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## PHILOSOPHICAL BASES OF IMPROVEMENT OF PARADIGM DEVELOPMENT METHODOLOGIES

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### Abstract

The analysis of modern literary sources shows that the paradigms of the main areas of human activity were developed in 2013–18, using only time-based methods. However, in 2019, the development of paradigms of mechanics showed that they depend not on time, but only on space. Therefore, there arose a problem: when, where and how to apply the space-based method and the time-based method. This is a problem of improving the methodology for developing paradigms – global strategies, strategies of the behavior of mankind as a whole in a specific area of activity. The analysis of recent studies and publications indicates that this problem has not even been raised in world literature and research practice. In the coming new era, the depletion of basic natural resources of the planet and the aggravation of the need to develop a new, third generation of paradigms will only urge the importance of solving this problem. Therefore, the aim of the research is to improve the methodology for developing paradigms. For this purpose, the following tasks are solved:

- the analysis of the level of knowledge about space, time and matter is carried out;
- the essence and content of space, time and matter is determined;
- the nature of the relationship between the space- and time-based methods is determined;
- the nature of the connection of space- and time-based methods with matter is established;
- a brief description of the results obtained is given.

Research methods: review of literary sources; historical and logical method; analog method; 2C70; VEO; Babailov's method.

Results: the matter-based methodology as the only methodology for the development of paradigms is created.

Scientific novelty: the composition and sequence of the application of methods for the development of paradigms – space- and time-based methods and the matter-based methodology are streamlined.

Practical relevance: the implementation of the matter-based methodology in the practice of developing paradigms will result in improving the methodology of strategic planning in an enterprise, which in turn will increase the efficiency of its management and production.

**Keywords:** space, time, matter, methods, methodology, paradigm, strategic planning.

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### 1. Introduction

It is known from scientific literature that paradigms of main activity spheres were elaborated in 2013–2018, using only the time-based method [1]. But the development of mechanics paradigms in 2019 demonstrated that they don't depend on time and can be elaborated by the space-based method only [2]. So, there appeared a problem – where, when and how to apply the method of time and the one of space. This problem of methodology imperfectness has not been solved till now. For its solving it is necessary, first of all, to deepen the understanding of space, time and matter themselves. Probably for the first time in the longstanding research economic practice the author face a need to understand philosophy deeper.

But practical and especially production managers may face a question – is it so important for the production organization practice to define rigorously such as if “beyond the clouds” notions as “space”, “time”, “matter”. The authors are sure that the deepening of understanding space, time and matter as a whole leads to positive results of not only theoretical, but also practical type, not only to the deeper understanding of a paradigms nature, but also to the improved methodology of their development, raised effectiveness of the strategic planning practice. This publication is just aimed at the maximally narrow, applied, practical aspect of enterprise management – at the improvement of the paradigm development methodology as the most important aspect of strategic planning.

It is necessary to stress, that the problem of deepening the understanding of methods of paradigm development, space and time-based methods, problem of the improvement of the paradigm development methodology has not been stated in word literature and research practice till now. In the coming new epoch the exhaustion of main natural resources of the planet and aggravation of a need in developing the new, third generation of paradigms only intensifies the topicality of solving this problem. The modern practical level of paradigm development requires that its methodology was not limited by the only space or time-based method (as it has been considered till now). Practice demonstrated that there is an acute necessity to improve the methodology of paradigms development by applying both time- and space-based methods.

**The aim** of this study was to improve the existent paradigm development methodology.

## 2. Materials and methods

A peculiarity of the methodology, chosen for this study, is that at analyzing space, time and matter as a whole, the special attention was paid to defining, first of all, their essence and content [2], because just these aspects make the maximal contribution in a notion. That is why methods 2C70; VEO; Babaylov method were applied first of all for solving the problem [3, 4].

At solving the first problem, it has been established, that the problem of defining different aspects of space, time and matter was tried to be solved by greatest thinkers of different epochs. For this aim the analysis of views of scientists, made the special, outstanding contribution in their understanding, was carried out. According to the author, in the context of this study, it is necessary to include in this list, first of all, Heraclitus (544–483 bc), Anaxagoras (500–428 bc), Plato (429–347 bc), Aristotle (384–322 bc), Newton (1642–1727), Hegel (1770–1831), Einstein (1879–1955).

The ancient Greek philosopher from Ephesus, Heraclitus, defined properties, common for all phenomena, for the first time by introducing the notion “all”. According to him, properties, inherent to all, are expressed by the brief phrase: “All flows, all changes” (from ancient Greek: *Panta rhei*) [5]. That is, according to Heraclitus, “All” is in the permanent movement. But he didn’t connect the notion “all” with the ones “essence”, “matter” and moreover with the notion “matter essence” yet.

Anaxagoras noted such important property of matter as infinity [6].

Plato separated two elements in matter: substance and form, life of the substance world and life of the ideas one [7]. He understood substance only as a fact of its existence. At that Plato assumed that two elements existed separately.

The outstanding Plato’s follower, Aristotle, also included substance and form in matter, but he was categorically against their separate existence; he considered them only in unity, without which they didn’t exist at all [7]. Aristotle paid attention to the interpretation of such important notions as “essence”, “movement”, “space”, “time” [8]. But he paid more attention to movement and space (place as it called it); said less about time. Aristotle defined movement as “change in general”. He even didn’t suspect that he defined the essence of movement in such a way, because just the notion “essence” was considered by him separately from both movement and matter. Aristotle didn’t deny also such property of matter as “infinity” [8].

Unlike Aristotle, Newton paid the special attention just to the notion “time”; he thought that “... in contrast to other movements that can accelerate or decelerate, time is absolute, it depends on nothing, flows with the constant speed, is equal everywhere, in whole matter, flows from past to future”. “All movements can accelerate or decelerate, but the flow of absolute time cannot change” [9].

Hegel developed, deepened Aristotle's views: he formulated for the first time three main laws of philosophy (law of interrelation between measure, quality and quantity; law of unity and fight between oppositions; law of negation of negation) [4]. He also paid the great attention to the interpretation of space and time. The most correct and brief definition of just the notion "essence" as the main property of any phenomenon also belongs to him [4]. But at the same time he didn't formulate the essence and content of matter.

The outstanding scientist of XX century Albert Einstein formulated exceptionally deep ideas about matter, space and time, connected with philosophical understanding of greatest successes in the development of quantum mechanics. He denied for the first time the previous dominant Newton's opinion about constancy, absoluteness of time. Einstein agreed with Newton only in the fact that time flows. But Einstein specified: time flows differently in different parts of space, moving with different speeds. In his relativity theory he demonstrated that time is not absolute, as Newton stated it, but relative, it depends on movement speeds of objects; for example, in objects, which speed is close to the light one, time decelerates [10]. But together with his great precursors, Einstein didn't formulate the essence and content of matter, space and time, at interpreting matter.

It is necessary to pay attention also on such important aspect of matter as its connection with so-called "consciousness", on the problem of primacy-secondarity of matter or consciousness. All discussions between idealists and materialists can be reduced to the following. Idealists (especially, Hegel) assumed that matter as a very complex phenomenon was constructed by somebody at the beginning, so it is secondary, and some highest spirit, that created it, is prior.

Materialists, in their turn, stated that matter was before human, its consciousness, so matter is prior. It must be noted, that modern authors underline: "Aristotle never stated that matter is prior to idea. A lot of his statements are directly opposite. ... his main tendency coincides with positivism..." [11]. And further there: "Plato was the creator of idealism, but his great follower, Aristotle,... became the creator of realism. The notion "realism" must be interpreted there as not "materialism", but rather as latter European "positivism".

Unlike Plato, Aristotle was interested in not so much the internal essence of being, fundamental principle of the world as such, but interrelations between different things and notions. Like positivists, he didn't rush deep into, but disintegrated in parts. Just that is why the most important part of philosophy of both Aristotle and positivists is not metaphysics, but logics" [11].

And one more remark that enlightens the deepening of matter understanding, the problem of its primacy-secondarity. Last time the hypothesis of the Universe origin as a result of "explosion", that is its appearance from so-called "nothing", "nil" gains popularity [12]. In this context we must not neglect not so fantastic biblical dogma: "Look at sky and earth and, seeing all on them, cognize that the God created all from Nothing" [13].

But "nothing" it is not even simple, not trivial notion, - it is "nothing" in the not primitive, routine understanding, but in the deep philosophical and methodological sense; "nothing" it is just very "thing", something rather real. Thus, at a nuclear explosion, fantastic energy releases from "nothing". "Nothing" can be a result of an interaction process, reverse, opposite to the "explosion", as annihilation of antipodal phenomena, such as, for example, interaction between substance and antimatter. But "nothing" for human it is a special form of matter, because in contrast to its other forms, it is not perceived by human senses, but only logic, mind. However, matter in all its forms doesn't depend on human that is why "nothing" must be also considered on a pair with its other forms. Nothing it is a certain store, reservoir of all other forms of matter, from which they are extracted in forms that human senses are able to perceive. However, we must not reduce "nothing" to vacuum (absence of air only).

There are not unnecessary the following two conclusions about the problem of primacy-secondarity of matter or consciousness. The first one: just very statement of the problem of primacy-secondarity is simply incorrect and farfetched, because consciousness is matter too. The second one: the idea (maximum hypothesis) about primacy-secondarity contradicts to the principle, more precisely – the law of unity, the law of continuity, the law of simultaneity of: space and time; substance and spirit and other forms of matter that cannot, as Aristotle stated it, exist separately. But notwithstanding to it, separate fragments, thorn from the general law of simultaneity, may be

comprehended as primary or secondary. Thus, *prima facie*, such matter fragment as production planning looks prior to the following (secondary) material matter fragment – production. But an error is in the fact that production planning itself is subordinated to the more general law – the law of simultaneity, because it is described on real facts of a condition of the previous production only! And vice versa, production cannot be realized without its planning. That is production planning and production in the deep sense don't exist without each other; just this excludes their separate (primary or secondary) existence. Production planning and production exist only in continuity, in unity, in simultaneity!

### 3. Results

At analyzing, studying such complex notion as matter, it is necessary to pay attention also on neglect of certain authors at interpreting matter and free use of such important notions as “nature”, “universe”, “world” besides with it. They all the same differ from matter by their meaning. And if they were mixed up by ancient Greek philosophers, it is clear: they were in the very beginning of the way in matter cognition yet. In addition, translators could make their contribution in mixing these notions with matter. So, we must differentiate matter, nature, universe, world. Only in rare context they may be close by meaning. But it is better not to use them besides, very close to the term “matter”.

The author's solution of the second problem of the study must be related to the new development stage of views on matter, space and time. The main attention in it concentrates on the definition just of their essence and content. For this aim, there is applied the new research methodology, based, first of all, on methods 2C70 and VEO [2, 3]. At that the authors don't ignore, but follow the most advanced, imperishable, achieved in doctrines of both remote past and modern researchers.

Thus, it is necessary to take from Heraclitus' doctrine the notion “all” and its most important property – constant change, movement, flow [5]; from Anaxagoras' philosophy – the most important property of matter – infinity – as the third property of matter by importance after essence and content [8]; from Aristotle's doctrine – the main sense of matter as a unity of material and immaterial (substance and “form” by his expression); and also separate true ideas about space, time and especially about movement, in which he in fact unconsciously defined its essence as “change in general” [6].

It is necessary to take from Newton's doctrine the definition of such time property as its “flow”, taking into account certain limitation of his interpretation of time as unchangeable and absolute [9].

Among Hegel's heritage the methodology, namely, the method of unity of historical and logical is valuable in the context of these research problems [4]. Hegel found just in it the practical application of the most important part of matter – time. Just time as an element of matter became the base of his method. It presupposed that it is always necessary to consider all phenomena in different periods of time, in the close connection with change in time, depending on time.

Among Einstein's heritage most valuable is the absolutely new understanding of time – its relativity, in contrast to Newton's dominant understanding of time absoluteness [10].

But, neither Heraclitus, nor Anaxagoras, nor Aristotle, nor Hegel, nor Newton, nor Newton literally formulated the essence and content of matter, space and time. It is despite the fact that Hegel reached the correct understanding of essence itself as the main property of any phenomenon [4].

Summarizing and generalizing different views on matter, the author made the following conclusions:

– Heraclitus was very close to understanding the notion of matter. But he didn't lead it to the logic final, because he considered the notions “matter”, “essence” and “all” separately and didn't establish their connection. That is why these three important notions, closely connected for the aim of this study, must be simply integrated in one brief key phrase: “The essence of matter is all”! This is the most important property of matter! At that the opposite is true too: “All is matter”! “Matter” and “all” are identical notions and phenomena and synonymic terms. Matter (all) is in the constant movement, flow. The main law of matter puts all at own places and makes scholastic discussions around the problem of primacy-secondarity absolutely unnecessary, senseless farfetched.

- The content of matter or all includes two main elements: space and time.
- The essence of space as its main property is its extent (infinite, finite and infinitely small in “nothing”) the content of space: length, width, height.
- The essence of time is its continuous flow, continuance, duration (finite, infinite, and infinitely small in “nothing”); the content of time: past, present, future.

The obtained results are a consequence of using modern research methods 2C70 and VEO by the authors [2, 3]. Just their use puts a point, more exactly, – an exclamation mark in solving the problem of matter definition! Matter is all; it is its essence and main law! There is nothing but matter, nothing ever was and nothing will ever be! All, finite and infinite; material and immaterial, real and virtual; this all is matter!

The sense of the main law, matter essence, also means that matter is not only all that is, but also all that was, and all that will be.

But matter as “all” absolutely doesn’t mean its definition as all only as a whole; matter as all – it is also separate part of the whole. At that, what it was can differ from what it is, and what it is – from what it will be. What it was in past, can be not in present or in future and vice versa. But what was, is and will be in Matter, are: Space and Time! “Matter doesn’t disappear and appear again – it only transfers from one condition to another” [14]; from one form to another. Matter has no beginning, no end, it is infinite in space and infinite (eternal) in time. But parts, forms of matter are finite, concrete in time and space. And all, finite in space (Earth, its nature, universe) is also finite in time. Space and Time are inseparable: if space exists (finite or infinite), time exists too and vice versa: if no space – no time too.

It is necessary only to warn of a conclusion about the matter form “nothing” as the absence of time and space in it. It is true only for the human perception of a phenomenon “nothing” as the absolute absence of all. But for matter nothing is its usual form like all other. That is, “nothing”, null it is reality, existence and not absence, although one of infinitely small extent of space duration and infinitely small continuance, duration of time.

Matter also must not be reduced to infinity. Infinity is important, but not main property of matter: finite is also present in matter. And the main property of matter, its essence: matter is all, literally all.

At solving the third problem, the authors proceeded from results of modern studies on paradigms development. They demonstrated that both time and space are obligatory, non-alternative methods for probating main laws, methods of developing any paradigms [2].

But at the beginning there was made a conclusion only about the property of paradigms to change in time. A conclusion about their changing also in space was made considerably latter – only after developing engineering and mechanics paradigms in 2018–2019 [2]. There was found out for the first time that there are spheres of activity, which main laws don’t depend on time, but only on space. Thus, the main law of mechanics “Mechanics is organization of any forces” doesn’t depend on time. For example, forces of attraction or repulsion don’t depend on time, – only on space [2]. That is why it can be stated, that there are only two types of phenomena, which main laws:

- Depend only on space (mechanics);
- Depend on both time and space (for example, main laws of economics, management, marketing, entrepreneurship, pedagogy).

This research is devoted to the most important and complicated second group of main laws and, correspondingly, to two methods of paradigms development: space-based method and time-based method. The question about a type of connection between the time- and space-based methods was solved, first of all, based on the development practice of an essential number of paradigms. Just generalization of the obtained experience led the authors to the following conclusion: at first the main law must be probated by the space-based method, and only then the time-based method can be applied.

And just here the moment of truth came – a necessity to clarify and specify the very name of the time- and space-based methods. The point is that, obviously, space and time themselves are not methods – they are named in such a way for short. They become methods, when a human establishes a way of their use for developing paradigms [15], way of solving a human problem [16, 17].



As it is demonstrated in [18], any methods appear only with problems, appeared in humans – there are no methods beyond human.

There are several concrete and brief commentaries about the space- and time-based methods. The space-based method is one of probation of the main law by a human, using space; it means the consequence of the following operations:

- The choice of a problem part of space that is the choice of an action space of paradigms, for example, the space of economy.
- Establishment of its main law (“Economy it is the organization of any cost”).
- The choice of a concrete part of economy (space variety), for example, economy of an enterprise (production) and concretization of the main law of economy (Economy of an enterprise it is the organization of cost of labor inputs”).

And the action of the space-based method finishes on it. And just after that the time-based method can be applied for developing paradigms! The time-based method it is a probation method of the main law by time, method of determining the predominant character of the main law of any phenomenon at changing (moving) time. Thus, the preferential character of the main law of the economy at an enterprise “Economy of an enterprise it is the organization of cost of labor inputs” may be of three types, depending on time. In the Pre-industrial time this main law was: “Economy is the organization of cost of mainly manual labor inputs”. In the industrial time the main law of economy had the other character: “Economy is the organization of cost of mainly machine labor inputs”. In the future Post-industrial time the main law of economy will be: economy is the organization of cost of mainly entrepreneurial labor inputs.

Such three types of the main law, probated by time, are just paradigms of the correspondent time intervals (epochs) as global strategies of manual, machine and entrepreneurial labor, respectively. Just paradigms are the result of using the time-based method.

The conducted analysis of the time-based method made it also clear that it is nothing else that a concrete expression of Hegel’s method of unity of historical-logical, applied now to the solution of the concrete problem – paradigm development [4].

The fact of necessity to apply two methods of paradigms development (time- and space-based methods) and strict sequence of their application leads to the important conclusion about the presence, formation of the integral *methodology*. And taking into account that time and space form matter, it is logical to name this methodology of paradigms development *matter-based methodology*.

#### 4. Conclusions

As far as paradigms are elaborated only using the time- and space-based methods, the matter-based methodology is the single one for paradigms development.

The following obtained results of the conducted studies are necessary to be presented as a conclusion:

1. The essence of matter “Matter is all” has been established.
2. The content of matter as space and time has been specified.
3. The essence of space as extent; the content – as width, length and height have been defined.
4. The essence of time as its continuance, flow; the content – as continuance of past, present and future have been defined.
5. The strict sequence of application of the time- and space-based methods at developing paradigms has been substantiated (at first the space-based method is applied, and then the time-based one).
6. It has been proved, that the strict sequence of application of the time- and space-based methods form the matter-based methodology.
7. It has been established, that just and only the matter-based methodology can provide paradigms development.
8. It has been established, that matter is a notion of not only philosophy, but also methodology.
9. The notions “space-based method” as a probation method of the main law by space, and “time-based method” as a probation method of the preferential character of the main law of any phenomenon at changing (moving) time have been specified.

10. The aim of this study was, undoubtedly, provided, first of all, due to applying methods 2C70 and VEO; positive results would be just impossible without them!

The main result of this study is two conclusions:

– Matter is all.

– The matter-based methodology is the single methodology of paradigms development.

Creation of *the matter-based methodology as the single methodology of paradigms development* results in deepening the understanding of nature and paradigms themselves.

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