

Wise management as an imperative of time

Alexey Stepanov^{1,*}, Lyudmila Kim², Asem Mukhitdenova²

¹*Union of Project Managers of the Republic of Kazakhstan*

²*Al-Farabi Kazakh National University, Department of philosophy and political science*

Abstract: The paper covers the topicality of wise management in the modern information age. It is shown that at present, the majority of decisions in management of economic entities are made in the context of uncertainty against the background of the global hyper-crisis and priorities of political nature, when it is simply impossible to neither prove nor disprove the optimality of management decisions. It was found that in dealing with information management tasks the management features translates into management process requirements and ethical principles of the wise manager. It is argued that creativity in management provides for co-creativity of those managing and managed. In this work, a template of a register of ideas is also recommended to the chief executive officer, and its authors' representation is given. The register of ideas includes all the products of intellectual activities of a top manager. In essence, it is a subject-oriented heuristic instrument allowing selecting conditions and methods for creative process when finding solutions for non-standard management tasks. The structure of this register was developed on the basis of own experience and pilot application. The register was used in the work of an expert, lecturer, manager, and demonstrated its efficiency. On the basis thereof, the creative potential of a top manager will rest upon the intellect of employees and will provide for success of the organization. The last section of the study demonstrates that the transfer of "deep" knowledge on the subject area and management tasks to the expert systems is a modern imperative for wise management.

Key words: Management; Wisdom; Information systems; Management register; Creativity; Heuristics; Efficient management; Values; Intelligent systems; Hermeneutics; Fuzzy logic

1. Introduction

Prominent thinkers believed that wisdom is the gift for those featuring precise reflection, decent behavior, for good speakers. Wisdom is not just the intellect and knowledge, but also understanding of the meaning of moral and spiritual values and broad life experience. The head must have the wisdom, which in the context of activities should be understood as a set of abilities and skills acquired as a result of comprehension by the top-manager of strategies and essence of management based on his professionalism and competence (Kim et al., 2014). Speaking about the wisdom of the head, intuitive individual understanding of management process should also be considered (Adizes, 2012).

Demand for wisdom in the information age has increased (Ashirov, 2006). As Karelin (2011) stresses, modern management situation has been changed by three factors - novelty growth rates, volume growth rates and information flow variety growth rates. The result is that the head becomes the weak link in the chain of the business relationship, because he/she cannot withstand the load and is often outside the organization.

At present, the majority of decisions related to management of economic entities are made in the context of uncertainty against the background of the

global hyper-crisis which demonstrated the weakness of the transatlantic management model which is oriented at rationalism and pragmatism, but not at the work within the framework of G7 countries' "recommendations" which are imposed not by market rules, but by the ideas of a narrow (even in the geographical sense) American-British system of philosophic values (Morgan and Dale, 2013). Due to that, the only basis for justification of the majority of business decisions is the intuition of the director and his/her ability to process unstructured information, i.e. decision making for the purposes of management does not have to become the art of cunning and benefit, but be a demonstration of wisdom. That is especially topical in the context of uncertainty, when it is simply impossible to neither prove nor disprove the optimality of management decisions.

1.1. The aim of the study

To detect the basic components and factors of wise management, on the example of the Kazakhstan Republic management for valorisation of the management practices in the world.

1.2. Tasks of the study

* Corresponding Author.

- Specify the managing wisdom principles in action as leading purposes for the top-manager of a successful company;
- Separate the creative factor in management and develop the register structure of ideas and offers (for the chief executive officer) in the office of organization management;
- Integrate in the form of instrument: positions of the theory of de Bono, principles of Eurasian philosophy, rules of labour motivation and application of interaction management systems that is necessary for formation of effective communications in the organization.

The study is built on multi-disciplinary approach with the involvement of the complementary (additional) knowledge – philosophy in its Eurasian tradition of understanding.

In Eurasian social space, the philosophy is determined as a peculiar form of public consciousness and recognition of the world, which reflect the system of knowledge about bases and fundamental principles of human existence, about the most common essential characteristics of human relation to the nature, society and spiritual life (Abraham, 2014). The philosophy synthesizes and generalizes the results of practical and spiritual acquisition of the world, offering the possible strategies and choice of socio-cultural development of the public life in determination and search of the cultural identity (Kumar, 2013). Therefore, it is possible to determine motivations and values, peculiarities of communications in post-Soviet countries.

The technology of management and the social balance of “transatlantic assembly”, introduced in post-Soviet an Eastern-European countries, is based on the directives of pragmatism, technocracy, rationalism, individualism and in that, in our view, there are the reasons of its ineffective work. Consequently, the studies on its adaptation to the concrete countries are topical (Tsekhovoy, 2014).

At the choice of paradigm of study among possible ones as:

1. Positivistic (where the subject-object relations are studied).
2. Interpretative (which is directed on the study of actions of separate persons and small groups, and provides description and explanation of the human behaviour on the micro level).
3. Social-constructive (in which motivation of human behaviour and cause-and-effect relations in the constructed reality are separated).
4. Integrative (uniting components of different paradigms).

There was chosen the integrative one.

1.3. Foreign experience usage on the issue of studying in Kazakhstan

In Kazakhstan, the majority of managers-professionals trust the personal experience, instead of practices of management successfully applied in transatlantic countries. According to the *Guide to*

Project Management Body of Knowledge (PMBOK®), for optimization of the modern management is important to rely on the achievements of science: theory of labour motivation by D. McGregor, idea by I. Adizes, approach by Edward de Bono among other things. The researches of corporate memory by O. Kuhn and A. Abekker, M. Ackerman and S. Halverson, B. Kogut and J. Zander, G. Hedlund, R. Becket, S. Wang, R. Hall, J. Sunderlends and R. Stäblein, T. Gavriloova, D. Kudryavtsev, V. Malinovskiy, A. V. Novichkova are of interest. Also, the works dealing with this issue by such prominent specialists as I. Ansof, S. Beer, P. Drucker, R. S. Kaplan, D. P. Norton, M. E. Porter, C. Prahalad, G. Hamel, A. L. Gaponenko, V. S. Yefremov, G. B. Kleiner, E. M. Korotkov, D. S. Lvov, A. M. Makarov, N. N. Masiuk, B. Z. Milner, A. I. Tatarkin, Ye. V. Pilipenko and by other authors can be mentioned.

B. Gates (2000) wrote in his book titled *Business @ the Speed of Thought* about the necessity to raise the intellectual potential of organization or the corporate IQ. Herewith, he means not only the number of clever employees, but also the accumulation of knowledge in the company and free dissemination of information, which allows the employees to use each other’s ideas. The ultimate objective of creation of a high corporate IQ is that a group would be able to work out ideas and implement them as efficiently as it would be done by one person who concentrates his/her efforts on solving a task. “And when there is a critical mass of high-IQ people working in concert, the potential of the company rockets sky-high. Such mutual stimulation creates many new ideas and contributes to promotion of less experienced employees to the highest levels of proficiency. The entire company begins working better.” As it can be seen, B. Gates was the one who approached the problems of this study closer than any other author way, but only in terms of practice, and, to great regret, he did not further develop his ideas.

1.4. Domestic experience that is important for the world science

Some peculiarities of business running in the Republic of Kazakhstan in the activity of separate consulting companies that allows making conclusion about insufficient competence of many modern managers and about the necessity of creation of an integrate and single technology of wise management, based on the creative approach to the management and socio-cultural bases. In member states of the EEC (Eurasian Economic Union), the mechanistic transfer of transatlantic project management practices into the system where market relations have not fully formed have not met expectations. The analysis of this problem has shown that it has not been specially and profoundly studied in the literature. Subject to the foregoing, the topical task is to develop the methodological foundation of wise activities adapted to our environment and to

motivations for solving the problem of improving the competitiveness of the Republic of Kazakhstan.

1.5. Possible application of the results and conclusions of the study in the international practice

The work demonstrates the weakness of the transatlantic management model, which is oriented at rationalism and pragmatism, which is especially evident at the transition from the domination of market rules to the dictation of the system of American-British political values. The results of the study and offered approach can be included in the office of managing the development of companies in Ukraine, Kirgizia, Armenia and other post-Soviet countries, and the implementation of western managerial practices was forced without accounting motivations and peculiarities of workers' and managers' mentality that actually reduces their effect to minimum.

2. Methodology

The methodological foundation of the article is made by: a broad philosophic approach connected with the set goals and objectives of the research, fuzzy logic, norms of the ethics of scientific research, and lateral thinking the principles of which was developed by Edward De Bon (De Bono, 1994; De Bono, 2006).

In the Eurasian space, the philosophy is defined as a special form of social conscience and understanding the world which reflects the system of knowledge of the bases and the fundamental principles of human existence, of the most general intrinsic characteristics of the human's attitude to nature, to the society and to the spiritual life (Damij and Damij, 2013). Philosophy synthesizes and generalizes the results of practical and spiritual development of the world suggesting possible strategies and the choice of the socio-cultural development of the social life in identification and search of the cultural identity. In transatlantic education schools, the pragmatic component of philosophic thought is additionally concretized: philosophy is the theory of the most fundamental and general notions and principles pertaining to cogitation, action and reality.

Fuzzy logic was invented in 1965 in the works of Lotfi A. Zadeh, the professor of technical sciences of the University of California. Fuzzy logic is multiple-valued logic which allows to determine intermediate values for generally accepted estimations, as yes or no, true or false, black or white, etc. using the phrases like "probably", "rather", "may be", "sometimes", "the majority believes that", and other. In this article's classifications is used a synthetic range of unbounded bases relying upon the diversity of phenomena and points of view in respect of each of them.

One of the main techniques is a mental experiment closely connected with analogy. Mental

experiment is a system of mental procedures conducted with idealized objects. It is an active method of studying phenomena in different imaginary conditions, but such imagination (fantasy, creation of imaginary situation) is strictly regulated by the laws of science and rules of logic. Creative imagination, as distinct from imagination reconstructing right on the spot, consists in creation of mental images, new objects, approaches, and methods. Consistently conducting mental experiments, it is possible to solve a set task.

3. Problem statement

The head of the organization must be a "real" leader, not just a manager, a member of the administrative staff. Leadership based on the wise management and competence and leadership based on tenure of office are fundamentally different (Adizes, 2004).

Subordinates tend to adopt the manners of the head, sometimes exaggerating them. If he/she is inconsistent and indecisive, the staff also often changes its point of view, and if he/she devotes himself to the organization - good and capable staff will then always follow him/her. Wise chief first observes, analyzes the situation and then decides on the issues relating to subordinates.

We consider three aspects of wise management:

1. Wisdom based on the experience of the head and his assistants;
2. Wisdom extracted from the corporate memory;
3. Wisdom based on intuitive decisions.

Wise management must comply with the imperative of time, be based on the use of interactive intelligent information systems and creative approach (Tsekhovoy, 2013).

4. Literature review

As is known, the management provides:

- For joint activities of people and their communities;
- Ensures an orderly effect on the participants of joint activities; aims at a attaining the management objective;
- Characterized by the subject and object of management, where the subject of management has a power resource, and the object of management is a dependent subject which conscious willful conduct is carried out in accordance with the subject's instructions (Liker and Khosesus, 2011);
- Implemented as part of a certain mechanism.

In a well-known work by American industrial psychologist and manager, creator of the labour motivation theory, D. McGregor, *The Human Aspect Of The Enterprise*, the author offers two theories - X and Y as different approaches to human treatment of work on the basis of "universal conviction in the mediocrity of masses" (McGregor, 1964).

Theory X (authoritarian leadership style) states: unskilled head believes that the an "average" person does not like his job, is afraid of responsibility, needs to be constantly coerced, controlled, threatened with

sanctions to make him work. Theory Y (democratic leadership style), by contrast, argues that one should find satisfaction in job, he/she is characterized by self-control and self-organization, he/she tends to self-satisfaction and self-expression, does not avoid responsibility, but on the contrary, is able to take on the challenge, prone to creativity, expression of his potential and abilities for the benefit of the organization.

Consequently, the tactics "instructions - control - sanctions" describes the Theory X, and Theory Y is opposite and implies wise leadership, including setting the main goal of the organization and delegation of authority, not personified control (head, auditor, etc.) but impersonal control (rewarded according to one's merits); it's also important to constantly improve and diversify the forms of incentives for workers.

McGregor D. did not finish the work on the Theory Z in which he tried to combine the needs and aspirations of the organization and the individual. It was continued by American professor Ouchi W., he formulated the lessons of Japanese management (Ouchi, 2009):

- people prefer to work in a group and group decision-making method;
- There should be individual responsibility for the results of work;
- Informal control over the results of work on the basis of clear methods and evaluation criteria is more preferable;
- The company must provide a constant rotation of personnel with permanent self-education; slow service career with the promotion of people of a certain age is more preferable;
- Management shows a constant concern about the workers and provides them with a long-term or life employment;
- A person is the foundation of any team, he/she ensures a success of the enterprise.

The purpose of wise leadership is the most efficient use of human resources. The interest in the person, not just an employee is brought to the fore, informal communication, corporate events get an increased role.

Fox Jeffrey J., the founder and head of Fox&Co., a consulting firm specializing in strategic marketing, advises the manager to work only with people who are operational and able to achieve results (Fox Jeffrey, 2002).

5. Results

5.1. Creativity in the management processes

Any management process requires not only the ability to analyze the situation, to accept, organize and control the process of implementation of the decisions, to summarize and make appropriate adjustments, but also a creative approach to the organization and implementation of management in general (McCregor, 1964).

Creative processes are not formalizable, they reveal the creative potential of the leader, his/her talent and professionalism, and the creative imagination itself is unique. The actual path of the wise leadership is the creation of new methods, techniques and ways of management for the development and achievement of organizational performance.

Constructive activity of the head is a controlled process preceded by, firstly, intelligent design which is unthinkable without the creative approach, and secondly, forecasting based on analysis and creative imagination (Glazkova, 2014).

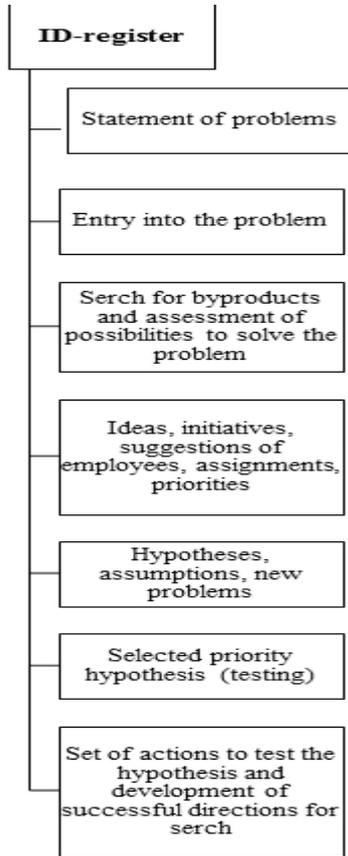
An important issue in the wise management is a question of stimulating creative activity not only of the head, but of subordinates as well. Wise leader is not only creative, but also encourages creativity of the employees (Ayan, 2009).

Modern creative approach to the assessment of events and developing of skills to work with information was proposed by Edward de Bono. This method is called "Six Thinking Hats" which reflects the peculiarities of human thinking and it can be formulated in specific questions (De Bono, 1985):

- Red Hat. Emotions, feelings, intuition - What is the emotional background?
- Yellow Hat. Benefits - Why is it worth doing? What's the catch? What are the benefits?
- Black Hat. Evaluation - Does it work? What are the disadvantages? What is wrong?
- Green Hat. Creativity - What is the power of imagination, and is it possible to create new ideas?
- White Hat. Information - What we know and what we should know?
- Blue Hat. Reflection - What have we achieved? What do we do next?

This approach to the evaluation of information, in the experience, is very useful.

The authors are recommending that the head creates a register of ideas in the management system (ID-register) (see Fig. 1). Register is a range, category of the database of the organization formed from the flow of diverse information. Register of ideas includes all products of intellectual activity of top manager. In fact, it is a subject-oriented heuristic tool that allows you to select the conditions and methods for the creative process in dealing with non-standard management tasks. The structure of this register is developed on the basis our own experience and pilot application. The register was used in the work of an expert, a teacher, a manager and showed to be effective. On its basis, the creative potential of a top manager will rely on the intelligence of the staff and ensure the success of the organization.



Comments to Fig. 1

Fig. 1: Structure of the register of ideas for a top manager

The register generates a certain style of problem solving, with a view to achieving maximum efficiency itemized as follows:

1. Search for incidentally possible additional product (byproduct).
2. Evaluation of the commensurability of costs and benefits.
3. Search for ideas.
4. Comparison of methods for solving complex problems.
5. The algorithm of solution.

5.2. Wisdom as the component of corporate memory

For the first time ever, the conception of corporate memory was presented by J. Walsh and G. Ungson in 1991. Also, in the research of corporate memory, the works by O. Kuhn and A. Abekker, M. Ackerman and S. Halverson, B. Kogut and J. Zander, G. Hedlund, R. Becket, S. Wang, R. Hall, J. Sunderlends and R. Stäblein, T. Gavrilova, D. Kudryavtsev, V. Malinovskiy, A. V. Novichkova by are known. The works related to this issue by such specialists in the field of economics and management as I. Ansof, S. Beer, P. Drucker, R. S. Kaplan, D. P. Norton, M. E. Porter, C. Prahalad, G. Hamel, A. L. Gaponenko, V. S. Yefremov, G. B. Kleiner, E. M. Korotkov, D. S. Lvov, A. M. Makarov, N. N. Masiuk, B. Z. Milner, A. I. Tatarkin, Ye. V. Pilipenko and others can be mentioned.

The practical significance of these research works is the fact that the results thereof have direct importance for improvement of management of enterprises and providing for their competitiveness. Along with that, the analysis of these works has shown that the aspects related to understanding corporate memory as management resource and concentration of practical wisdom (wisdom in action) are insufficiently worked out.

Corporate memory as management resource of an industrial enterprise was studied in the dissertation by Razheva (2013), but no such studies were conducted in respect of the field of wise management of consulting company.

Corporate memory in the mentioned above literature is construed as a formalized intelligent information intelligent resource of industrial enterprise the functioning of which is aimed at formation of a unique competency of the enterprise, and, in result, providing for a sustained development thereof. Herewith, within the frames of institutional approach, corporate memory is regarded as an element of integrated management resources. The main criterion for including knowledge into corporate memory is the topicality thereof, the applicability and practical use. The conceptual model of the functioning mechanism of corporate memory should be mentioned (Fig. 2).

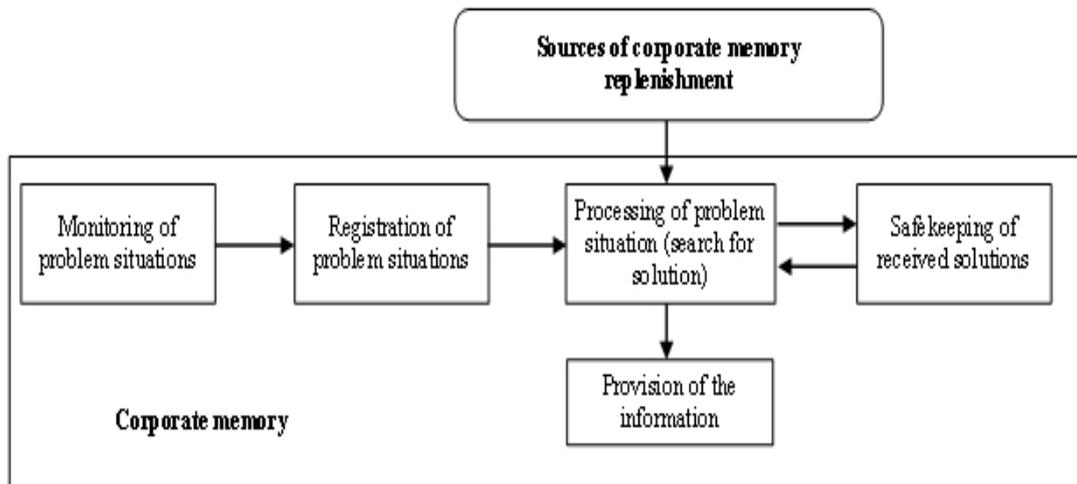


Fig. 2: Conceptual model of the functioning mechanism of corporate memory

According to this model, the functioning mechanism of corporate implements the following five main functions:

- Monitoring of changes in the external and internal environment of enterprise;
- Registration of educed problem situations;
- Search for the solution of registered problem situation;
- Storage of the acquired information on the solution found;
- Provision of information (Razheva, 2013).

The specified targets of the corporate memory blocks unequivocally correspond to the structure of problems encountered in the course of economic activities of industrial enterprise. It is suggested that the efficiency of the information provided in order to solve problems is evaluated with the help of specially developed indicators, which reflect the situation with the economic activities of enterprise (Razheva, 2013) which are based on the system of key performance indicators of R. Kaplan and D. Norton and characterize the achievement of the set objectives.

The following forms (Razheva, 2013) of implementation of corporate memory at industrial enterprise are distinguished:

1. Document turnover system (in paper and electronic forms): formalized knowledge of employees in the form of reports, statements of work, managerial documentation, position descriptions and technology instructions, etc.;
2. Specialized system of corporate knowledge management;
3. Enterprise's library of technical guidance documents, a formalized information in the form of provisions of standards, technical regulations, scientific literature, etc.;
4. Corporate information portal, the intranet site of the enterprise which provides its employees and employees of partner enterprises with the access to a certain set of documents and to internal services.

In the conditions of development of information technologies, the most promising of them is the enterprise's corporate information portal. It has the following distinctive features:

1. The capability of providing information for carrying out practically all managerial activities (the completeness of provided data);
2. The availability of the provided information n online mode from any spot of the Earth where Internet is accessible;
3. The objectiveness of the provided information thanks to a mandatory procedure of approval of the information published on the portal;
4. The uniformity of the enterprise's information space;
5. Unique information space of each employee determined by his/her job duties.

The analysis of the contemporary market of systems for such purposes shows that practically always ready software solutions are oriented at the enterprise activity as a whole. The role of the chief

executive officer is taken into account only in customized systems either requiring expensive adaptation and update or disregarding the client's needs (McKnight, 2013).

The process of creation and management of the enterprise development itself is not taken into account in existing versions of software solutions. Information systems in their traditional form, which are offered on the market, can contribute hardly anything to the solution of management problems in unique situations (Reznik, 2014). And that is natural because each such problem requires special ways of acquisition of necessary information. A material part of such information is qualitative experts' judgments. The variant of solution of this problem is what is suggested.

Development of information systems which are based on integration of results of the activities of chief executive officer into the general activity of organization is a poorly studied field (Pearlson and Saunders, 2013). The topic of generation of possible variants of managerial decisions for selecting an optimum one among them has not been researched in literature. Therewith, the quality of management is significantly improved.

5.3. Wisdom and intelligent information systems in management tasks

Transfer of "deep" knowledge of the subject area and management tasks to the expert systems is a big problem because of the complexity of formalization of heuristic experts' knowledge. Testing of intelligently interactive information system is quite labour-intensive (Kline, 1972). The head can cover the whole picture, all aspects of the current problems and concepts and to understand how they relate to the main strategic goal of the enterprise on the basis of information received from the output forms of intelligent systems from anywhere in the world.

Output forms contain concentrated knowledge, recommendations and options for decision-making. This reduces the risk of manipulation of a top manager by the employees. The search for the meaning hidden in the text of the output form is determined by the top manager.

High performance of intelligent management systems is determined by their ability to function under various uncertain factors: incomplete information, possibility of unforeseen situations in the operation of the enterprise, as well as the aims from the corporate memory (Kransdorff, 2006).

The activities of any modern mature company is accompanied by registration and record all the details of its activities, and the computer systems used for that purpose carry out the process of information processing, but an important part of decision-making processes related to singling out of knowledge (meaning) of the information still remains with the human. Organizational (corporate) memory stores information from various sources

(archives, knowledge bases) of the enterprise and makes it available to professionals in decision-making in the context of management tasks. Corporate memory allows using past experience, avoiding recurrent mistakes; and the role of a wise leader in this process is invaluable.

6. Discussions

6.1. Chief's exercise in wisdom

Based on the foregoing, guiding principles of chief's wisdom, main paradigms of top manager are pointed out (as the outcome of our practice):

1. To search for the reasons of problems, but not only to eliminate consequences. Any manifestation of a problem has to be perceived as valuable information on the basis of which the sequence of cause-and-effect relations can be established and the source thereof can be found (Fischer and Uri, 1992).

2. To use a project approach in work. For all kinds of works, the following is formulated: the objective, the deadline, the team, the consumer of the result (Lapygin, 2008).

3. Not to divide work into important and minor.

4. To be ready to assume responsibility for failures of one's company, not to let failures to get him/her down.

5. To arrange sources of information according to the level of integrity and to eradicate the practice of discussing problems based on rumors and concoctions.

6. To establish communicative contacts and to use feedback from employees; to respect people's opinions regardless of their position.

7. To realize that understanding orders requires the consideration of cultural traditions, education level, age of employees and conversation partners (Gadamer, 1994; Gadamer, 1988).

8. Not to try to save money on minor items, the success of organization depends on them at times.

9. To care for human capital assets (Aleksandrov, 2005).

10. To correctly allocate duties (according to abilities and professional skills), to explain tasks in detail and to elaborate why that has to be done.

7. Conclusions

1. In addressing the information and management tasks, wise management features are transformed into the leading requirements of the management process and ethical principles of the head.

2. The problem of the wise management organically includes creativity, which involves the introduction of innovations in the management process.

3. Creativity in management has a broader context - forming humanistic civilization, which provides for the cooperation of those managing and managed.

4. The head should have the register of ideas for effective creative solutions to non-standard management tasks.

5. Transfer of "deep" knowledge of the subject area and management tasks to expert systems is an imperative of time and the basis for wise management.

The authors are currently testing the register of management, a guide for the wise management, and hope to further announce the results of implementation.

References

- Abraham, J. (2014). *Product Information Management: Theory and Practice*. Springer.
- Adizes, I. (2004). *Leading Management/Mismanagement Styles: How to Identify a Style and What to Do about It*.
- Adizes, I. K. (2012). *Styles of Management: Efficient and Inefficient*. Moscow, Alpina Business Books.
- Ashirov, D. A. (2006). *Organizational Behaviour*. M.: TK Wellby "Prospect".
- Ayan, D. (1997). *Eureka*. St. Petersburg, Piter Publishing.
- Damij, N., Damij, T. (2013). *Process Management: A Multi-disciplinary Guide to Theory, Modeling, and Methodology*. Springer.
- De Bono, E. (2006). *Water Logics*. M.: Popurri.
- De Bono, Ed. (1985). *Six Thinking Hats*. London, Penguin Books.
- De Bono, Ed. (1994). *Water logic*. London, Penguin Books.
- Fischer, R., Uri, U. (1992). *The Way to Concord or Negotiations without Defeat*. Moscow, Science
- Fox Jeffrey, J. (2002). *How to Become a Great Boss: The Rules for Getting and Keeping the Best Employees*. First published by Hyperion.
- Gadamer, G. G. (1988). *The Truth and the Method: Fundamentals of Philosophical Hermeneutics*. Moscow, Progress.
- Gadamer, H. (1994). *Hermeneutics and Truth*. Chicago: Northwestern University Press.
- Gates, Bill (2000). *Business @ the Speed of Thought*. Moscow. Eksmo-Press.
- Glazkova, I. N. (2014). *Risk Management as the Mechanism for Improvement of the Competitiveness of Business Entities in Unstable Environment Conditions*. St. Petersburg, Russia.
- Karelin, V. P. (2011). *Intelligent Technologies and Artificial Intelligence Systems for Support of Decision-Making*. Reporter of Taganrog Institute of Management and Economics, Vol. 2. Accessed at <http://cyberleninka.ru/article/n/intellektualnye->

tehnologii-i-sistemy-iskusstvennogo-intellekta-dlya-podderzhki-prinyatiya-resheniy

- Kim, L., Muhitdenova, A., Kamaldinova, A., Khalikova, Sh. (2014). *Procedia – Phenomenon of Social Identification: The Fundamental Problems. Social and Behavioral Sciences*. Vol. 140, pp. 687–690.
- Kline, M. (1972). *Mathematical Thought from Ancient to Modern Times*. Oxford University Press.
- Kransdorff, Ar., (2006). *Corporate DNA: Using Organizational Memory to improve poor decision-making*. Gower Publishing.
- Kumar, V. (2013). *Fundamentals of Pervasive Information Management Systems*. Wiley.
- Lapygin, Yu. N. (2008). *Project Management: From Planning to Assessment of Efficiency*. Moscow, Omega-L.
- Liker, J., Khosesus, M. (2011). *Toyota Corporate Culture Lessons for Other Companies: truncated translation from English* Liker, J. Moscow, Alpina Publishers.
- McCregor, D. (1964). *The Human Side of Enterprise. Readings in Human Relations*. N. Y.
- McKnight, W. (2013). *Information Management: Strategies for Gaining a Competitive Advantage with Data*.
- Morgan, J., Dale C. (2013). *Managing IT Projects for Business Change: From Risk to Success*. BCS.
- Ouchi, W. (2009). *The Secret of TSL: The Revolutionary Discovery That Raises School Performance*. N.Y., Simon & Shuster.
- Pearlson, K.E., Saunders C.S. (2013). *Managing and Using Information Systems: A Strategic Approach*. Wiley.
- Razheva, A. A. (2013). *Dissertation. Corporate Memory as the Managerial Resource of Industrial Enterprise*. Ivanovo, Russia.
- Reznik, S. (2014). *Management. Managing Human Resources in Social-Economic Systems: Monograph. INFRA-M. Guide to Project Management Body of Knowledge (PMBOK® Guide)*. (2013). Fifth edition. Project Management Institute, Pennsylvania.
- Tsekhovoy, A. (2014). *Project Management in Kazakhstan is developing. Project Management World international internet magazine, Vol. 12*. Accessed at <http://pmworldjournal.net/article/project-management-kazakhstan-developing/>
- Tsekhovoy, A., Stepanov, A., Stepanov, V. (2013). *Virtual Scientific Society and Network Technologies as Factors of Industrial and Innovative Development. International journal of experimental education*. Vol. 2.