

ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

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**ORGANIZATIONAL DIAGNOSIS METHODS
IN DECENTRALLY EXECUTING COMPANIES****МЕТОДИ ОРГАНІЗАЦІЙНОЇ ДІАГНОСТИКИ
В КОМПАНІЯХ З ДЕЦЕНТРАЛІЗОВАНИМ
РОЗПОДІЛОМ ПРАЦІВНИКІВ**

Urgency of the research. Current development of digital technologies is driven by megatrends. Companies follow these trends and try to extend digital solutions to all areas of business.

Target setting. Application of digital tools would be particularly practical for decentral executing companies. However, they have not yet been fully implemented, as the technological potential has not yet been sufficiently researched and adopted for the described purpose.

Actual scientific researches and issues analysis. The literature analysis revealed that at present, digital tools are still not widely used for organizational purposes. Furthermore, humans still predominantly perform many diagnostic functions.

Uninvestigated parts of general matters defining. In the course of a literature analysis of existing tools of organizational diagnosis, we encountered a lack of references to fully digitalized solutions.

The research objective. The task is to analyze which of the examined criteria and dysfunctions of the organization can be diagnosed by digital tools; how conventional methods can be replaced; what are the advantages and disadvantages of digital organizational analysis, as well as which requirements must be met for implementation.

The statement of basic materials. In this article, we compare conventional and generally defined fully digitalized tools for organizational diagnostics based on eleven selected criteria and seventeen dysfunctions. According to the requirements of the company management, organizational diagnosis is performed in three phases. Most of the applied methods are based on surveys, interviews, tests, observations, discussions and documentation analysis.

Conclusions. Our research shows that the use of digital tools reduces the number of diagnostic phases and provides lower resource input for implementation. Nevertheless, the effort required for the design of diagnostic systems is very high and requires fulfilment of general and specific requirements. In this article, we present the general requirements for digital tools for organizational diagnostics.

Keywords: organizational diagnosis; decentralized work; organizational change.

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Актуальність теми дослідження. Сучасний розвиток цифрових технологій керується мегатрендами. Компанії слідує цим тенденціям і намагаються поширити цифрові рішення на всі сфери бізнесу.

Постановка проблеми. Застосування цифрових інструментів було б особливо практичним для компаній з децентралізованим розподілом працівників. Однак вони ще не повністю реалізовані, оскільки технологічний потенціал ще недостатньо вивчений і використаний для описаних цілей.

Аналіз останніх досліджень і публікацій. Аналіз наукових публікацій показав, що в даний час цифрові інструменти все ще не отримали широкого застосування для організаційних цілей. Крім того, багато діагностичних функцій все ще переважно виконуються людиною.

Виділення недосліджених частин загальної проблеми. В ході аналізу наукових публікацій існуючих інструментів організаційної діагностики, ми зіткнулися з відсутністю посилань на повністю цифрові рішення.

Постановка завдання. Завдання полягає в аналізі того, які з обстежених критеріїв і дисфункцій організації можуть бути діагностовані цифровими інструментами; як можна замінити відомі аналогові методи; які переваги та недоліки цифрового організаційного аналізу, а також які вимоги повинні бути виконані для його впровадження.

Виклад основного матеріалу. У цій статті ми порівнюємо звичайні і узагальнені повністю дигіталізовані інструменти для організаційної діагностики, щодо одинадцяти відібраних критеріїв і сімнадцяти дисфункцій. Відповідно до вимог керівництва компанії, організаційна діагностика проводиться в три етапи. Більшість застосовуваних методів засновані на опитуваннях, інтерв'ю, тестах, спостереженнях, обговореннях та аналізі документації.

Висновки. Дослідження показує, що використання цифрових інструментів скорочує кількість етапів діагностики і забезпечує менший обсяг ресурсів для реалізації. Проте, витрати, необхідні для проектування систем діагностики, дуже високі і вимагають виконання загальних і специфічних вимог. У цій статті ми розглядаємо загальні вимоги до цифрових інструментів для організаційної діагностики.

Ключові слова: організаційна діагностика; децентралізоване виконання роботи; організаційний розвиток.

Urgency of the research. Companies that focus on decentral executing are, on the one hand, companies that offer or support different forms of work outside of center of operations and, on the other hand, companies in which there is limited or even no physical interaction between employees due to the type of work. These include outsourced activities, mobile work, material and services

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provided by one person, etc. Digital change increases the importance of flexible work. This requires the rethinking of organizational development processes. Considering the phases of organizational development, the diagnosis phase (the identification of problem areas, weaknesses and strengths) is particularly important [13; 7].

Target setting. Currently, the overwhelming majority of diagnostic tools focus on the collection of qualitative and quantitative data through direct survey and analysis methods based on the interview, questionnaire, documentation analysis etc. [3]. Such methods may entail risks of subjective estimation, lack of sufficient or incorrect information, and deficiencies due to ethical principles. Sergio et. al. underline the insufficient consideration of organizational phenomena in conventional diagnostic methods [12]. Digital tools can minimize or even eliminate these risks and enables remote diagnosis for employees who work decentrally. However, the tools that support this process digitally are not well known.

The conventional and digital tools of organizational diagnostics differ in the way of data collection, analysis and further use. The digital tool is a software (and under certain circumstances also hardware) system of procedures and algorithms for collection and analysis, as well as output of corresponding data.

The relevance of this investigation is determined, among other things, by the interest of small and medium-sized enterprises in organizational development [5]. Many of such companies are very constrained due to their limited financial resources for external consultants. Consequently, the digital remedy would be highly beneficial in this case. For this investigation, digital tools are not considered to be computer-based conventional methods (computer-assisted survey, camera-based observation), but rather applications that record key indicators, compare them with the target status and analyze them [9].

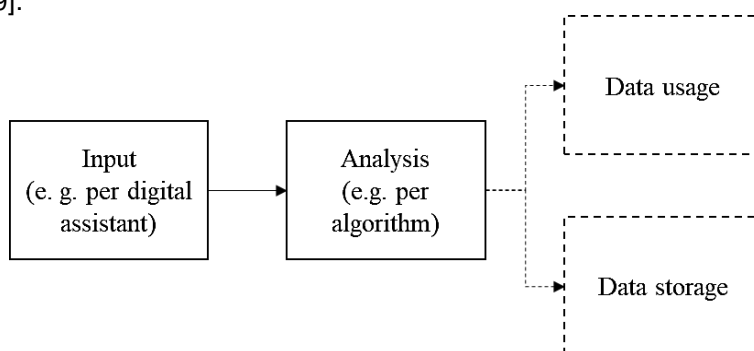


Fig. 1. General formulated digital tool for organizational diagnosis. Own figure

Our research focuses on the determination of known methods and comparison of them with general formulated digital tools. The findings can be used for the further establishment and the identification of basics for new diagnostic methods.

A specific framework delimits this research investigation: only contents relevant to organizational development are considered (behavior, climate, communication, change, culture, motivation, values, conflicts, communication).

Actual scientific researches and issues analysis. The analysis of new scientific findings is divided into two parts: review and evaluation of known methods of organizational diagnostics and general formulated digital tool as well as determination of perspectives of implementation of digital tools in the investigated area.

Analysis of scientific sources was performed using the search results from Scopus database. The search for "organizational diagnosis" and "organizational assessment" resulted in 681 hits. The research covered the entire available period from 1970 to 2020 in the scientific fields of Medicine; Social Sciences; Business, Management, Accounting; Psychology; Engineering (in descending order of number of papers).

After refinement of the results according to the purpose of the investigation, 653 sources were sorted out and eliminated. The 28 papers were discarded and further analyzed.

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Uninvestigated parts of general matters defining. These 28 publications have only limited relevance to the research issue under consideration. They only partially investigate one of the aspects: either the diagnostic (but not digital) of the researched companies, or digital diagnosis of a limited number of the examined parameters.

The research objective. The main task of this investigation is the comparison of the known and digitalized methods of organizational diagnosis in order to enable future diagnosis in companies with decentralized work.

The statement of basic materials. Firstly, the methods and tools in organizational diagnostics were derived. Although some approaches to organizational assessment are complex procedures consisting of a combination of several methods, these methods are the same and are based on observation, review and analyses of corporate documentation, questionnaire survey, interview, testing and focus groups [6; 2; 11]. Further research on the evaluation criteria for these methods within the search hits did not yield sufficient results, so the search was extended to other sources.

Different authors offer their perspectives on the criteria, metrics and indicators that are captured and evaluated by digital organizational diagnosis tools. So, define Nathan Perkins, L. et. al. stakeholder value, leadership, culture and quality [8].

For the comparison of existing and generally formulated digital tools, some main criteria have been selected. Despite validity, adequacy to the intellectual and cultural level of the research participants, acceptability of resources (costs, time) are the most important ones and therefore are required for all tools independent of their implementation. The following criteria are used to evaluate existing and potential digital tools for organizational diagnosis:

- real time perception
- prompt receipt of information
- objectivity of data
- opportunity to understand the behavior through identification with values, goals
- flexibility of research attitudes
- globality of investigated situation
- differentiation and identification of features of the investigated situation
- possibility of recurrence of situation
- possibilities of obtaining data on the goals and motivations of behavior
- objectivity of observer
- possibilities for generalization

Since organizational diagnosis implies, among other aspects, the detection and analysis of dysfunctions, the classification of Prigogyn was considered for the purpose of the investigation. This divides the organizational pathologies into pathologies in the organization structure, in organizational relations and in managerial decisions.

The comparison of tools for organizational diagnostics shows that digital tools have a high degree of compliance with the criteria previously established for conventional tools (Tab. 1). This is related to a high degree of automation and standardization in the collection and analysis of key indicators. The opportunity to understand behavior and motivational reasons is provided by the use of artificial intelligence. As with the other tools, only a relative statement about personal or group goals can be obtained.

The collected data about the efforts by using the methods of organizational diagnostics are compared with the capabilities of digital systems depending on organizational pathologies [4]. This comparison is presented in the (Tab. 2). Clearly, the digital tool provides a better effort-performance ratio for the detection and analysis of dominance of structure over function (analysis of event-structure-time chain), duplication of organizational order, ignoring the organizational order, the gap between decisions and their implementation (elimination or control of disfunction due to usage of task management subsystem).

Table 1

Comparison of methods according to organizational criteria

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Organizational diagnostic methods	real time perception	prompt receipt of information	objectivity of data	opportunity to understand the behavior	flexibility of research attitudes	globality of investigated situation	differentiation and identification of features of situation	possibility of recurrence of situation	data on the goals and motivations of behavior	objectivity of observer	possibilities for generalization
1	•••	•••	•	••	••	•	••	•	•	•	•
2	•	•	••	•	••	••	••	••	•	••	••
3	•	••	••	••	••	•	•	••	••	••	••
4	•••	•••	•	••	••	•	••	•	••	••	•
5	•••	••	••	••	••	•	••	•	••	••	••
6	••	••	••	••	••	•	••	•	••	••	••
7	•••	•••	•••	••(*)	••	•••	•••	•••	••(*)	•••	•••
1 - Observation						• low intensity of the criterion					
2 - Document review and analysis						•• medium intensity of the criterion					
3 - Questionnaire survey						••• high intensity of the criterion					
4 - Interview											
5 - Testing											
6 - Focus groups											
7 - Digital methods (provided through digital tool)											

Table 2

Comparison of tools according to organizational dysfunctions

Organizational dysfunction	Effort by conventional diagnostics	Effort by digital diagnostics
Dominance of structure over function	••	•
Unit autarky	••	•••
Function incompatibility	••	••
Bureaucracy	••	••
Personal conflict	•	•(*)
Uncontrollability	••	•••
Stagnation	••	••
Impersonality	•	••
Dominating of personal over professional	••	•••
Dispersal of the corporate goals at the division and employee levels	••	•••
Pendulum decisions	••	•••
Duplication of organizational order	••	•
Ignoring the organizational order	••	•
The gap between decisions and their implementation	•••	•
Inversion	••	•••
Demotivating leadership style	••	••(*)
Hindering development through functionalization	••	••
• low effort		
•• medium effort		
••• high effort (or detection of dysfunctionality hardly possible)		

The results of the analysis demonstrate that the conventional methods of organizational diagnostics can be represented or implemented using appropriate digital tools (Tab. 3).

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Table 3

Replacement of organizational diagnostic methods through digital tools

Organizational diagnostic methods	Realization with digital tools
Observation (the behavior of certain employees, employee groups, characteristics of the organizational environment)	Digital assistant (virtual, natural language, voice, text)
Document review and analysis (official documents of the organization like statutes, decrees, orders, corporate code; research data, evaluation procedures; logos, emblems; videos; photographs etc.)	Document management system, algorithm for searching and analysis of data
Questionnaire survey (individual, group, mass survey)	Digital assistant (virtual, natural language, voice, text); survey application
Interview (retrospective, introspective, projective)	Digital assistant (virtual, natural language, voice, text)
Testing (skills and ability, achievement, personal, projective tests, including psychodiagnostic methods)	Digital assistant (virtual, natural language, voice, text); algorithm for searching and analysis of data, survey application
Focus groups	Digital assistant (virtual, natural language, voice, text), connector to communication software, algorithm for searching and analysis of data

The analysis of current knowledge about the purpose, content and methods of organizational diagnosis leads to the formulation of the following general requirements for digital tools.

- Precise design of the digital system: in order to obtain the most realistic results possible and to ensure the effectiveness of the digital tool, all causal relationships between individual elements must be defined [1].
- Applying quantitative indicators to determine the current state of the organization. In the case of qualitative measures, these must be interpreted as fuzzy values, for example.
- Access to the relevant documentation → Digital management of documentation
- For hybrid solutions: access to the findings from surveys, tests, etc.

The organizational diagnostic process using conventional methods and tools consists of the following phases:

- I. Development of a conceptual diagnostic model.
- II. Collecting information about the actual state of the organization.
- III. Analysis of the received data and development of recommendations.

Considering that digital tools use the same model to perform the diagnosis, the first phase will be eliminated. For each diagnostic iteration, phases II and III will be repeated. Therefore, it can be concluded that the implementation of digital organizational diagnostics reduces the number of phases.

Conclusions. Digital tools for organizational diagnostics offer potential in supporting management in the continuous monitoring and analysis of the organizational status against predefined goals. The advantages of digital tools include objectivity of diagnosis (diagnosis method is standardized and fully automated, all processes follow the same pattern; no influence of the observer), continuity (diagnosis takes place in the background of the work process; all events are recorded and analyzed without interruption), better quality of the data collected (employees know that the organizational environment is being observed and permanently demonstrate natural behavior), increased effectiveness through learning effects (depending on the used technology), compliance with ethical principles (respect for individual dignity, rights and freedoms, privacy, awareness and voluntary consent of the research participant, principle of competence, principle of liability, of integrity). The main difference between conventional and digital tools for organizational diagnostics is the use of resources: the digital tools eliminate the need for personnel during the actual collection and analysis of data. Accordingly, the preparation effort and costs are much higher than with conventional tools.

Nevertheless, the implementation of such tools is connected with considerable effort. This consists of creating the system, redefining and reevaluating key performance indicators that can be used as a basis for diagnosis. A potential goal in the development of digital tools is the detection of disfunctions

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and other poorly measurable indicators. Therefore, design and dimensioning a digital tool requires rethinking existing criteria and metrics.

Analysis of evaluated existing tools and opportunities of digital tools reveals that although some purposes are not directly accessible, digital tools can provide a remedy for management or even consultants through continuous organizational data management.

References

- 1 Barão, A., Da Silva, A.R. (2012) What is the value of your network? *Proceedings of the 2012 IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology Workshops, WI-IAT 2012* 6511690. (pp. 265-269) DOI: 10.1109/WI-IAT.2012.267 [in English].
- 2 Dietscher, C., Pelikan, J. (2016) Health-literate healthcare organizations: Feasibility study of organizational self-assessment with the Vienna tool in Austrian hospitals [Gesundheitskompetente Krankenbehandlungsorganisationen: Machbarkeitsstudie zur organisationalen Selbstbewertung mit dem Wiener Instrument in österreichischen Krankenhäusern]. *Pravention und Gesundheitsforderung*, 11 (1), 53-62. DOI: 10.1007/s11553-015-0523-0 [in German].
- 3 Farris, J. A., van Aken, E. M., Letens, G., Chearksul, P., Coleman, G. (2011). Improving the performance review process: A structured approach and case application. *International Journal of Operations and Production Management*, 31(4), 376-404. DOI: 10.1108/01443571111119524 [in English].
- 4 Goffnett, S. P., Lepisto, L., Hayes, R. (2016). Using the socio-economic approach to management to augment Lean Six Sigma. *International Journal of Productivity and Performance Management*, 65 (1), 80-97 DOI: 10.1108/IJPPM-02-2014-0028 [in English].
- 5 Govender, P., Parumasur, S.B. (2016). Organizational diagnosis, the stepping stone to organizational effectiveness. *Corporate Board: Role, Duties and Composition*, 12(2) (Continued 1), 65-76. https://virtusinterpress.org/IMG/pdf/1022495_cbv12i2c1art1.pdf [in English].
- 6 Immordino, K.M. (2017). *Organizational assessment and improvement in the public sector workbook*. DOI: 10.1201/b15860 [in English].
- 7 Mathieu-Fritz, A., Smadja, D., Espinoza, P., Esterle, L. (2012). Telemedicine and geriatrics. Older patients' place in the telegeria network of remote medical consultation facilities [Télémédecine et gériatrie: La place du patient âgé dans le dispositif de consultations médicales à distance du réseau télégeria]. *Gerontologie et Societe*, 141 (2), 117-127 DOI: 10.3917/gS.141.0117 [in French].
- 8 Nathan Perkins, L., Valerdi, R., Nightingale, D., Rifkin, S. (2010). Organizational assessment models for enterprise transformation. *20th Annual International Symposium of the International Council on Systems Engineering, INCOSE*, 1, 809-823. DOI: 10.1002/j.2334-5837.2010.tb01106.x [in English].
- 9 Oltmanns, G.V. (2004). Organization and staff renewal using assessment. *Library Trends*, 53(1), 156-171 <https://www.ideals.illinois.edu/bitstream/handle/2142/1031/LT-53-1.pdf> [in English].
- 10 Prigozhin, A.I. (2003) *Methods of organizational development. [Metody razvitiya organizatsiy]*. Moscow: MCFJeR [In Russian].
- 11 Sayadi, S., Sheikh, A., Oskouei, S.K.M. (2015). Identify

Література

- 1 Barão, A., Da Silva, A.R. (2012) What is the value of your network? *Proceedings of the 2012 IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology Workshops, WI-IAT 2012* 6511690 (pp. 265-269) DOI: 10.1109/WI-IAT.2012.267.
- 2 Dietscher, C., Pelikan, J. (2016) Health-literate healthcare organizations: Feasibility study of organizational self-assessment with the Vienna tool in Austrian hospitals | [Gesundheitskompetente Krankenbehandlungsorganisationen: Machbarkeitsstudie zur organisationalen Selbstbewertung mit dem Wiener Instrument in österreichischen Krankenhäusern]. *Pravention und Gesundheitsforderung*, 11 (1), 53-62 DOI: 10.1007/s11553-015-0523-0.
- 3 Farris, J. A., van Aken, E. M., Letens, G., Chearksul, P., Coleman, G. (2011) Improving the performance review process: A structured approach and case application. *International Journal of Operations and Production Management*, 31 (4), 376-404 DOI: 10.1108/01443571111119524.
- 4 Goffnett, S.P., Lepisto, L., Hayes, R. (2016) Using the socio-economic approach to management to augment Lean Six Sigma. *International Journal of Productivity and Performance Management*, 65 (1), 80-97 DOI: 10.1108/IJPPM-02-2014-0028.
- 5 Govender, P., Parumasur, S. B. (2016) Organizational diagnosis, the stepping stone to organizational effectiveness. *Corporate Board: Role, Duties and Composition*, 12 (2) (Continued1), 65-76 https://virtusinterpress.org/IMG/pdf/1022495_cbv12i2c1art1.pdf.
- 6 Immordino, K. M. (2017) *Organizational assessment and improvement in the public sector workbook*. - P. 159 DOI: 10.1201/b15860.
- 7 Mathieu-Fritz, A., Smadja, D., Espinoza, P., Esterle, L. (2012) Telemedicine and geriatrics. Older patients' place in the telegeria network of remote medical consultation facilities | [Télémédecine et gériatrie: La place du patient âgé dans le dispositif de consultations médicales à distance du réseau télégeria]. *Gerontologie et Societe*, 141 (2), 117-127 DOI: 10.3917/gS.141.0117.
- 8 Nathan Perkins, L., Valerdi, R., Nightingale, D., Rifkin, S. (2010) Organizational assessment models for enterprise transformation. *20th Annual International Symposium of the International Council on Systems Engineering, INCOSE 2010* 1, pp. 809-823 DOI: 10.1002/j.2334-5837.2010.tb01106.x.
- 9 Oltmanns, G. V. (2004) Organization and staff renewal using assessment. *Library Trends*, 53 (1), 156-171 <https://www.ideals.illinois.edu/bitstream/handle/2142/1031/LT-53-1.pdf>.
- 10 Пригожин А. И. Методы организационного развития. — Москва: МCFJeR 2003 — С. 863.
- 11 Sayadi, S., Sheikh, A., Oskouei, S.K.M. (2015) Identify the organizational culture of Saderat bank in Tehran and determine its relationship with employees performance.

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the organizational culture of Saderat bank in Tehran and determine its relationship with employees performance. *Research Journal of Applied Sciences*, 10(10), 531-535. DOI: 10.3923/rjasci.2015.531.535 [in English].

12 Sergio, M. V., Juan, M. R., Roberto, H. S. (2018). Complexity and dynamics, the need to consider them in organizational assessment [Complejidad y dinámica, la necesidad de considerarlas en la evaluación organizacional]. *Revista de Ciencias Sociales*, 24(2), 9-23. http://www.scielo.org.ve/scielo.php?script=sci_issuetoc&pid=1315-951820180002&lng=en&nrm=iso [in English].

13. Van Breukelen, W., Makkenze, S., Waterreus, R. (2014). The core aspects of the new way of working and a checklist to measure these aspects [Kernaspecten van het nieuwe werken en een checklist om deze in kaart te brengen]. *Gedrag en Organisatie*, 27 (2), 157-187. Retrieved from https://www.gedragenorganisatie.nl/inhoud/tijdschrift_artikel/GO-27-2-157/Kernaspecten-van-Het-Nieuwe-Werken-en-een-checklist-om-deze-in-kaart-te-brengen [in English].

Research Journal of Applied Sciences, 10 (10), 531-535 DOI: 10.3923/rjasci.2015.531.535.

12 Sergio, M. V., Juan, M. R., Roberto, H.S. (2018) Complexity and dynamics, the need to consider them in organizational assessment [Complejidad y dinámica, la necesidad de considerarlas en la evaluación organizacional]. *Revista de Ciencias Sociales*, 24 (2), 9-23 http://www.scielo.org.ve/scielo.php?script=sci_issuetoc&pid=1315-951820180002&lng=en&nrm=iso.

13. Van Breukelen, W., Makkenze, S., Waterreus, R. (2014) The core aspects of the new way of working and a checklist to measure these aspects [Kernaspecten van het nieuwe werken en een checklist om deze in kaart te brengen]. *Gedrag en Organisatie*, 27 (2), 157-187 https://www.gedragenorganisatie.nl/inhoud/tijdschrift_artikel/GO-27-2-157/Kernaspecten-van-Het-Nieuwe-Werken-en-een-checklist-om-deze-in-kaart-te-brengen.

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