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Methodology for Diagnostics of the Company Management and Technological Maturity

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ABSTRACT

Approaches to the measurement and assessment of the company technological maturity level and management maturity apart, formulated in scientific researches and practical recommendations, significantly differ according to their purpose, content and depth of the factors analysis. Studies of the company technological maturity and possibility for implementing business processes and certain IT technologies have become more advanced in some degree. The general idea of forming a model of diagnostics of the management and technological maturity is based on the determination of prevailing company system influence components. Management techniques are a nucleus of the model, and the innovation level of management techniques is an energy impulse inciting to development. Basing on the analysis performed, the author created a concept of levels of the company management and technological maturity considering the main parameters of the company management and technological maturity. A composite algorithm was proposed for determining the level of managerial technological maturity (LMTM), end exposition of a complex of management techniques to ensure the company dynamic progress based on determining a level of the management and technological maturity. The advantages and disadvantages are determined by the methodology. The performed approbation has confirmed the approach validity and its usefulness. The approbation shows the reliability and unambiguity of interpreting results. To use it for bigger enterprises and corporations, it is not even necessary to change identification parameters.

INTRODUCTION

In a climate of the accelerated technological, innovative and world economic development of the society, the issue of using modern technologies, techniques of production and management allowing to achieve not just the resource saving, thereby having the insignificant potential, but to develop rapidly and be ahead of other companies as well becomes more and more currently important (Rajnoha and Lesníková, 2016; Slávik and Zagoršek, 2016). In the management, the decisive resources are intellectual, information and financial ones, which are closely related to the

fleeting time factor. The technological development is going much faster than the financial saving and experience acquisition, what complicates the processes of learning and implementing the latest technologies, including managerial techniques as well (Angelovska, 2016; Infante & Smirnova, 2016; Pachura, 2017). Therefore, in our opinion, the problem of choosing managerial techniques in the context of financial and economic opportunities of a company, and the organization development potential is defined as strategically important and prevailing for every enterprise irrespective of its development size and form.

The practice of modern days shows that the Ukrainian businessmen, executives and top managers use primitive tools for managing companies (e.g. initial forms of benchmarking, "*to do like a rival firm does*"). If foreign investors or stakeholders demand that modern methods should be implemented, they just formally exist or even harm the company management process.

To simplify the procedure of practical implementation and smart use of the scientific progress and practical management mechanisms and models existing nowadays, we offer a general model.

The model of diagnostics of the management and technological maturity level according to specific parameters allows determining what actual level a company is at, and what management techniques should be used for changing a company state as desired so to ensure the dynamic growth.

1. ANALYSIS OF RESEARCHES AND PUBLICATIONS

Approaches to the measurement and assessment of the company technological maturity level and management maturity apart, formulated in scientific researches and practical recommendations, significantly differ according to their purpose, content and depth of the factors analysis (Witek-Crabb, 2016, pp. 669-682). Studies of the company technological maturity and possibility for implementing business processes and certain IT technologies have become more advanced in some degree. The sense of existing assessment methodologies centres on determining the company readiness to technologically update the IT system with no regard for updating the operational technologies, condition of equipment, status of the organizational and informational infrastructure, professional competences and company management techniques. Partially, the company maturity concepts can be found in ISO 9000, version of year 2000 (Hutsaliuk, 2012, p. 202; Majerník, p. 136).

The formation of technological components of the model of diagnostics of the management and technological maturity level was based on researches on assessing the technological maturity of the following models:

- The maturity assessment model designed by the West consulting companies Wipro, Real Story Group (previous name – CMS Watch), Smigiel Consulting Group and Harman Communicate (ECM3) Version2.0 , 2010).
- The technological maturity assessment model designed by the specialist of the company "Hawlett-Packard" (Galimov, 2008).
- The methodological approach offered by the consulting company "Infosys Technologies Limited" that is formed as a part of the company transformational development, authors R. Balaraman, and A. Mohan (Jung Hans-Helmuth, 2002).
- The determination of the technological maturity level, developed by the company "Directum", presented on the website of ECM-Journal ((ECM3) Version2.0 , 2010).
- The model for determining the maturity level of business processes is designed in the form of texts by the company "FineXpert.ru" (The method of organization diagnostics, 2011).

The formation of the management maturity components in the model of diagnostics of the management and technological maturity level was based on researches on assessing the following models:

- The model of Mellon Software Engineering Institute, USA, CMM. CMM (Capability Maturity Model) – a capability maturity model or a dynamic model of development of the company capability to design quality software (Mincberg et al., 2000).
- The maturity model by H. Kerzner focuses on the development level of project management (Project Management Maturity Model, PMMM) (Kercner, 2003).
- The model of the University of California, Berkeley (PM Maturity) allows to perform the quantitative assessment of the project management maturity (The method of organization diagnostics, 2012).
- The Organizational Project Management Maturity Model (OPMMP) is an international standard issued in 2003 by the Project Management Institute (Dziubina, 2010).

2. METHODOLOGY

The general idea of forming a model of diagnostics of the management and technological maturity is based on the determination of prevailing company system influence components. Management techniques are a nucleus of the model, and the innovation level of management techniques is an energy impulse inciting to development.

The first composing element of the innovation of management techniques is always a human being – an individual, a person taking decisions; and human capital assets themselves are a unique intellectual potential of a company (Fedotova et al., 2016, pp. 369-385). During the last 50 years most all researchers irrespective of a subject of scientific interests assert that the efficiency of implementing main competitive strengths of a company depends on the quality of taking managerial decisions and quality of a team, not just of the senior personnel of a company, but of the whole personnel of a company altogether (Gutkevych & Punchak, 2016; Wnuk-Pel, 2016).

The second element transforming the classical management approach into the innovative management techniques is a technological component; and in the age of total global information there are information and communication technologies at the first place, which allow using the world resources via auto-sourcing, leasing, powers delegation, consulting and manning. Of course, the company technological level, modern equipment are essential, but not primary for the present developmental stage of the scientific and technological progress opportunities.

The author thinks that the management and technological maturity level depends on the complex of management techniques implemented by a company. Change of the company development level either in a progressing or in a regressing direction is determined by using an adaptive complex of management techniques that are highly innovative. The coherence and fractality of the model of diagnostics of the management and technological maturity level are determined by means of the company management methods and techniques.

Management methods as a systematized combination of steps and stages necessary for completing a certain task and achieving an established goal sometimes integrate with the notion of actions plan or technological procedure.

A technique is a body of knowledge (conceptions, theories, principles, ways, methods, etc.) about analytical procedures, decisions taking and management of a company as a system of objects used for achieving the abovementioned managerial goals (directly or indirectly related to the use and coordination of company resources for producing goods and/or services). Techniques joined with an appropriate creative activity of the personnel assist a company in getting effective results within the context of selecting a dynamic development vector.

The innovative company management technique is a materialized result of implementing newly created or improved plans aimed to optimally and adaptively improve certain types of activity of a company or a system complex with the help of modern tools, methods and procedures based on the scientific and technological progress achievements so to create a coherent mechanism of dynamic development of a company.

Basing on the analysis performed, the author created a concept of levels of the company management and technological maturity considering the main parameters of the company management and technological maturity (developed by the author, Martyniuk, 2017, p. 84).

Table 1. Characteristics of the company management and technological maturity levels according to the results of existing models integration

Management and technological maturity level	*Characteristics of management at a predetermined level*
I level – training, specialized management (Initial)	Every time business processes go as for the first time; collection and processing of information are not regular; either internal or external data connections are spontaneous in general; management methods and tools are not used, or their implementation is chaotic; a unified management technique is absent; formalized procedures and management operations are absent; functioning and management are equated; target function – survival; no strategy.
II level – cyclical, management with planning features (Repeatable)	Main business processes become persistent; information collection and processing are nor regular in general, but the automatized accounting and HR management are initiated; data connections become stable and wider; management methods and tools are used not regularly, where appropriate; a unified management technique is absent; certain management techniques start being implemented; management needs are realized; target function – costs optimization; no strategy; effective activity/management mainly depends on appropriate present competencies of managers.
III level – process, process management (Processes)	Main company business processes are formalized; information collection and processing are regular; formation of a unified information flow has been started; data connections are generalized, controlled, planned; management methods and tools are permanently implemented; a unified management approach has been formed on basis of the gained management experience; most of problems are found and documented in management; use of specialized management techniques are activated; target function – profit maximization; strategy – a strategy process formation has been initiated; effective activity/management mainly depends on appropriate present competencies of managers.
IV level – progressive, progress management (Progress)	All the company business processes are formalized and improved when necessary and problems are present; a unified informational, totally automated company space has been formed; information is acknowledged as an important production resource; purposeful formation of a unified management technique through external consultants and purchase of widely used programmes of famous vendors; management problems are subject to the fundamental analysis, elimination and prevention; target function – business expansion (enlargement of a market segment, profit maximization, self-image development); strategy – a company strategy has been formed; effective activity/management depends on selected management techniques.
V level – dynamic, management and sustained improvement (Sustained dynamic)	All the company business processes are subject to the constant improvement; target function – dynamic company progress; strategy – formed, constantly elaborated and corrected; means to implement the strategy and ways to achieve targeted indexes are constantly optimized; effective activity/management depends on the management system alignment. Management techniques – a set of multicase of SOA software products.

Source: compiled by the author.

Table 2. Methods of forming the diagnostics of the company management and technological maturity level (LMTM)

№	*Indicator code*	*Indicator meaning*	*Genetic attraction to a certain maturity level*
General economic G (General)			
1	*General G1*	G11 Existence period	Important for I, II levels of LMTM
2		G12 Company size	Important for I, II, III levels of LMTM
	Manpower group M (Manpower)		
3	*Manpower capacity M1*	Labour effectiveness M11	Important for I, II, III levels of LMTM
4		Personnel stability factor M12	Important for I, II, III levels of LMTM
5		Average salary index M13	Important for I, II, III levels of LMTM
6	*Professional competence degree M2*	Education factor M21	Important for all levels of LMTM
7		Rank experience factor M22	Important for all levels of LMTM
8		Proficiency enhancement factor M23	Important for III, IV, V levels of LMTM
9		Integrated factor of proficiency enhancement M24	Important for all levels of LMTM
Social group S (Social)			
10	*Employees` social value S1*	Degree of investments in medical services and social insurance S11	Important for III, IV, V levels of LMTM
11	*Consumers` social protection S2*	Factor of assistance in improving the quality of goods S21	Important for all levels of LMTM
12		Financing index for procedures on monitoring the quality of goods S22	Important for III, IV, V levels of LMTM
13		Social programmes financing factor S23	Important for IV, V levels of LMTM
Informatization group I (Informatization)			
14	*Company automation level I1*	Degree of personnel involvement into the electronic interaction and documentation I11	Important for all levels of LMTM
15		Software level I12	Important for III, IV, V levels of LMTM
16		IT system and databases security level I13	Important for all levels of LMTM
17	*Degree of management informatization I2*	Informatization of management procedures I21	Important for III, IV, V levels of LMTM
18		Speed of arrangement of information flows` working I22	Important for all levels of LMTM
19	*Degree of business process formalization I3*	Level of description of company business processes I31	Important for III, IV, V levels of LMTM
Innovative group In (Innovative)			
20	Innovation aid In1	Innovative production index In11	Important for III, IV, V levels of LMTM
21		Innovative progress index In12	Important for all levels of LMTM
22		Personnel innovation index In13	Important for all levels of LMTM
23	Innovative capacity In2	Goods exportability In21	Important for all levels of LMTM
24		Innovation forward factor In22	Important for III, IV, V levels of LMTM
25	Innovation efficiency In3	Company innovation activities In31	Important for all levels of LMTM
26		Innovation leverage In32	Important for III, IV, V levels of LMTM
27		Innovative profitability In33	Important for all levels of LMTM

Source: compiled by the author.

The complexity of the task for assessing the company management and technological maturity is that some of its components can be assessed exclusively by qualitative indicators and expert methods based on questionnaires, and other components are assessed either by qualitative or quantitative indicators.

Assessing the parameters that collectively determine the company management and technological maturity level does not provide any information about its level, i.e. such assessments, as well as they should be integral, shall correspond to a particular scale allowing us to establish the present management and technological maturity level.

Therefore, the task on assessing the company management and technological maturity firstly lies in the formation of integral assessments of all its components, secondly, in the formation of a five-level scale for every component, each level of which corresponds to a particular level of the company management and technological maturity.

The first task to create an integral assessment is proposed to be completed by creating a taxonomic indicator of a progress level. Differentiation of the management and technological maturity levels will be performed by means of expert assessments, fuzzy multitudes methods and rating scale building.

The methodical approach formed on the back of studies allows assessing the company methodological and technological maturity level considering external and internal factors, influence. The composite algorithm for determining a level of the management and technological maturity (LMTM) is presented in Table 2.

2. RETRIEVAL

Assessment of the management and technological maturity level is carried out on a staged basis: first, you need to measure parameters of the management and technological maturity. Therefore, one carries out retrieving required partial data from the statistical reporting forms, holds an interview and conducts surveys with top managers and certain employees and specialists, and by means of specially designed questionnaires too.

The parameters represented by cumulative indicators are convoluted by means of integral indicators. After performing the quantitative assessment of parameters of the management and technological maturity level, the convolution algorithms using fuzzy logic methods are applied by determining a scale for the qualitative assessment of the maturity level for every parameter. Results of assessing quantitative and qualitative parameters that ensure the harmonization of interests and opportunities of a company are their summarization on a general scale. To get a final scalar assessment, it is necessary to determine an integral value represented in a single range. Ranges are taken into account on the basis of calculation of centres of quantitative assessments of grouping parameters.

The following actions plan has been formed:

Stage 1. Formation of data out (system of analytical indicators).
Stage 2. Standardization (regulation) of analytical indicators.
Stage 3. Consolidation of analytical indicators into synthetic and determination of local indicators.
Stage 4. Calculation of an integral indicator and rating.

Stage 1. One used the official statistical information collected in groups in Table 2. The resulting parameters of companies were established by applying the fuzzy logic methods and financial and economic analysis of the statistical reports for the period 2008-2016.

Stage 2. To provide a sufficient number of indicators of different qualities of the company social and economic growth, which are used in calculations, they shall be rated in general. That is to turn from absolute values to rated ones that characterize the degree of approximation to an optimum value. It is also necessary to ensure the informational unipath of rated indicators, distinguishing indicators-stimulators (the higher is the value of an incoming indicator, the higher is the quality of an integral one) and indicators-de-stimulators (the higher is the value of an incoming indicator, the lower is the quality of an integral indicator).

Calculation of standardized values is performed by the formula [5]:

$$n_{ij} = \frac{T_{ij} - T_{ij(\min)}}{T_{ij(\max)} - T_{ij(\min)}} \quad \text{(for stimulators)} \qquad (1)$$

The formula (2) is calculated for de-stimulators

$$n_{ij} = \frac{T_{ij(\max)} - T_{ij}}{T_{ij(\max)} - T_{ij(\min)}} \quad \text{(for de-stimulators)} \quad (2)$$

Where: n_{ij} – standardized value of index j of group i;

T_{ij} – value of indicator j of group i for companies.
$T_{ij\,(max)}$ – $T_{ij\,(min)}$ are corresponding maximum and minimum values of the compared indicators.

Standardization of data is used for all values of indicators to come in ranges good for comparison. Usually, it is an interval [0; 1].

Stage 3. Consolidation of analytical indicators into synthetic and determination of local indicators. The process of information consolidation (aggregation) should be implemented as follows: to weigh indicators for selected objects; to calculate intermediate indicators; to form a unified integral assessment. So, synthetic (local) indicators are determined on the basis of calculated and standardized values of analytical indicators, according to the indicators group i (Si) by formula 3 [6]:

$$S_i = \sum_{j=1}^{m} X_{ij} * \alpha_{ij} \qquad (3)$$

where: m – a number of indicators that characterize the management and technological maturity level of the group i; α_{ij} – a weighting factor of the indicator j, group i;

To set weighting factors of α ij indicators within one group, it is appropriate to apply the expert assessment method (Kostiukevych, 2011). In our research, we will use the method of common assessment of a subject of review. Weighting factors are set on the basis of points, which are given by experts and represent an expert`s subjective opinion about the indicator influence, value and importance. Points are selected from a special rating numerical scale. Formation of an expert group is one of the most responsible moments. Accuracy and relevance of an expert opinion depends on its size and occupational composition. In our calculations we selected natural numbers from 1 to 5. The minimum point is 1, and the maximum point is 5. Significance of an analytical indicator is determined by the relation of a sum of assessments under j indicator to a total sum of assessments under all the formula indicators (4).

$$\alpha_{ij} = \frac{\sum_{j=1}^{m} X_{ij}}{\sum_{j=1}^{m}\sum_{j=1}^{m} X_{ij}} \quad (4).$$

A sum of weighting factors of analytical indicators within a corresponding group shall be equal to one.

Stage 4. Calculation of an integral indicator and rating. The company integral maturity shall be calculated on the basis of local indicators of the management and technological maturity by the following formula (5) (Lebid', 2012, pp. 128-134):

$$k_{ij} = \sum_{i=1}^{q} S_{ij} * \lambda_i \qquad (5)$$

where q — a number of groups of indicators; λ_i – influence (significance) of indicators of the group I on the integral management and technological maturity of companies.

For the purpose of rating and grouping companies according to their maturity levels, received integral indexes are ranged by the analytical grouping methods.

3. RESULTS

Use of the retrospective data allowed calculating an integral indicator of the management and technological maturity level for 6 companies of the machine building industry. The representative information retrieval was from 2008 to 2016. The analytical grouping results for a group of companies are presented in Table 3 (developed by the author).

Table 3. Determination of the management and technological maturity level for companies of the processing industry

	Parameter code	JSC "Odessa Automatic Forging Machines Plant"	JSC "Odessa Machine Building Plant"	PJSC "Odessa Cable Plant "Odeskabel"	JSC "Odessa Piston Rings Plant"	PJSC "Special Purpose Automatic Machines"	PJSC "Manufacturing Association "Stalkanat-Silur"
1	G11	4	4	4	4	4	4
2	G12	1	3	3	2	1	4
3	M11	4	4	5	3	2	5
4	M12	3	4	5	3	2	5
5	M13	3	4	4	3	2	4
6	M21	4	4	4	4	4	4
7	M22	4	4	4	4	4	4
8	M23	3	3	3	3	3	3
9	M24	3	5	4	4	3	5
10	S11	2	3	3	2	2	3
11	S21	2	3	4	3	2	4
12	S22	3	2	4	3	2	4
13	S23	0	1	1	0	0	1
14	I11	1	2	2	1	3	2
15	I12	1	2	3	3	4	3
16	I13	1	2	3	2	5	3
17	I21	1	2	2	1	3	2
18	I22	2	3	3	2	3	3
19	I31	2	3	3	2	3	3
20	In11	2	3	5	3	3	5
21	In12	2	4	4	2	3	4
22	In13	1	2	3	1	2	3
23	In21	2	3	5	2	3	5
24	In22	1	2	4	1	2	4
25	In31	2	2	4	2	2	4
26	In32	0	1	1	0	0	1
27	In33	0	1	2	1	0	2
Average value		2	2,81	3,4	2,26	2,48	3,48

Source: compiled by the author.

The analysis of Table 3 confirms that no company has a high level of the management and technological maturity according to the cumulative retrieval. The most developed are the PJSC "Manufacturing Association 'Stalkanat-Silur'" and PJSC "Odessa Cable Plant "Odeskabel", which

have started investing money into the company innovative progress and manpower capacity development since 2008 during the general economic stability period. The worst indicator of the management and technological maturity was given by the PJSC "Odessa Automatic Forging Machines Plant" irrespective of the fact that the total equilibrium position is stable.

The PJSC "Odessa Machine Building Plant" gravitates toward the potential progress, which has the maturity level of 2,81. The proposed methods also allow determining "chokepoints" in the company progress and a point of influence in order to achieve immediate optimum effect. Therefore, there will be a development scenario and a complex of innovative management techniques made for every company.

Indeed, the highest management and technological maturity level will allow establishing a stable corporate strategy, opposition to crisis fluctuations either inside or outside a company, but the maturity level conforms to a certain phase of a company lifecycle. It also creates additional opportunities for progress. Table 4 represents the detailed exposition of methods, tools and management techniques that will help affecting the company development. It also details the characteristics of structural shifts of the management and technological maturity level and cyclic shifts of a general condition of a company, and their relations. The recommendations presented in Table 4 allow designing optimum scenarios of company management and ensuring its dynamic development (Martyniuk, 2017, pp. 84-85; The method of organization diagnostics, 2012-2015; Whitley, 2000).

Table 4. Exposition of a complex of management techniques to ensure the company dynamic progress based on determining a level of the management and technological maturity

Management and technological maturity level	Analytical composition of management methods (as technique tools)	Complex of management techniques	Qualitative characteristics of structural shifts of a level of the management and technological maturity of a company system	Features of cyclic shifts of a general condition of a company system
I level – Training, core management (Initial)	**Normative:** operation; marketing; financial; logistic; organizational; HR; accounting **Optimizing:** Informational; investment management, PR management	Complex of operation and tactical management techniques:	Exploration type of development is defined by initiating a management model, arranging information and accounting technologies, logistic and marketing techniques, and forming a complex of production techniques and initial forms of information technologies	A company is in a position of normal equilibrium characterized by the constant increase in technical and economic indicators, smooth production progress, formation of a company management system and onset of a corporate style
II level – Cyclical, management with planning features (Repeatable)	**Normative:** operation; marketing; financial; logistic; informational; accounting **Optimizing:** Changes control, PR management, investment, HR, organizational, brand management	Complex of techniques for operative and tactic and strategic and tactical management	Patient type of development is characterized by a formed complex of production techniques, brand management and PR management; forms of corporate technologies and DSS techniques, actively developing information technologies as a priority area of company development	A company is in a position of relevant equilibrium characterized by a steady trend of indicators, but lower than the planned; structural shifts occur in the workflow; it becomes necessary to implement innovations as competitive benefits at the market
III level – Process, process management	**Normative:** operation; financial; information; PR management; brand man-	Complex of strategic and tactical management	Commutative type of development is characterized by a complex of information technologies that	A company is in a position of relevant disequilibrium; the company financial and economic performance is

(Processes)	agement	techniques	actively develop, a modernized complex of production techniques, a partially formed complex of DSS techniques (Decisions Support System) and corporate technologies	characterized by leaping fluctuations with high amplitude; the production capacity highly decreases; the need of investments in innovations and of an active development of personal and borrowed innovations grows. The need of reengineering of a company arises
	Optimizing: quality control; bailout; strategic; innovation; project; accounting			
IV level – Progressive, progress management (Progress)	**Normative:** corporate; strategic; financial; informational; quality control; HR; innovation; PR management; brand management	Complex of techniques for strategic and tactical, and adaptive management	Violent type of development is determined by a formed complex of corporate technologies and DSS techniques, a modernized complex of production techniques, an actively developed complex of information technologies; reframe of a mission and vision; a high level of benchmarking. The need to design personal innovations and progressive innovative management techniques intensifies. A company tries to keep leading positions at the market without decreasing profits with an opportunity to spin off new structures	A company is in a position of bifurcational equilibrium characterized by substantial slowdown in the financial and economic growth, deviating from forecast figures, a non-optimal organizational structure, significant decline of production capacity, inefficient administrative management model, and innovation activity decrease. Complexity of adaption to the market conditions. Possible aggravation of an economic status up to the threshold balance and need of fundamental changes and spin-off of new structures
	Optimizing: knowledge control; social; ecological; investment; bailout; project; accounting			
V level – Dynamic, management and sustained improvement (Sustained dynamic)	**Normative:** corporate; strategic; financial; investment; innovation; quality control; organizational	Complex of adaptive management techniques	The multitypological type integrates the previous types of development with an opportunity to use each determined type in specific industry, at certain companies or particular corporate activity areas. The dynamic maturity level does not have to be common for corporations. This level characterizes the fact that a company is at such a level when it can afford using management techniques of each level for effective coordination of operations	A company is in a position of optimum equilibrium characterized by a highly effective financial and economic situation, and high technological, manpower, production and raw materials capacities, a high level of innovation activity and own present innovations and a developmental ability. Such a condition shows the absence of company fears and an opportunity to duly and effectively mitigate
	Optimizing: project; knowledge management; HR; social; ecological; bailout; international			

Source: compiled by the author.

CONCLUSIONS

According to the results of the performed company analysis, the following benefits have been found.

First, a huge range of factors, different sides of company activities are taken into account in the course of assessment, what gives an opportunity to objectively evaluate opportunities, fears of a company, and its capacity.

Second, the symbiosis of results of establishing an equilibrium position and results of determining a level of the management and technological maturity will allow to determining appropriately a required attractor, set triggers and coordinate them into a required line of a system of attractors, i.e. to perform reconstructive engineering of a company with surgical precision by means of a correctly determined complex of techniques.

Third, the assessment of the management and technological maturity as an integral taxonomic indicator makes possible to form alternative scenarios of company development taking into account synergetic effects.

The disadvantages include the polycriteriality of the approach, variability of selected incoming parameters, which somehow complicate the synthesis of results, a considerable number of development options in the fuzzy system, what decreases the transparency of the received results analysis.

Using the model of assessment of the management and technological maturity level in practice will allow:

- to analyze incoming parameters and timely receive signals, prognostics of future fears, and finding new opportunities;
- to determine a company tendency to a particular level of maturity and select an optimum complex of management techniques for a particular company;
- to correct a development range of a company by changing the focus of innovation in the selected complex of management techniques.

The performed approbation has confirmed the approach validity and its usefulness. The approbation shows the reliability and unambiguity of interpreting results. To use it for bigger enterprises and corporations, it is not even necessary to change identification parameters.

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