amount of tasks or management functions that use computer technology E <sub>tm</sub> – total amount of management tasks or functions at the enterprise
Ratio of managerial staff qualification to work status	$K_{32} = \frac{P_{mtr}}{P_{tm}}$	K <sub>32</sub> –ratio of managerial staff qualification P <sub>mtr</sub> – amount of managerial personnel whose professional qualification corresponds to their work status, person P <sub>tm</sub> – total amount of management staff
Utilization factor of personnel administration plans	$K_{33} = \frac{P_{adm.pv}}{P_{tot.adm}}$	K <sub>33</sub> -utilization factor of personnel administration plans P <sub>adm.pv</sub> – amount of positions where the personnel administration plan is valid P <sub>tot.adm</sub> – total amount of positions in the enterprise executive personnel
Utilization factor of Regulations on business units in management system	$K_{34} = \frac{R_{reg}}{R_{tot}}$	K <sub>34</sub> - utilization factor of Regulations on business units R <sub>reg</sub> – amount of business units in the enterprise management system which activities are regulated by the pertinent regulations, etc. R <sub>tot</sub> – total amount of business units in the management system

Source: authors.

As practice shows, the vulnerabilities in the managers’ work are excessive documentation workload, insufficient computerization of management activities, and undeveloped provision system of local and standard documentation. In order to improve the document flow and information communication between managers and business units, it is advisable to use all types and forms of communication which are available in the company. It is important to control the completeness and quality degree of incoming information.

## 5. Research Methods

Under modern conditions of digital transformation, it is also possible to use sharing economy that free up a significant amount of time for managers through the use of digital technologies in administrative work (Makhmudova & Solovova, 2019). At Russian enterprises, such methods are not used to identify the time reserves of the head. Today, about 29% of working hours lost by managers have been revealed. They are shown in Table 03.

**Table 03.** Managerial reasons of managers’ working hours losses

Indicator name		Indicator, %	Commentary
1. Complication of the document management system		18.2	Loss of working hours
2. Diversified management hierarchy		16.8	Decrease in efficiency and excess document flow
3. Violation of the control coefficient (the ratio of the actual and normative amount of subordinates per 1 head of 1 level)		15.6	Performing un usual functions
4. Weakening of personnel and technological discipline	Changing the algorithm of management procedures in decision-making	8.3	Low speed in management decision - making
	Controversial activities to implement the decisions		Duplication of functions and loss of time
5. Information	Delay or non-receipt of reporting information within the established time limit	7.4	Missing data and relative ignorance
	Low quality in reporting documents preparation	7.9	Insufficiency in manager’s decisions due to misrepresentation of source information
6. Low quality in arranging meetings		10.1	Loss of working hours
7. Other		15.7	Low management efficiency and deterioration in managerial decisions

Source: authors.

## 6. Findings

Improving automation of administrative work. If we analyze the loss of manager’s working hours, the reason is a low level of information technology use in the field. In this regard, it is recommended to actively use such automation elements as dashboards (interactive analytical panel) to telematically monitor, control, and manage. There are some systems to create dashboards: Qlik Sense, Tableau Public, Sisense, MicroSoft Power BI (Osipova & Nikolaeva, 2014; Rogova, 2018).

The information displayed on dashboards allows you to monitor HR processes and results. With the use of these information technologies, it is possible to identify new trends and opportunities of business processes at an early stage. In addition, it is available to monitor problem areas. It also happens that due to technical availability, the risk of data loss increases. To regularly monitor personnel threats in companies, it is essential to introduce a new full-time employee, that is to say a personnel security manager. This position cannot be replaced by a dozen security staff members, because it requires special training in the field of personnel management to make competent management decisions and perform special work to evaluate personnel (Makhmudova, Ilyukhina, & Bogatyryova, 2018).

## 7. Conclusion

Generally, the objective digital environment fundamentally changes the concept of managerial impact and employee interaction. The ability to manage efficiently is built on development of managers’ new competencies and readiness to work under updated technologies with a large information flow. Working with the dashboard allows you to design the employees’ behavior of and automate different managers’ functions.

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