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## **INCREASING THE COMPANY'S INTELLECT: IMPROVING MANAGERIAL PRINCIPLES' METHODOLOGY BY USING OPERATIONAL DEFINITIONS**

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Managerial principles staying inhabitable develop an organization. It happens because of the constant processes of improvement caused by irrational great advance in an investigation. Non-standard ideas advance an enterprise increasing its intellectual potential. One can use managerial principles as the comprehensive language for the acceptance of such ideas. Thus, principles should contain such exact wordings that are easy worked with in practice. The four-stage procedure was elaborated for their re-production. The concordance of twenty phases of the investigation to twenty phases of activities is implemented for the correctness verification of existent principles and forming of new ones in the format of such a procedure. The concordance is held on the base of the apparatus of operational definitions allowed to reveal the sense put in principles on a conceptual level and forward them to specific actions. Comprehension with the help of operational definitions and the implementation of such reasonable notions decrease vagueness making the implemented information qualitatively informative. It brings to taking solutions on the base of instruments of non-manipulative nature. As a result company's intellect is increased with the help of immutable principles, and flexible management is implemented by self-running change of limits in a field of controllability.

**Key words:** *a set of instruments, system, controllability, notion, procedure, sustainability*

The intellectual potential of an enterprise is determined by the existent methodology of management. Its forming depends on the fundamental general conclusions made on the base of managerial principles identification. The integral re-production of the substantial notion of enterprise's managerial propositions is taken into account in the time of their identification.

The right choice of such propositions is the pledge of managerial principles' immutability. In spite of this any changes in methodology and in a managerial set of instruments should not be reflected on managerial principles. Nevertheless the situations of their modification occur very often in practice.

The major reasons of such changes could be the following:

- an imperfect choice of managerial principles;
- ignoring some of principles by managers;
- the lack of correspondence of the managerial methodology to managerial principles.

Such reasons were revealed in the time of the conducted research during more than one hundred years history in the area of managerial principles' application as well as on the base of their criticisms' systematization.

That is why the aim of the given research is the elaboration of the procedure of efficient managerial principles' forming. The level of their efficiency is determined by measuring a limit of controllability. One can estimate the intellectual potential of an enterprise by this measure. The task of the research is to reveal the influence of managerial principles on the intellectual potential of an enterprise. Such a solution is a complicated task for contemporary managers. It is conditioned by a non-linear nature of managerial models, an uneven speed of the enterprise's development and so on. Besides that, it is demanded managerial principles to ensure being flexible, universal and immutable. Finally, the main thing is, that managerial principles should be intelligible and recognizable in the time of a change in the managerial environment. Taking into account above mentioned, fourteen requirements claimed to managerial principles were elaborated. The seven managerial methodological platforms were chosen from the most popular thirty ones on the base of these fourteen requirements. They were analyzed from the position of putting in action on the managerial processes' improvement. The whole complex of actions ensured the program elaboration of forming managerial principles. Such a program includes seventy six proposals on the base of which the structure of managerial commitments' co-subordination is substantiated, and coordinated instruments ensured building a self-running field of controllability are created. This created field's correctness is checked by the measurement of controllability, the level of which demands the elaboration of measures on the processes' improvement taking into account a demonstrative base.

The system of operational definitions is implemented as arguments. Such arguments help to decrease vagueness of the existent problem, and raise the level of non-manipulation under taking solutions. These solutions on the processes’ improvement are affirmed on the base of the commensurability of resources’ investments to their contribution in added value. The increment of value is evidence of the necessity in a revealed improvement. Accepted improvements connected with increasing the intellectual potential of a company, make a valuable contribution to the development of managerial methodology.

### 1. The Procedure of Forming Managerial Principles

The scheme of the complex four-stages procedure of forming managerial principles in general view is represented on the Fig.1.

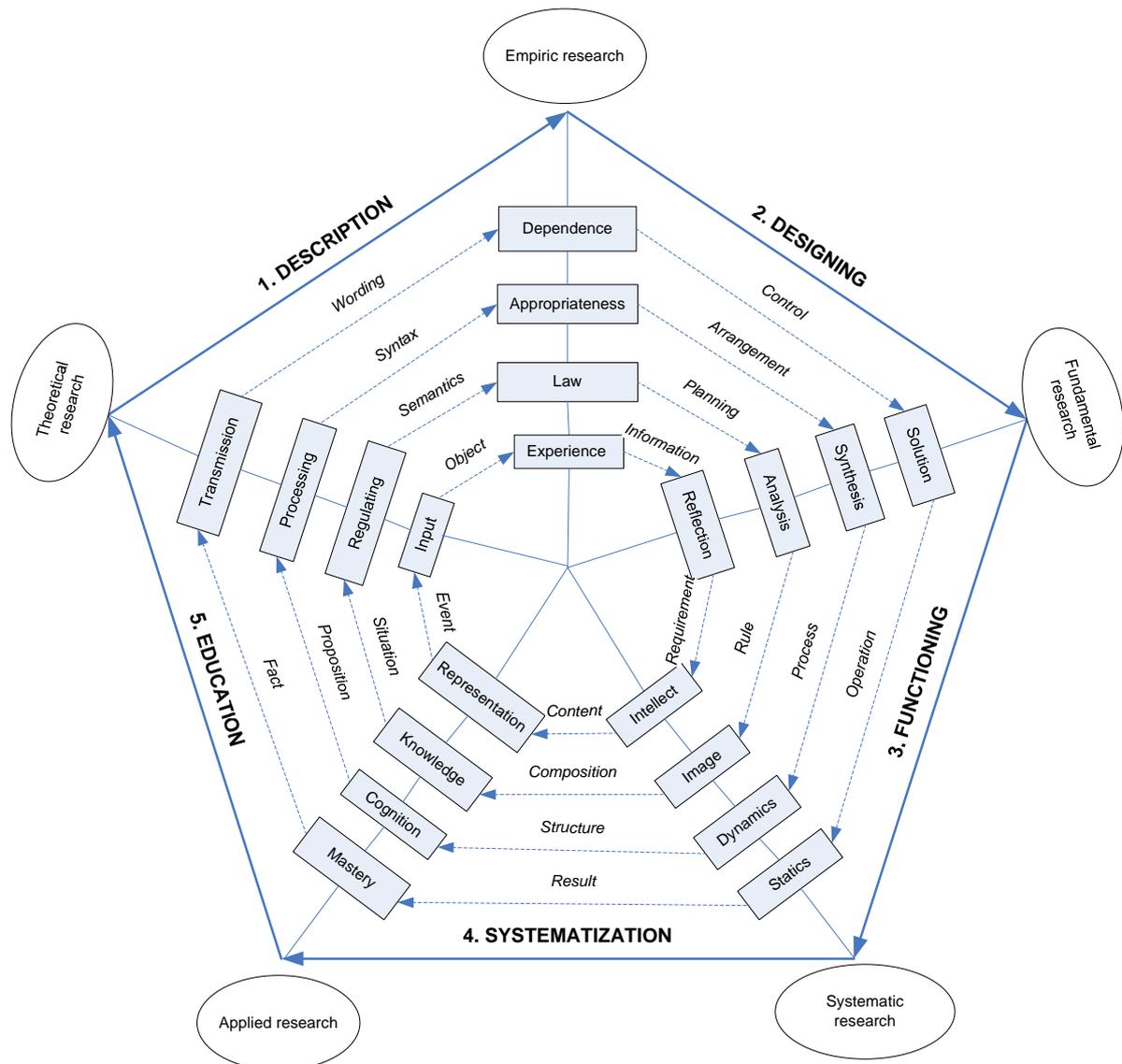


Figure 1. The Scheme of the Procedure of Forming Managerial Principles

The given procedure is represented in the form of five pentagrams. The most external pentagram consists of five triangles joined among them. Each of triangles represents the methodic platform of principles’ elaboration. Their sides symbolize the research directions, and the bases of triangles reflect the types of activities. Four pentagrams created of dotted arrows are placed inside the most external pentagram built of the bases of triangles. Each of internal pentagrams represented a closed cycle characterizes the major stage of procedure. The accomplishment of a stage consists in the implementation

of actions. The actions are represented by dotted arrows on a scheme. A cycle consists of five actions the implementation of which occurs in the format of the certain type of activities. The types of activities are marked by capital letters, and actions are marked by inclined small ones. An action is implemented under the certain phase of the research the name of which is written in the rectangle on the scheme. The whole complex of phases placed parallel on the one of sides of the external triangle characterizes the research direction. The names of directions are represented in an oval.

The elaboration of the procedure starts with the introduction of the managerial proposals' content. Points of departure are created in the course of a set of research. Such a set is examined from the point of view of the structural integrity's vision of five research directions:

- theoretical;
- empirical;
- fundamental;
- systematic;
- applied.

The whole complex of activities' types creates the processes' integration of the managerial principles' elaboration. The elaboration starts with the description of principles on the base of which their designing is implemented. The actions corresponding to the activities connected with functioning, systematization and education are accomplished next. Each type of the research conducted in the format of the certain cognitive activities, is based on four categories. They are:

- a paradigm;
- causality;
- the methodology;
- an enclosure.

The paradigm as the objective base for the development of knowledge contains a set of a task for each research direction. *Causality* reflects the orientation to the object of the conducted research. The methodology joins the whole complex of instruments, and determines the research level. The enclosure includes generalized research results.

The major research phases are enumerated according to each category in the Table 1.

**Table 1.** The main phases of the research

<b>Research\Category</b>	<b>Paradigm</b>	<b>Causality</b>	<b>Methodology</b>	<b>Enclosure</b>
1. Theoretical	Input	Regulating	Processing	Transmission
2. Empiric	Experience	Law	Appropriateness	Dependence
3. Fundamental	Reflection	Analysis	Synthesis	Solution
4. Systematic	Intellect	Image	Dynamics	Statics
5. Applied	Representation	Knowledge	Cognition	Mastery

Each phase of the research demands the implementation of a certain action. The whole complex of actions made in the formats of one research direction determines the type of activities. Each of them includes four types of activities, such as:

- hypothesis;
- division;
- junction;
- choice.

The initial wording is forming by the hypothesis expressing the first action. The action called „the division” ensures the decomposition of the hypothesis' object on components, each of them is investigated separately. After that different parts are joined in a single whole. The substantiated proposal is prepared by implementing a choice.

The basic phases of activities on each type of actions are enumerated in the Table 2.

**Table 2.** The basic types of activities

<b>Activities \Type</b>	<b>Hypothesis</b>	<b>Division</b>	<b>Junction</b>	<b>Choice</b>
1. Description	Object	Semantics	Syntax	Wording
2. Designing	Information	Planning	Arrangement	Control
3. Functioning	Requirement	Rule	Process	Operation
4. Systematization	Content	Composition	Structure	Result
5. Education	Event	Situation	Proposition	Fact

The elaborated four-staged procedure is implemented for the verification of the existent principles correctness and forming new ones. The concordance of twenty research phases to twenty activities stages is implemented in the format of such a procedure. In the course of cyclical process management the concordance is ensured by implementing the balanced complex of operational definitions which help to open the sense put in principles on the level of notions. These notions are transmitted to concrete actions. That is why the truth of a procedure is in it operational research. In the given context the number four is used as a veritable number of cycles, and the number five is a veritable number of investigations. These two numbers characterized the key procedure parameters were obtained in the result of implementing the procedure which is operationally definite. By possessing such a property, one can affirm that the proposed procedure will be correct, as the number of cycles and investigations in it is substantiated on the level of semantic transmission of notions. The operational procedure advantage lies in the fact that it allows to operate with the same numbers in the frame of one procedure.

## 2. The Substantiation and Choice of the Managerial Principles Hierarchical Co-Subordination

The systematization of principles classification allowed to obtain the certain set of recommendations strengthening the connections among the most famous principles. Besides that one could to reveal the co-subordination existent among principles. Three major classes were selected for the most famous classifications chosen by taking into account elaborated requirements. In spite of their operational purpose, categories being a part of each class carry the common functional and structural load on the final results of the principles elaboration (see a Table 3)

**Table 3.** The determination of class classification functional and structural load

Author	Gegel	Fayol	Drucker	Deming	Mintzberg	Cokins	Prigozhin A.	Functional and structural load of a class
The base of classification	Cognition	Functions	Knowledge	Processes	Skills	Activities	Potential	
<i>Class 1</i>	Thesis	Structure	Adjacent	Science	Emotional	Focusing	Entropics	The arrangement of a content
<i>Class 2</i>	Anti-thesis	Processes	Major	Quality	Rational	Translation	Sincretics	The detailed elaboration of a composition
<i>Class 3</i>	Synthesis	Result	Fundamental	Team	Public	Collaboration	Synergetic	A composition of a structure

The presence of three grouped classes was corroborated in the course of the functional and structural research under fixation in three levels of the results. A result level determines the degree of managerial principles detailed elaboration. Each of levels defines a certain result plane. The acceptance of a triad as a base of a number of results levels as well as a choice of rod essences for their connections form the kernel for the principles hierarchical co-subordination. A different number of elements is placed on each level.

The elements of the first and second levels are system-forming points as the transition from these points to the elements of low levels. The only element is on the first, most upper level. This element being the point of principles attraction reflects the strategic top of hierarchy. The number of elements on the second level where the principles are placed as well as where the number of elements of the third level reserved places for rules are placed, were defined in the time of revealing the optimal correlation among principles control and rules control diapasons.

Principles and rules show the different depth of control. The principles control diapason is larger, as their managerial status is higher. The optimum conjunction was determined on the criteria of correspondence to the minimum number of controlled relations. The principles control diapason is 5 and the rule control depth is 3 for a such a relation when having the number of relations among principles and rules equal 178.

The Figure 2 represents graphs shown the relationship of analyzed indices. Marked points represent optimum unknown quantities.

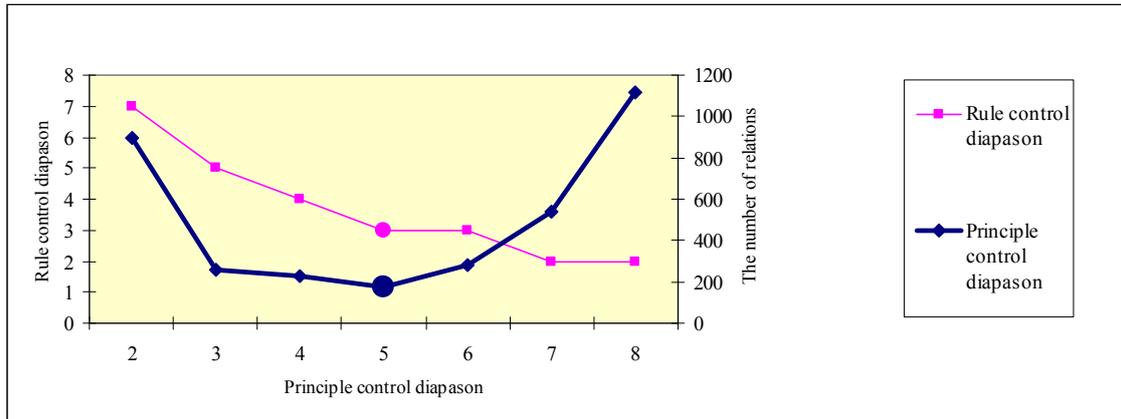


Figure 2. The determination of optimum conjunction among principles control and rules control diapasons

The substantiated values of indices characterized basic principles positions indicate of the comprehensive established hierarchy. Insignificant quantity of levels and system-forming indications heightens transparency of management. The availability of five principles gives the possibility to cover greater number of rules as well as to decrease the number of levels. The situation allows concretely define actions to comprehend the composition of structure better. The structure formation gives the possibility to coordinate key units promoted a single mechanism of enterprise’s management functioning. The single action of mechanism is expressed in managerial rules integrity. The number of such rules corresponds to a medium index determined in the course of the research of the most famous applied approaches (is equal to 14).

### 3. Forming a Self-Running Field of Controllability

The managerial principles formation based on systematic comprehension of images of managerial reality perception improves managerial methodology. The formats of methodology are determined by the depth of knowledge obtained in the course of principles public recognition. The creation, distribution and transmission of knowledge is implemented by different configurations of the four-staged procedure allowed to comprehend the essence of different managerial occurrences. Understanding these occurrences is implemented by the transformation of knowledge to real actions based on coordinating instruments. The organization’s controllability is increased by their help and as a result affects the enterprise’s intellect positively. Conformably to the three-levels hierarchy of principles and rules, coordinating instruments join the horizontal structures placed in different planes. The whole complex of connected horizontal structures forms a so-called “field of controllability” (see Figure 3).

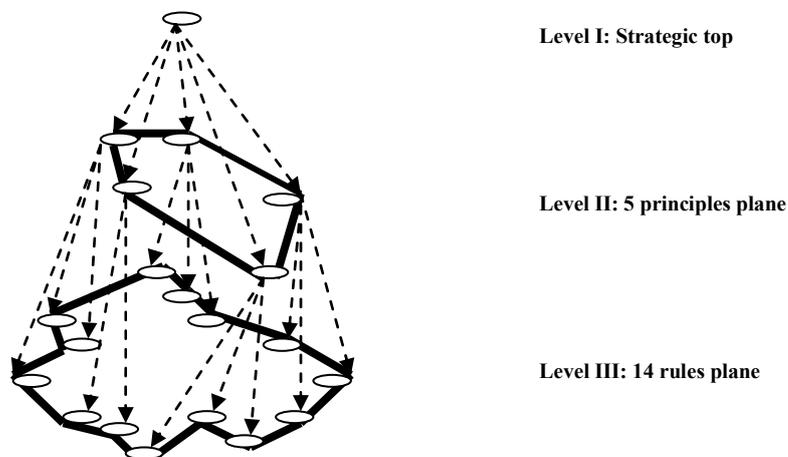


Figure 3. Field of controllability

The unification and concordance of coordinating mechanisms for the choice of principles occur in the strategic top represented the point of attraction. Projecting forces coming from the point of attraction on the plane of five principles forms the first part of space. Such space interprets managerial knowledge connected with subject acquisition, the explanation of operation information, the elaboration of requirements, forming the substantial notions and explanation of events. Further projecting forces occurs from the key points represented the statements of principles on the plane of fourteen rules. These forces reflect the limits of knowledge by which the factors able to support a situation in a state of equilibrium are investigated. As a result the second part of space is created. In total the both parts of space make up the field of controllability. Such a field is created of three planes, six system-forming and fourteen single elements, nineteen forces. The built field of controllability should have two properties which apply to managerial principles as well.

*The property 1:* ensuring of immutability and flexibility. The content, structure and elements combination are not changed in due course, but there should be means allowed to react quickly to external changes. Such an effect of immutability becomes apparent in the change of position and displacement of key points in the plane of principles..

*The property 2:* ensuring of immutability and universalism. The semantic interpretation of principles and rules is not changed, but depending on a managerial style it is possible to regroup rules, change the order of principles, change an algorithm of joining principles around the point of attraction.

Taking into account the activity of examined properties, the proposed approach is the mechanism of reproduction, comprehension and building the real managerial reality. Such a mechanism allows to adapt external changes and neutralize problems, as well as to reach the stage of projecting the new structure and reconstruct the field of controllability.

The reconstruction of the field of controllability without the change of content, structure and joining principles and rules allows to judge about it self-arrangement. The self-arranged field of controllability is created by the synthesis the complicated efficient structure from simple structures, the improvement of which ensures her conformity to enterprise's principles. The approbation of the enterprise's development is conducted in the limits of the field of controllability. The coordinates of key points of principles and rules are defined on the base of the evaluation of their levels of relative significance determined according to a chosen marked scale. Going out of the existent field limits signals about a non-standard situation. This demands understanding the elements leading to comprehension of the complicated dynamic system by creation of an integral image owing to the investigation of the existent connections character. Enterprise's functioning depends on the fact how it's elements are joined among them, as any systems of management obey the same common laws of the organization. In other words, the universal mechanisms of self-arrangement are opened by the proposed approach in the process of structural cognition. One can reach that by investigating the sense of unpredictability, reproduction and generalization of some images in the process of expansion of the field of controllability limits. Thanks to the scope of maximum possible variety of knowledge elements not only the intellectual potential of the enterprise is increased but self-arrangement of the field of controllability(it's self-assembly) is implemented around the key link which is determined for the supplement of missing components in the course of the whole image forming. The relationship among the separate components in the process of self-assembly of the whole managerial image leads to the appearance of the self-arranged field of controllability.

#### **4. The Measurement of Controllability**

The major purpose of the self-arranged field of controllability is the stable enterprise's development ensuring. Under the measurement of controllability the factors able to check the possibilities of coordinating instrument to overcome negative, internal and external influences are taken into account.

If the actions of such instruments after appropriate disturbances don't change the limits of the field of controllability, one can make a conclusion that the business development is stable. Elaborating conclusions about the stability of business one should control not the conformity to the set tolerances but to implement the search of prior managerial actions increased the information vagueness. Exactly here the essence of the stable business commitment consisted in the possibility of managerial instruments to preserve qualitative definitiveness despite of internal and external influences become apparent. Striving to obtain definitiveness on the qualitative level allows enlarging the approach of uninterrupted improvement achievements. One can reach that by the mutual usage of functional structural and non-manipulative approaches. At first the indications characterized the operational definitions are restored. Lining up the file of coordinated operational definitions allows to comprehend the structure of elements from the position of constant decrease in the number of possible changes influenced on improvement processes.

Knowledge of such a structure requires the enclosure of managerial instruments allowed to reveal relations among elements. As a result, the instruments forming managerial principles allow to be aware of critically important events which can't be described numerically. Such instruments are directed to the implementation of the stable business commitment by ensuring of its qualitative definitiveness. Implementing such mechanisms improves the process thanks to their non-manipulative essence and non-intervention in established norms.

Business controllability is determined not by ensuring its non-defectiveness by the conformity to the requirements of tolerances but by increasing qualitative definitiveness by decreasing the number of non-definitiveness prevented the processes improvement. The task of managers comes to the work of processes improvement by supporting them in the stable state. The measurement of stability comes to the determination of the corridor of permissible controllability parameters change. It is necessary preliminarily to determine operationally tolerances limits including the instructions on their measurement as well as the regulations of various actions on of tolerances requirements gratification from the very beginnings. The determination of tolerances is implemented for revealing of the fact how the process is proceeding and how it could proceed, but not as a means of forced intervention in it.

The established measures of controllability allow to judge about the efficiency of implemented changes. In spite of all this the improvements having the systematic origin don't change the field of controllability. Being self-arranged such a field does not demand the changes of coordinating instruments that testifies about the existence of efficient intellect. The change of coordinating instruments occurs under the loss of stability caused by special reasons. Although such reasons demand a new way of development in the modification concerns only the sphere of principles and rules in the proposed approach. In spite of all this the limits of the field of controllability are changed in the course of transition from unarranged management to arranged one. Having the property of limits transparency, the self-arranged field allows the enterprise to pass from the positions of stability to the higher level of development in the sphere of viability.

Thus the proposed approach of the elaboration of managerial principles allows to ensure the stable business development without significant changes of managerial instruments.

## **5. The Operational Definitions as a Demonstrative Base**

Ensuring the stable business development is connected with forming the coordinated fail of operational definitions. In the non-manipulative approach of problem solution they have a role of conceptual filters by the help of which the integral property of a principle is determined. It is attained by creating some image obtained with the help of a demonstrative set of instruments on the base of systematic vision. This set of instruments allows determining the objective prerequisites given the possibility to comprehend principles. New problems do not appear in the course of comprehension in other places. Such prerequisites are worked out by filtering information. Ordinary information is transformed to operational one by filtering. Thanks to the appearance of comprehensive descriptions it is possible to obtain principles wordings which are persuasive and recognizable in practice. By implementing such requirements it is necessary to strive for the position where one does not need to work out in detail principles wordings excessively. It is stipulated by the fact that one should not bind the creative initiative of managers.

In spite of their qualitative base the meaning of operational definitions is higher than the key indices such as the development index or cost increase. The fact is that it is possible to get the recognizable likeness of a generated image with reality on the base of operational definitions. At that time the usage of enumerated quantitative indices having conditionally given norms leads to the decrease of assessment precision. The existence of conceptual apparatus included the questions of critical importance which have the qualitative base, is more important for the success of business indices which can be characterized qualitatively. It is not accidentally that the managerial attitude to enterprise's principles should be apprehended by the leadership of the enterprise higher than the meaning of net profit ratios. On the base of principles knowledge allowed to manage efficiently by having the reliable information excluded any non-definitiveness is formed. In other words, the implemented improvements should be conducted under conditions of being kept well informed. In spite of all this any misinformation caused by vocal or apparatus misrepresentations should not exist. In other words, it is impossible to lead the conversation towards forced or casual data manipulation. Otherwise the adopted solution will be manipulated. The major task under the elaboration of principles is to attach the non-manipulative formulations for principles. Such instruments should have self-established peculiarities connected with the self-assembly and availability of self-arranged field of controllability. The first peculiarity characterizes the junctions of basic principles formulations by linking semantic constructions combined

the elements of logics and persuasion. It is necessary to come out to the new structure design by reconstructing the field of controllability. It is possible to judge about the organizational controllability on the base of meanings of final indices measured on the base of key business indices growth. The change of direction towards the enterprise’s development is possible under revealing the improvements caused by non-systematic origin. Such a change is a property of managerial competence caused by formed managerial style on the base of formed principles. Under certain conditions the system can self-arrange by transforming the managerial style and come to a new base of adducing. The self-arrangement of the system testifies about the availability of special intellectual resources on the enterprise based on the systematic principles. It gives the possibility to adapt the principles of the enterprise immersed in reality to be adapted and recognizable in the more complicated system.

## 6. The Assessment of Intellectual Resources Contribution in Cost

The activities of any improvement should be assessed from the point of view of it’s contribution in the achievement of the system common target.

Such a contribution is determined on the base of measurement of non-tangible assets cost. Under the managerial principles’ elaboration the intellectual potential is a major resource of increasing enterprise’s controllability. Taking into account the non-tangible nature of it forming it is necessary to elaborate quantitative measures for it’s assessment. The competence’s cost is used as such a measure. The aggregated present value of competence ( $PV_{TC}$ ) is calculated on the base of the corrected model of Gordon under the conditions of steady development.

$$PV_{TC} = \frac{FV_N \times (1 + q_K)}{\left[ \left( d_A - L \times t_S \times \overline{d_D} \times \frac{1 + d_A}{1 + \overline{d_D}} \right) - q_K \right] \times (1 + d_A)^N} \times w_{NM}, \quad (1)$$

- where  $N$  - the period of business assessment;  
 $K$  - the moment of time corresponding to the post assessed one ( $K = N+1$ );  
 $FV_N$  - the future value of the enterprise’s primary activity;  
 $q_K$  - the rate of enterprise’s potential change at the  $K$ -moment of time;  
 $d_A$  - a just profitability norm of primary activity;  
 $L$  - a constant characterized a share of borrowed capital in gross assets (is equal to 0.45);  
 $t_S$  - a profit tax rate;  
 $\overline{d_D}$  - an average credit rate on the capital market;  
 $w_{NM}$  - a share of non-tangible assets in total enterprise’s cost.

Under the assessment of non-tangible assets one should determine those types of activities which ensure forming, implementing and distribution of intellectual resources. A share of non-tangible assets is defined on the base of expert assessment obtained under filling control questionnaires elaborated with due regard for operational definitions.

Further, coming from the competences structure and taking into account their relationship one can determine the present value of the separate key competence ( $PV_{CC_i}$ ) on the base of the following cost:

$$PV_{CC_i} = \left[ \sum_{t=1}^N \frac{FV_{i,t} \times (1 + q_{p_i,K})}{(1 + d_i)^t} \right] \times q_{s_i,K}, \quad (2)$$

- where  $FV_{i,t}$  - future value of  $i$  key competence at  $t$  moment of time;  
 $q_{p_i,K}$  - rate of potential change of the  $i$  key competence at the  $K$ - moment of time;  
 $d_i$  - just profitability rate;  
 $q_{s_i,K}$  - rate of stability change of  $i$  key competence at the  $K$  moment of time.

The potential rate of growth and stability is calculated on the base of expert assessment determined taking into account operational definitions. As a result aggregated present value of competence is equal to the sum of key competences:

$$PV_{TC} = \sum_{i=1}^M PV_{CC_i}, \quad (3)$$

where  $M$  - the number of key competences types.

The proposed approach has a number of important advantages.

Firstly, it supports the necessity of continuing improvements.

As a result of improvement, one can discover that the flows of money co-measured in time are larger than the amount of initial capital investment. In the majority of cases improvements have a problematical nature that is why one can judge about the missing profit that calls to continue the research connected with the continuity of improvements.

Secondly, it ensures the logical substantiation of improvement processes. The cost assessment allows to judge about strategic steps of improvements taken on the base of substantiated expectation. The commensurability of results is conducted accordingly the logical adducing base corresponded to the dominant variant of a managerial style. The expected results correspond to key moments of organizational transformation.

Thirdly, it has the qualitative base for revealing the qualitative measures of improvement. In the course of conducted assessment one can realize expenses and profit reveal the whole picture of business development, comprehend the just norm of invested capital profitability taking into account possible risk.

Fourthly, it sets the priorities in the list of improvements. The revealed reasons are opened from the positions of systematic and non-systematic nature. The priority is given to the problems of the second type.

Further the order of suggested improvements is set on the base of the increment of value assessment relatively to the required investments in the format of the business vision picture.

Fifthly, it has the possibility to assess non-tangible assets as the decision making relatively improvements is conducted on the base of knowledge. Knowledge cost management supposes committing them a consumer's image.

The cost of infrastructural environment formed under implementing managerial principles is a component of aggregate cost structure of competence.

## **7. Approving the Procedure of Managerial Principles Forming by Example of Fourteen Principles by Deming**

It was necessary to choose the managerial methodology appropriate to the set requirements in order to prove the precision of elaborated procedure operation. Beside that the methodology should include fourteen rules. Fourteen rules by Deming were implemented as the initial ones which are the most efficient categories of stable business building

In the limits of present research it was revealed that the rules by Deming satisfy the proposed requirements fully. Not less than three arguments were supposed for each requirement the actions of which are based at least on four rules. The supposed arguments testify about the objectivity of implementing Deming's rules in elaborated procedure.

Comparing Deming's rules with characteristics of certain reproductiveness demanded the additional actions. The major problem consists in specificity of Deming's methodology built on four coordinated rules under the absence of their joining around the principles. In order to overcome such a problem the substantiation of position of enlarging rules in the course of their control depth investigation was conducted. The proofs, connected with the diapasons of principles and rules control, were obtained that allowed to accept the proposed hierarchy of co-subordination. The substantiated formulations of principles were elaborated on the base of it and the rules joining were conducted around them. It allowed to join principles coordinated to rules around the strategic top in the course of key words analysis implementing the semantic model and the apparatus of operational definitions.

At the final stage of procedure verification the linked principles and rules were interpreted in the context of the whole collective perception. The managers of six enterprises of different activity types who

were interested in the elaboration of the business policy of their own enterprise acted as experts. Each of them having the experience of participation in such projects was acknowledged with the mechanism of operational definitions and Deming’s rules. The elaboration had a group nature and was conducted in the form of brain storm. In the course of elaboration the experts fixed those Deming’s rules (from existent fourteen ones) which were used by them in the first version of the project. Further, in the course of presentation the major problems were revealed and the main actions were substantiated in order to eliminate them. After that the experts started to elaborate the second version of the project. They were additionally acknowledged with proposed hierarchical structure of the relationship among Deming’s principles and rules. Under the presentation of project second version Deming’s rules were fixed and further were taken into account under business policy creation. The results of formulation validity determination and the affirmation of principles and rules recognition by the users’ collective are shown in the Table 3.

**Table 3.** Implementing Deming’s rules under the elaboration of enterprise’s business policy

<b>Group</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
A number of people		3	3	3	4	3	3
The title of a project		Promoting information services	The elaboration of software	The development of advertisement agency	Launching of a new assembly at an industrial enterprise	The operation improvement of a motor transport enterprise	Rendering financial services
Deming’s rules used in the first version	A number	4	7	7	5	6	5
	%	28.6%	50.0%	50.0%	35.7%	42.9%	35.7%
Deming’s rules used in the second version	A number	10	12	11	12	14	8
	%	71.4%	85.7%	78.6%	85.7%	100.0%	57.1%
opinion change of rules recognition	%	42.9%	35.7%	28.6%	50.0%	57.1%	21.4%

The high level of percentage in the change of opinions proves the fact of collective recognition of mechanism Deming’s rules joining around formulated principles. The given mechanism is not only efficient under the arrangement of managerial activities but it is efficient under the acquisition of such a complicated managerial methodology as Deming’s teaching as well.

The efficiency of elaborated procedure was appreciated by example of a motor transport enterprise which conducted the change of managerial style in the limits of the given project. As a result of the implementation of proposed project the aggregated present value of key competence increased 85% in the five years perspective. And the distribution of the major types of growth of intellectual potential is shown in the Table 4.

**Table 4.** The assessment of key competences

<b>№.№</b>	<b>The type of intellectual potential</b>	<b>A share in overall volume %</b>	<b>Value growth %</b>
1.	The improvements of non-systematic nature	5	72
	including:		
1.1.	The loyalty program	3	43
1.2.	The change of an investor	2	29
2.	The improvements of systematic nature	95	28
	including:		
2.1.	Re-arrangement of principles rating	35	7
2.2.	The balance of rate indices	26	9
2.3.	The change of capital structure	18	4
2.4.	Staff motivation	16	8

## Conclusion

The obtained results prove the expediency of the given approach.

It is necessary to create the efficient system on the elaboration of efficient managerial principles reproduction. The initial stage of the creation of such a system is systematization of operational information. The improvement program is elaborated on the base of it including actions of enlarging demonstrative base. The program measures are grounded on specifications on the base of which the substantiation of optimum structure of principles and rules subordination is conducted. The structure support in an unchangeable form is ensured by elaborated instruments of non-manipulative nature which allow creating the self-arranged field of controllability. The efficiency of management with the help of field is determined by intellectual potential assessment. One can judge about the level of controllability which is expressed by the effect of eliminated problems on the meanings of assessed parameters. The appearance of effect one can observe under measurement of added value which is the final condition of system creation allowed forming managerial principles.

## References

1. Kopitov, R., Labeyev, V., Tolchkov, V., Management Key Correlation in Modern Conditions. *Research and Technology – Step into the Future*. Vol. 3. No2. 2008, p. 91-92. (in Russian)
2. Kopitov, R., Faingloz, L. Ways of Transforming Aims into Results at Successful Companies. Tehnological and Economic Development of Economy. *Baltic Journal on Sustainability*. 2008. 14(3), pp. 312-326.
3. Kopitov, R. Widening of Systematic Sphere in the Process of Non Systematic Factors Investigation, *Research and Technology – Step into the Future*. Vol. 2. No3. 2007, p. 55-56. (in Russian)