

# Usage of the hidden feature of the DIKW model for determining the object of functioning

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## Abstract

This thesis addresses the approach of restoring the operations of an organisation before and after eliminating the consequences of its withdrawal from an unstable condition. The approach is based on a synthesis of two systemic subsystems within the system of a functioning object. The operating capability of an object is determined in reliance upon a set of means obtained in the course of converting the ideal DIKW model for adjustment to the two oriented circuit scheme. The premise for such conversion was the new feature of the DIKW model.

*Keywords:* methodology, circumstance, lever, restoration, life activity, chance

## 1 Introduction

The proposed methodology allows determining the active object of functioning. Working with such objects represents the natural state of an organisation, when destructive forces such as disjoint and disinformation, while being under external influences, do not pose any threat to the organisation. This is achieved thanks to effective operating levers, which, if implemented in a timely manner, allow preventing the spread of disturbance across the organisation that would otherwise require many years of restoration [1].

Considering the emphasized moments, it is concluded that the new conditions of the organisation's life activities contradict the standing norms of goal setting.

The identified contradiction brought about the understanding of the problem of the study, essentially formulated as follows: "It is impossible to ensure seamless functioning of an organisation in the absence of any means of survival that would be effective in the setting of influence of large-scale circumstances".

## 2 Methodology

This led to the appearance of key grounds for allocating the object of the study aimed at finding a chance to save an organisation that is currently in a critical condition. Fulfilment of the chance is tested within a subsystem of targeted influence aimed at the elimination of consequences of the identified circumstance. In such situations, the active circumstance not just causes disjoint within an organisation, but also disables its reaction to numerous, regular and imperceptible repetitions, accumulation of which can bring about the demise of this organisation. This causes the need for a subsystem allowing to identify the symptoms typical for an organisation that is affected by a large-scale circumstance over a lengthy period of time. This subsystem forms a basis for an organisation to rectify its critical situation that could otherwise lead to its destruction. In terms of systemic elements, this refers to the objective part of the object of functioning oriented towards maintaining the constancy of a set goal. Figure 1 shows the circuit of a subsystem obtained by means of transforming the DIKW model.

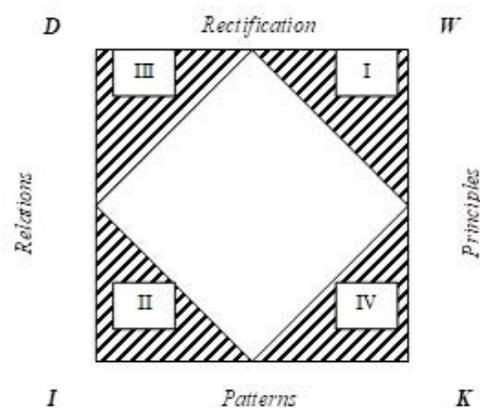


Figure 1 Layout of presentation of a goal-oriented DIKW model as a closed circuit

This circuit is obtained by means of introducing the positive feedback "Remediation" into the DIKW model [2]. The hatched areas represent the zones of potential loss of functioning.

The drawback of the presented model scheme is its circularity and isolation from the external environment. The thing is, the subject within such schemes acts as the object at the same time. In other words, withdrawal from the idealisation of the DIKW model has allowed to relocate the functions of setting the rules of functioning of the object from the standpoint of studying its behaviour through the efforts of the organisation. Within the boundaries of such system describing the object of functioning, it is impossible to ensure timely reaction to external circumstances. This is due to the fact that the circuit of the system does not receive information from the external environment. Essentially, the subject circuit must be introduced into the DIKW scheme. This problem was solved using the methodology described in the book [3]. The methodology mentions four elements that belong to the functional component class of the first level of the goal system. Such elements describing the life activity of an organisation were introduced by the authors of the DIKW model [4], but were never used in practice. Association of the four keys, specifically, "good", "truth", "beauty" and "abundance" provides an opportunity to obtain a means of tracing powers of authority that affect the goal orientation of a system, which eventually shapes the idea of the subject area of the management system within the

context of the active object of functioning. Figure 2 depicts the external circuit of influence of the subjective part of the object of functioning.

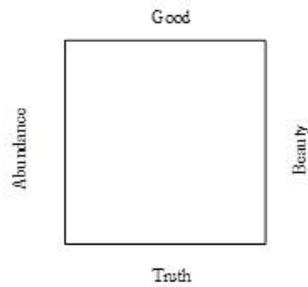


Figure 2 Detailed specification of the DIKW from the standpoint of the circuit described in terms of life activity of the object of functioning

The second circuit is a subsystem for supporting the life activity of an organisation that allows identifying large-scale circumstances.

Figure 3 depicts the influence of the external circuit on the object of the system initially described in terms of the subject circuit.

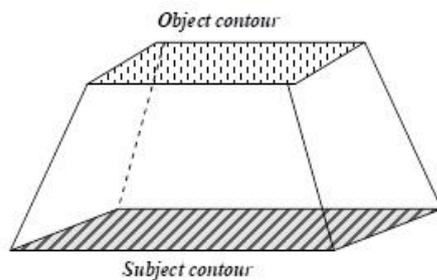


Figure 3 Detailed specification of the DIKW from the standpoint of the circuit described in terms of life activity of the object of functioning

The size of the subject subsystem is less than the area of the subject zone because the restrictions that determine the vitality of an organisation are stricter.

Projection of the external circuit onto the subject area allowed shaping an idea of the object of functioning [5]. Its description is provided in the course of disclosure of the goal of the study summarised as the development of a set of procedures allowing an organisation to deal with a complicated situation. Four objectives were set to achieve the desired goal:

- 1) assess the current position of the organisation within the boundaries of the strategic field of the object of functioning;
- 2) determine the symptoms of failure to react to the manifestations of influence of large-scale circumstances and substantiate the way of

## References

[1] Dyakon O, Dyakon R, Kopitov R 2014 Comprehension of Management Problems Forms Understanding of Business Tasks *The 12<sup>th</sup> International Conference Information Technologies and Management 2014, April 16-17, 2014*, ISMA, Riga, Latvia 186-7

[2] Kamforina O 2017 Classification of factors that affect loss of sustainability in organization *The 15<sup>th</sup> International Conference Information Technologies and Management 2017, April 27-28, ISMA, Riga, Latvia* 187-9

[3] 2009 *Теория систем и системный анализ в управлении*

remedying the current situation;

- 3) adjust the strategic plan of development of the organisation within the setting of restoring normal functioning;
- 4) systematise faults from the standpoint of identifying the main circumstance using the means of prospective prevention of the loss of performance ability.

## 3 Results

Achieving the objectives listed above led to the development of a method for shifting from the ideal-oriented model to the systems that describes an object of functioning that changes over time. Such system is obtained by means of combining two circuits. Fig. 4 shows the strategic field of the system, which includes the area of sustainable functioning, as well as eight performance loss areas (see Figure 4).

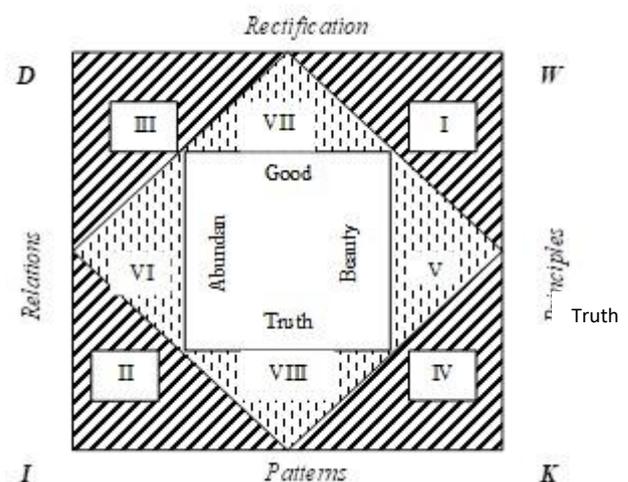


Figure 4 Strategic field of the object of functioning within the DIKW model

## 4 Conclusions

This resulted in the development of an algorithm for the calculation of coordinates of the strategic position of an organisation from the allocated zones of the object of functioning. Apart from that, the study has identified a method for structuring and assessment of the goals of a system from the aspect of the active object of functioning. Thus, developers of the management system acquire a means of shaping a separately organised complex for the assessment of the strategic position of an organisation and development of measures for restoration thereof in case of influence of large-scale circumstances.

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[4] Акофф Р, Эмери Ф 2008 *О целеустремленных системах* Москва: Либроком 272 с

[5] Kelsina D, Kopitov R 2019 Algorithms of the Company's Loyal Maintenance *6th International Scientific Conference on Social Sciences and Arts SGEM 2019, Bulgaria, 24 August - 2 September, 2019, Conference Proceeding Book* 365-74