

THE INNOVATIVE ROLE OF PERSONNEL APPRAISAL IN THE KNOWLEDGE BASED ENTERPRISES

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Introduction

Based on a great respect for knowledge, a new economical conception was created, i.e. Knowledge- Based Economy (KBE). It was supposed to be an alternative of the classical conception of economy, understood in the traditional way, according to which economy was based upon the application of the most significant inputs, such as labour, land and capital.

The author of the present research, due to his particular interest in the problematic of human resources management and as a result of the observation procedures, analysis of literature sources and finally, as a result of the recently implemented analytical research concerning the knowledge management, concentrated upon the issue of human resources management and its role in the development of knowledge management in the enterprise. The most important goal of the present research was to define the dependency between the means of the personnel appraisal applied at the enterprise, and the level of knowledge management achieved by the enterprise.

The role and a place of personnel appraisal in a process of human resources management

Periodical personnel appraisal procedures have a complex character. They enable to evaluate the results of work implemented within a certain period of time; they make it possible to plan the tasks for the future and to specify the development needs of the employees. They should follow the preliminary defined rules, criteria and techniques, familiar both to the appraising and appraised employees. They can also be a base for making decisions, concerning the current and future tasks, personnel policy, and salary issues. Personnel appraisal is also a strong motivational tool and can be a perfect source of information for managers about current and future problems in personnel management.

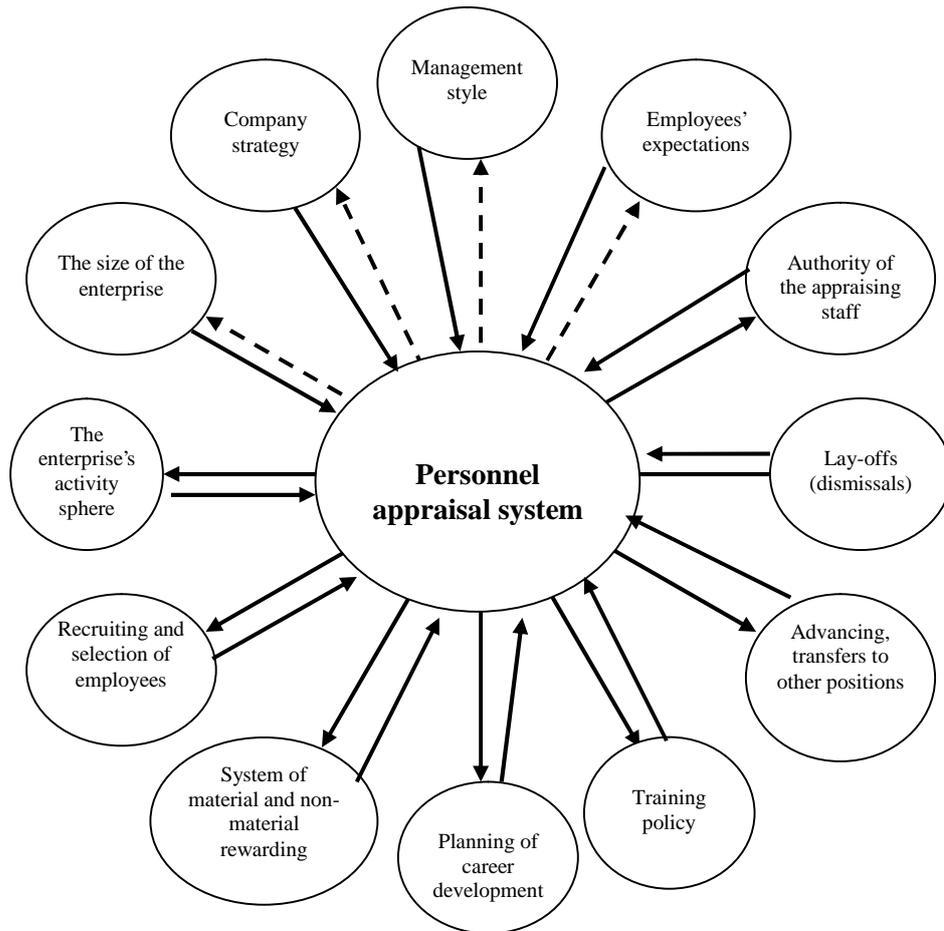
By L. Zbiegie –Maci g, personnel appraisal can be applied in various situations, namely: (Zbiegie -Maci g, 1996: 99):

- During the personnel recruiting procedure for the purpose of getting the best employees,

- Estimating, if this individual will be a successful employee for the organization,
- Personnel appraisal procedures can provide feedback information about the results of work, they lead to the objective evaluation of the ambitious personnel and stimulate the weak employees,
- Personnel appraisal can be used in constructing of the communication channels: it can facilitate the procedures of communication with the subordinates and superiors,
- During the identification of the spheres where training will be necessary,
- During the definition of carrier development ways,
- During the specification of salary rate,
- During the identification of the best employees and candidates for dismissal,
- During the construction of the image of the company having an effective appraisal system,
- As a part of the policy of countermeasures against negative phenomena, like producing of low-quality goods.

The relations between the periodical personnel appraisal and other personnel management elements are numerous and complex: (Compare picture 1)

Pic. 1. The place of personnel appraisal system in the personnel policy of the enterprise



Source: M. Sidor-Rz dkowska, *Constructing up-to-date personnel appraisal systems*, Economic Oficinal, Kraków 2003 **czy 2000?** p. 22.

Personnel appraisal should be applied in the current personnel policy processes and while defining the personnel strategy of the company.

„The strategy of human resources management is a close set of actions including the definition of long-term goals, formation of rules, plans, and programs of activities, directed at the creation and application of organization’s human capital, securing the solid competitive advantage.” (Pocztowski, 2003: 60)

Exactly in this sphere one can distinguish the fundamental role of the personnel appraisal in the process of the development of knowledge management system at the enterprise.

The application of the personnel appraisal is related to the implemented strategy of the enterprise. Enterprises, which implement the strategy of development or defensive strategy, attach more attention to the personnel appraisal. Enterprises, which did not elaborate their

own strategy, do not attach sufficient importance to the personnel appraisal (Atama czuk, 2001: 53).

„The planning of human resources management procedures requires a constant answering to the question about the quality of human potential in relation to the organization's strategy. And due to the systematic personnel appraisal it is possible to come to concrete decisions about the next steps in human resources policy, leading to the employment of new personnel, to necessary training or to the organization of employment procedures” (Janowska, 2002: 116).

The appraisal for the purposes of human resources planning is based on the analysis of work and actual work positions. The appraisal enables to take rational decisions concerning the recruiting of the personnel. The appraisal also enables to compose a personal profile of the recruited candidate. The appraisal should accompany each stage of recruiting and selection process (Janowska, 2002: 116-130). The candidates for a certain job position may be found at internal and external labour markets. The recruitment of the candidate from the internal market, i.e. from own organization, is an easier and less expensive task. One can implement an accepted personnel strategy and promote enterprise's own and proved employees. To do it, one should analyze the description of job positions, professional profiles and results of the personnel appraisal. The final recruitment of candidates is carried out during the selection.

One of the selection methods is Assessment Centre (Jamka, 1997: 60). This method enables to define the potential of the personnel, its training and development needs; it enables to identify the candidates, which can be employed to a certain position or transferred to the position, which is different from the one he currently occupies.

The system of periodical personnel appraisal facilitates the acquirement of valuable information necessary for the effective motivation of the personnel. Results and conclusions of personnel appraisal can be used in salary grow procedures and tariff rate shifting. The system of periodical personnel appraisal is intended to facilitate closer ties between the systems of reward and the results of employees' work. The application of personnel appraisal may lead to the improvement of motivation level of the employees and to the fair distribution of financial incentives and bonuses for the employees.

By M. Sidor-Rz dkowska, the employees regard the personnel appraisal system as fair only if there is a close relation between the results of work and the rate of bonus or award (Sidor-Rz dkowska, 2000: 174).

To ensure a successful motivation it is not enough to tie motivation and financial sphere. Non-material issues shall also be included into the motivation increase procedures. The system of periodical personnel appraisal initially has a mobilization and motivation character, because it encourages the employed personnel to improve its qualification (Kaczy ska-Maciejowska, 2002: 46-49).

Depending on the result of personnel appraisal, the transfer of personnel - both vertical and horizontal can be carried out. We can differentiate advancing, dismissal, demotion and transferring.

Transfer of an employee is a very serious challenge for the training policy. It is vitally important to pick up an appropriate training program, which would enable the employee to feel comfortable at a new job position.

The system of personnel appraisal is also used in the procedures of dismissal of personnel. It is necessary to carry out an explanatory talk with a negatively appraised employee. This talk is intended to define the reason for the negative appraisal (why the employee works badly). Maybe the reason of bad work does not depend from the employee and \ or is temporary and it will be possible to avoid dismissal.

„Such talk is intended to clarify, that the employee inefficiently performs his obligations because of the following reasons (Sidor-Rz dkowska, 2000: 189):

- The employee is not able to perform his obligations- there is a considerable difference between the abilities, necessary to implement his work and the qualifications of this employee,
- The employee does not want- one can observe the difference between the personal opinion of the employee about his duties and the expectations of the management of the company,
- The employee cannot perform his obligations – the organizational structure of the company makes it impossible to perform his professional obligations”.

Before taking any actions it is necessary to check how long the employment period of the employee is, because it can become obvious that the negative personnel appraisal of this employee is caused by the improperly accomplished adaptation period. The method of "full load" without a proper preparation proves ineffective. Young employees should undergo a diligently elaborated preliminary training. It sometimes happens so, that the manager comes to a conclusion that an improper employee was hired. Therefore, recruitment and selection procedures shall be repeatedly analyzed in order to prevent such faults.

If an employee with a long term of service gets negative personnel appraisal, it is necessary to find out whether the requirements, concerning his job position changed, and if they really changed,- whether the employee was sufficiently trained. Maybe the employee has problems, which are not related to his work or he suffers from the "burn-up syndrome". In such case it is necessary to change the scope of his professional duties.

The decision about the dismissal shall be taken only after a proper analysis of positive and negative issues related to this dismissal.

Periodical personnel appraisal is intended to facilitate the identification of the best employees and the successful planning of their individual career development ways. Companies apply various approaches to career development ways of their employees. We can differentiate the following approaches: (Ko mi ski, Piotrowski, 2001: 437):

- "Invisible hand" approach- the organization is not involved in the career development ways of its employees, as it presumes that the best ones will cope with these ways anyway, and those who are not strong enough, should blame themselves for the failure in career development. In such situation more aggressive employees, not the best ones, are promoted.
- "Searching for pearls" approach- it is supposed that there is a group of talented employees in the company, and this group should be taken good care of. The task of managers is to discover this group and securing its members the promotion opportunity,
- The approach of planning the careers- the balancing of organization's needs and opportunities and individual aspirations and professional plans of the employees. Career planning in such case has a character of negotiations. Professional career is a common concern of employees and managers.

The word "career" is chiefly associated with a vertical advance. However, it is true that in the flat organizational structure of the company the number of the positions for the potential advance is less that in the companies with a ramified organizational structure. One should bear in mind that a good specialist does not always prove as a good manager. Therefore, while planning the career development ways one should consider a horizontal advance as well. An employee striving to acquire a certain job position should define his own strategy, his goals and ways to achieve these goals.

Already during the qualification interview it is necessary to analyze the abilities, skills and aspirations of the candidate for a job position. The employee should have a conception of his

own career progress and define the approximate time of the realization of his career. It would be useful to come back to the qualification interview during the procedure of personnel appraisal of this employee. Exactly at this stage it is necessary to check the stage in the realization of career development plans, to review the existing difficulties and then make appropriate changes.

The results of personnel appraisal enable to select candidates for the personnel reserve (current, development and perspective) for the management positions and to improve the qualification of the employees by sending them to the training. „To attach the features of a well-thought and well- executed strategy to the actions of personnel training (consisting not just in sending incidental employees to incidental training courses) a periodical personnel appraisal system is needed. It enables to accomplish a fair analysis of training costs.” (Sidor-Rz dkowska, 2000: 175). In actual practice the following types of analysis are applied (Sidor-Rz dkowska, 2000: 175-178):

- *the analysis of the efficiency of certain employees.* On the basis of personnel appraisal system, the advantages and drawbacks of each employee are defined, as well as the training plan of every employee;

- *the analysis of the requirements of a job position.* It is vital to specify whether an employee occupying a certain job position, possesses appropriate knowledge and abilities, necessary to perform his duties efficiently. If not, such employee should be sent to the training;

The decision about the advance should be supported by the comparison of knowledge, abilities and experience of the employee to the requirements of the job position. A candidate for a higher position should be appropriately trained in order to minimize the possibility of fault and promotion of an improper employee.

- *the analysis of the functioning of the company as a whole.* Advantages and drawbacks of the company are defined. On the basis of such analysis the departments, which sufficiently affect the functioning of the company, are identified. The analysis also enables to identify and train the key employees of the company;

- *collecting of the opinions of employees performing management functions and executive functions.* The employees should be aware what their own advantages and drawbacks are, and what kind of training they find consider to be the appropriate one.

The personnel appraisal system should be closely related to other issues of personnel policy. The interrelation of various elements of personnel management should take place under the condition of the feedback. Such interrelation should affect the quality improvement of the personnel policy procedures (Atama czuk, 2001: 25).

The application of personnel appraisal should be based upon the endeavour to achieve the defined goals of personnel appraisal.

The personnel appraisal system, if planned and applied correctly, is of great benefit both to the employee and to the organization (Compare: Table 1).

The employee gets information, concerning the perception of his behaviour and work by his superior. Also the employee discovers his advantages and drawbacks, requiring the improvement. What is equally important is that the employee has an opportunity to compare his results with the results of his fellow-employees. If the appraisal is fair, it has a positive effect upon his relations with his fellow-employees.

Table 1. The benefits for the employees and organizations caused by effective personnel appraisal procedures

Employees	Organization
Satisfaction of the need to possess information about the behaviour and work results of the employee	Improvement of quality and productivity of labour of certain appraised employees and groups
Satisfaction of needs for the personal comparison	A closer interrelation between rewarding (pay rise, bonuses, awards) of the employees and the results of their work
Widening of the feeling of safety due to the familiarity with the requirements and expectations of the organization	Improvement of the employees' motivation, a better application of their potential and a closer integration with the organization
Improvement of chances for the professional success due to the familiarity with the employee's own advantages and drawbacks.	Identification of the best employees and planning of their individual career development ways
Widening of the education and career development opportunities and ways	Identification of the worst employees and transferring them to lower and less responsible positions, involvement of them to an intense training process or dismissal
Impact upon the formation of communicative relations with the superior.	Identification of employees' training needs and gathering of the information necessary for the elaboration of the training plans in the organization.

Source: H. Król, A. Ludwiczyski (red.): *Zarządzanie zasobami ludzkimi. Tworzenie kapitału ludzkiego organizacji*. Warsaw: PWN 2006 p. 311-312.

From the perspective of the organization, personnel appraisal can be applied at any stage of personnel management. Already at the stage of employment it can be used to

evaluate the efficiency of the candidate for a certain job position. It enables the employer to take a more correct decision whether a candidate fulfils the necessary requirements, or whether the abilities of the candidate could be more useful on other position in the structure of the organization.

The results of personnel appraisal can be also useful in the process of decision-making about the transferring of the employees, in the estimating which employee does not fulfil the assigned tasks efficiently and may be transferred to another position, or whose profile of competence coincides with that of an ideal candidate for a certain position. Thus, the employee becomes confident of the efficiency of the employee on a certain job position. If the opportunities of the employee exceed the expectations and requirements of a certain position, the employee may advance to a more responsible job position. In the exceptional situations the appraisal results may be a sufficient ground for the dismissal of the employee.

In the motivation sphere the appraisal results should be a bench-mark for the elaboration of an efficient system of encouragement and rewarding. One more sphere of the personnel appraisal application in the planning of individual career development ways.

In the sphere of training and development the appraisal is effective in the identification of the advantages and drawbacks of the employees. Personnel appraisal procedure should be the benchmark for the planning of individual development programs, which are supposed to improve the effectiveness of work.

It should be emphasized that the results of the personnel appraisal contribute to the improvement of internal communication, as they provide the employees with the information about the quality of their work.

Research methodology

The investigation was carried out in the research and development organizations (RDU), where the human and his knowledge is supposed to be the main source of competitive advantage, together with the efficient organization of "knowledge procedures", such as acquisition / creation of knowledge, exchange, gathering and application of knowledge aiming at (for example) the elaboration of new technology or material. Thus, it is worth mentioning that here we mean enterprises based on development and improvement of knowledge management processes.

The procedural conception of knowledge management in the organization was accepted as a basic research conception. The terminological proposals of D.J. Skryme

(Skryme, 1999: 39), W.R. Bukovitz and R.L. Williams (Bukovitz, Williams, 1999: 2) was implemented in the project.

The fundamental goal of the investigation was the identification of the influence of personnel appraisal procedures, applied in the research and development organizations, on the process of knowledge management. Simultaneously, the achievement of cognitive and practical goals was presupposed in the present research.

- **Cognitive goals:**

- Identification and descriptive characteristics of relations between personnel appraisal tools, applied in the investigated enterprises, and knowledge management,
- Identification of a definite trend in the constructing of personnel appraisal tools (which criteria are appraised?).

- **Practical goal:**

- The definition of instructions facilitating the projecting of the periodical personnel appraisal tools in the knowledge management enterprise.

The fundamental hypothesis of the research was formulated by the author in the following way: the level of knowledge management, achieved by a research and development organization depends on the personnel appraisal tool, applied in this organization.

- *The dependent variable* is the achieved level of knowledge management
- *The independent variable* is a set of applied tools of personnel appraisal.

The subjects of the analysis in the implemented research work were the tools of the periodical personnel appraisal procedures, facilitating the knowledge management procedures. The fundamental questions put by the author were the following:

- What is the knowledge management level in the research and development organization (RDO)?
- Does the tool applied in the research and development organization (RDO) facilitate the introduction \ development of knowledge management program?
- What is the set of criteria of the personnel appraisal (contained in the appraisal tool) most efficiently stimulate the employees to engage in the adoption of knowledge management programs?

One of the first steps in the implementation of the investigation was the elaboration of the investigation tool, namely the Questionnaire.

The next step was the pilot examination of the research tool aiming at its eventual improvement.

The task of the Questionnaire, applied at this stage of the research was a general diagnosing of the development of actions related to knowledge management, implemented in the research and development organizations. The investigation enabled to identify various levels of knowledge management in research and development organizations (RDO). To differentiate between the levels of knowledge management the conception of R. Maiera (Maier, 2002: 393) was applied.

This approach made it possible to classify all investigated research and development organizations, according to different levels of knowledge management.

The questionnaire contains a positional instruction for the respondent. The investigation was carried out by mail. The questionnaire with the accompanying letter defining the investigation goal was sent to directors of 33 research and development organizations, selected from the Polish national database of research and development organizations, compiled by the Institute of Organization and Management in Industry „ORGMA SZ”. This database was limited only to organizations, which contained the attribute "research and development" in their name. In the accompanying letter there was a request to fill in the questionnaire and to submit it back for further investigation of personnel appraisal tools applied in the enterprises (high and middle management levels). The reply rate was 30% (11 enterprises).

The next stage of the research was the analysis of acquired periodical personnel appraisal tools for the appraisal of the managers of research and development organizations (RDO). There was an appraisal questionnaire for each research and development organization. This kind of situation facilitated the implementation of the analysis. The collected appraisal tools (appraisal questionnaires) were classified according to the knowledge management level in certain research and development organization.

Further procedures of analysis were carried out within the groups of research and development organizations (RDO) with different knowledge management levels. The comparative analysis of appraisal questionnaires in the research and development organizations with the highest and lowest knowledge management levels was the most valuable. The selection of extreme knowledge management levels aimed at showing the difference in the applied appraisal tools.

The final stage of the research was devoted to the definition of recommendations, concerning the projecting of personnel appraisal tools in knowledge management

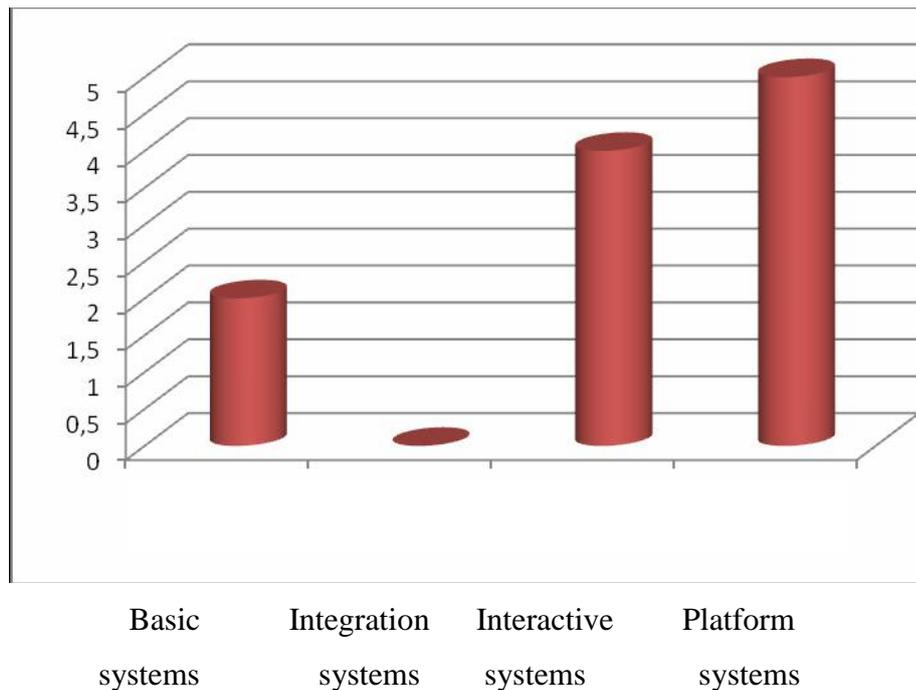
organizations, particularly the identification of appraisal criteria, which are the most essential from the point of view of effective knowledge management.

Empirical material gathered as a result of the investigation was exposed to the analysis, taking into account the goals of the present research. Further the synthesis of results was made, and the conclusions and recommendations, indicating the direction of a more large-scale research were specified. The implemented procedures of the analysis make up a basis for the verification of the research hypothesis.

Personnel appraisal in the practice of research & development organizations – research findings

On the basis of the material gathered during the research it was possible to classify the investigated research and development organizations according to the knowledge management level. The results were most promising. The absolute majority of research and development organizations occupied two levels with highly developed knowledge management. Five enterprises reached the fourth knowledge management level (the highest one) - „platform” knowledge management system, and four organizations reached the third level- interactive knowledge management system. Rather positive is also a fact that only two investigated organizations were only on their way to knowledge management, i.e. on the first, basic level. These investigations did not identify any representative of the second knowledge management level, i.e. integration system of knowledge management (Compare picture 2).

Pic. 2. The arrangement of the identified knowledge management levels in the research and development organizations



Source: author's own investigation

Such arrangement of knowledge management levels reached by enterprises may signify the growing interest in this problematic in practice and a regular effort in the development of this conception of management. Besides, such an intense engagement of the organizations in the implementation of knowledge management programs may testify in favour of good management methods applied in these organizations, and a high effectiveness of the accomplishment of their statute \ charter goals. These results would perfectly match the data specified in Chapter V, where the investigated objects were generally classified and information \ opinions concerning their effectiveness were represented.

The identification of knowledge management levels achieved by investigated enterprises and classification according to this criterion was important from the perspective of the further analysis. In compliance with the methodical assumptions of the present research, the next stage of analysis will be dedicated to the identification of common features of personnel appraisal tools within the framework of groups of enterprises (the criterion of achieved knowledge management level). The analysis was started from the most significantly represented level, i.e. from the fourth level of knowledge management (the highest level- "platform" systems). Five research and development organizations achieved this level: Marguerite, Hyacinth, Hibiscus, Chrysanthemum and Crocus.

The personnel appraisal sheet of the employee "Marguerite" consisted of four parts. The first part contained personal information of the appraised employee (such as: name and

surname of the employee, job position, department, length of work in this sphere, length of work on this position, date of the appraisal, period of the appraisal) and the level of achievements and abilities of the employee. This level had a form of a 5-grade scale, where the grade “5” denoted a very high level– it definitely differs from all the others-, and the grade”1” denoted a very low level, well below the average- which means that the employee does not fulfil the expectations. The second part of the appraisal sheet contained the appraisal criteria of the employee, these criteria were grouped in three categories:

- Efficiency of the employee in the implementation of duties,
- Qualification (striving to the professional growth)
- Personal and behaviour features.

Within the group “Efficiency in the implementation of duties” the following criteria were differentiated: the degree of the accomplishment of the assigned duties (quantity of implemented work), the quality of the implemented work, diligence, accuracy, solidity, honesty in the implementation of work (attitude to work), urgency in the implemented work, austerity and care about the reduction of costs (materials, equipment), implementation of the orders of the superior, willingness to implement additional work challenges.

Next group of criteria – “Qualification” included the following: current qualification (appropriate for the occupied job position) and skill development (professional training-courses, apprenticeship trainings).

The last group of criteria “Personal and behaviour features” comprised the following: employee’s initiative and the innovation approach to the ways to increase the efficiency of work, availability, operational efficiency and independence, collaboration within the company, personal culture and punctuality. The appraisal was implemented both by a superior and an employee.

In the third part the marks from the previous parts were summed up and the recommendations for the employee were defined; the fourth part, in its way, touched upon the eventual dismissal of the employee and conclusions of the appraisal team.

The appraisal sheet in "Hyacinth" had also a complex structure and contained an element of self-assessment. It also contained the aim of the appraisal, information about the employee (similar as in "Marguerite ") and 12 criteria of the appraisal with a 5-grade appraisal scale (1 – well below expectations, 5 – excellent). The appraisal sheet took into account the following appraisal criteria: knowledge and professional skills (the volume of the information and the ability to implement assigned tasks), implementation of instructions (understanding and

implementation of oral and written instructions), the estimation of the situation (the ability to analyze and interpret information and to draw logical conclusions), efficiency (the ability to accomplish tasks on time), the quality of work (precise and diligent implementation of assigned tasks according to appropriate requirements), relations with fellow-employees (the ability to make good relationship with the fellow-employees at work, good cooperation with the others); relations with the superior (the ability to draw up good collaboration with the superior), an appropriate approach to the customer (the ability to build up an attentive and open cooperation with customers in the fulfilment of their expectations), appearance (neat, non-defiant clothes, personal hygiene), psychophysical condition (the ability to implement everyday work without the evident signs of tiredness and exhaustion), obligatoriness (the ability to carry out work without the continuous supervision, compliance with the time schedule), initiative (the ability to discover the necessity of taking certain actions); creative thinking and introduction of new solutions. At the end of the appraisal sheet there is a blank space for the information about the adherence to the requirements of labour and industrial Hygiene, employee's achievements and professional career. There is also a place for a general appraisal and for the identification of employee's advantages and spheres of the planned professional training of the employee.

The appraisal sheet in „Hibiscus” is less complex than the others; however, it contains a wide palette of appraisal criteria. Alongside with personal information about the employee it contains a section, which has to be filled in by the employee and the superior (this section is the most complex, as compared to other sheets). In the section intended for the employee's appraisal the appraised employee is asked about the following: the scope of his professional duties, special achievements, failures and professional development (realized ambitions, intentions currently implemented and planned and the preliminary conditions). The section intended for the superior's appraisal contains fourteen criteria appraised according to the 6-grade (1 – well below expectations, 6- excellent). These criteria were as follows: knowledge and professional skills, methodical background, proficiency in foreign languages, ability to plan and organize work, implementation of the assigned tasks on time, the ability to work independently, the feeling of responsibility, the acceptance of new initiatives, due care about own professional development, relations with fellow-employees, the approach to the customer, psychophysical condition, due care for own appearance, engagement into the development of the company and into its positive representation. The appraisal sheet is finished with remarks, conclusions, recommendations and suggestions of the superior.

The appraisal sheet in "Chrysanthemum", just as the other sheets, contained general information about the employee, a general appraisal and commentaries of the superior and the appraised employee (in the final section of the sheet). However, its main part included the appraisal of seven criteria according to the 5-grade scale (definitely does not fulfil the criteria-excellently fulfils the criteria). The appraised criteria were as follows: professional preparation for the implementation of tasks (education, professional experience, readiness to improve professional knowledge), quality and quantity of accomplished work (an accurate organization and planning, the ability to arrange the priorities, efficient work in accordance with the schedule (efficient time management), solution of problems, initiative (the ability to identify problems, to select important facts and circumstances, to draw correct conclusions, to provide an innovative contribution in the form of new ideas); engagement (the approach to the implementation of duties, consistency in the accomplishment of tasks, acceptance of new challenges), team- work ability (active participation in team work, harmonious collaboration in the group, respect for the others), communication skills (the ability to formulate ideas precisely, effective communication with the superiors and fellow-employees, the ability to construct effective oral communication, the ability to construct effective written communication); focus on customers (care for the customers, amicability / politeness, due care for the company image, due care for the place of work and appearance).

The appraisal sheet of the enterprise „Crocus” in its structure was similar to the appraisal sheet applied in "Chrysanthemum". It included the employee's self-assessment; the appraisal was carried out according to the 5-grade scale, but the appraisal criteria were widened and included three more criteria, namely:

- Effective work in changing environment (the employee works well under pressure and willingly accepts changes. He regularly achieves good results in spite of the changing environment. He helps to avoid problems by way of anticipation of eventual problem situations).
- Constructing of professional contacts with other departments (the employee searches for an opportunity to develop cooperation relations with other departments). The employee contacts with the employees from the other organizations, develops information exchange about common needs and means. The employee delivers information and provides assistance to other departments, tries to encourage and motivate the others.
- Instructing and advising (the employee establishes open, helpful and double-sided contacts with other employees, he carries out the regular instruction sessions

consecutively and regularly, he tries to help other employees in improving their skills and knowledge, so that they can implement their work in the best possible way).

These three additional criteria were described very precisely, as compared to the others. There were no criteria of this kind in any other appraisal sheet. Two of them ("Constructing of professional contacts with other departments" and "Instructing and advising") seem to fit the group of criteria "Ability to the team work". However, the administration of this organization decided to separate them, probably, in order to emphasize their specific character. These criteria seem to be very up-to-date, as compared to the others, they are fully compatible with the knowledge management conception, due to their considerable importance in the support of a wide-scale cooperation (between departments), in the information / knowledge exchange (including tacit knowledge and learning through experience), in the estimation of the adaptation skills of the employee (minimizing the obstacles impeding the acceptance of any new initiatives).

Certain appraisal criteria (the common ones) were a bit less precisely characterized as compared with their characteristics in "Chrysanthemum". Such inaccuracy concerns the following criteria:

- Solution of problems, with no ability to select important facts and circumstances included,
- Focus on customers with no care for company image included.

It should be pointed out that appraisal sheets of all the enterprises in this group contained a clearly defined appraisal aim which generally emphasizes the following:

- Assisting the employee in his professional improvement,
- Supplying the employee with regular important information,
- Providing the employee with professional assistance in the sphere of professional self-improvement.

Next numerous group of enterprises were the research and development organizations which reached the third level of knowledge management– interactive systems, i.e. second most important level of knowledge management. This group consisted of four organizations: Mimosa, Butterfly orchid, Rose and Tulip.

The personnel appraisal sheets of the representatives of this group, similarly as those from the previous group, contained an introductory section with the information about the appraised employee and a final section with appraisal conclusions.

The appraisal sheet in the enterprise "Mimosa" contained eight appraisal criteria: significant knowledge, effectiveness of work, adherence to the standards of the organization, initiative, efficiency in time management, successful team collaboration, attitude to customers, and adherence to the discipline requirements. As the majority of appraisal sheets this one also contained the five-grade appraisal scale (from "requiring a major improvement" to "excellent").

The appraisal sheet in the organization "Butterfly orchid" structurally was very similar to that in "Mimosa". Eight criteria were appraised according to the five-grade appraisal scale (well below expectations- well above expectations). This appraisal sheet contained the following criteria: the ability to arrange priorities in activities, the ability to solve problems and to make decisions, the ability to collaborate with the others and to form a team, determination and consistency in the implementation of tasks, initiative and innovative approach, resistance to the stress, obligatoriness and precision, discipline.

The appraisal sheet in the organization "Rose" was the most specific in this group of research and development organizations, as it was divided into two parts. One of these parts contained three criteria (education, proficiency in English and PC). These criteria were appraised according to three-grade scale. The other part contained descriptive appraisal of the following criteria: effective time management, the ability to comply with the work schedule, dynamism, initiative, creativity, ability to make decisions, collaboration with fellow-employees, punctuality and the desire to improve qualification.

The appraisal sheet in "Tulip" had the most complex structure, as it contained as many as sixteen appraisal criteria. Among them one can find the following: responsibility for assigned tasks, persistence in the accomplishing of goals, the ability to organize work, the ability to establish and support contacts, independence, the ability to work without regular control, initiative and introduction of changes \ innovations, the ability to act quickly, flexibility in the accomplishment of tasks, resistance to stresses, the ability to solve problems and to make decisions, communicative ability, the ability to collaborate, the ability to influence upon the others, the ability to soothe tension \ to resolve conflicts, willingness, engagement in the development of one's own professional qualification. These criteria were appraised according to the five-grade scale without the characteristics of each individual appraisal grade.

The remaining organizations formed the group with the lowest level of knowledge development practice. This group consisted of two research and development organizations: Iris and Calendula.

The appraisal sheet in the organization "Iris" contained one very general question directed at the appraised employee. This question was the following: How would you estimate the effectiveness of your work? The appraised employee had to select one of five possible answers: very high (effectiveness), high, satisfactory, requires improvement of certain aspects, but generally sufficient, insufficient. Besides, the following four questions were addressed to the appraised employee:

- What would you change in your work in order to accomplish your tasks better?
- What would you change in the work of your team?
- What would you change in the organization of your company's activity?
- What ways to improve your own qualifications do you consider the most sufficient? Name the sphere, the order and the desired term of proposed trainings, courses, etc.

This sheet was intended for the appraisal of the employee only. There was no place for the second appraisal stage in it, i.e. the appraisal carried out by the superior. There was no place for conclusions and recommendations in it either. Although this appraisal sheet was also meant to facilitate the development and collaboration- important elements for knowledge management sphere- however, it contained only the employee's wishes. There was no employee's appraisal regarded as a broad concept, there was just the employee's estimation of the effectiveness of his own work.

The appraisal sheet in "Calendula" had also a very simple structure. It contained just the following criteria: collaboration, the education level, obligatoriness, accuracy, the ability to organize tasks and the attitude towards customers. This appraisal sheet, in its turn, was intended for the superior, who could appraise the criteria according to the three-grade scale (poor – sufficient- high). It should be noted that the majority of the appraised criteria emphasized the technical aspect of the implemented work (four criteria). Only two criteria had a social character (collaboration and attitude towards customers).

Both appraisal sheets contained only fragmentary information about the employee, such as: name and surname, department. There was no information, available in the appraisal sheets of the organizations from higher levels of knowledge management. Such information is as follows: the period of work in the company, the period of work at this position, the appraisal period, the date of the last appraisal, the results of the last appraisal, etc.

The composite characteristics of personnel appraisal sheets of the investigated research and development organizations were presented in Table 2.

Table 2. The composite characteristics of personnel appraisal sheets of the investigated research and development organizations

Name of the enterprise	Appraisal aim	Detailed characteristics of the criteria	Self-rating	The appraisal of the superior	Conclusions from the appraisal
Chrysanthemum	+	+	+	+	+
Butterfly orchid	-	-	+	+	+
Hyacinth	+	+	+	+	+
Hibiscus	+	+	+	+	+
Iris	-	-	+	-	-
Crocus	+	+	+	+	+
Mimosa	-	-	+	+	+
Calendula	-	-	-	+	-
Rose	-	-	+	+	+
Marguerite	+	+	+	+	+
Tulip	-	-	+	+	+

Source: author's own investigation

For the purpose of the comparing and identification of common features of personnel appraisal sheets, applied by research and development organizations of the same group, i.e. practicing knowledge management procedures on the same level, the appropriate modifications of their arrangement (represented in Table 2) was carried out. All elements remained the same, only the order of characteristics of certain organizations was modified, i.e. these organizations were arranged according to the achieved level of knowledge management, not alphabetically, as shown in Table 2. General characteristics of personnel appraisal sheets based on the criterion of knowledge management level is presented in Table 3.

Table 3. The complex characteristics of personnel appraisal sheets of the investigated research and development organizations (according to criterion of knowledge management)

Level	Name of the enterprise	Appraisal aim	Detailed characteristics of the criteria	Self-rating	The appraisal of the superior	Conclusions from the appraisal
IV	Chrysanthemum	+	+	+	+	+
	Hyacinth	+	+	+	+	+
	Hibiscus	+	+	+	+	+
	Crocus	+	+	+	+	+
	Marguerite	+	+	+	+	+
III	Butterfly orchid	-	-	+	+	+
	Mimosa	-	-	+	+	+
	Rose	-	-	+	+	+
	Tulip	-	-	+	+	+
I	Iris	-	-	+	-	-
	Calendula	-	-	-	+	-

Source: author's own investigation

Table 3 became a very good benchmark for further comparative analysis. It was easy to distinguish the advantage of appraisal sheets applied in research and development organizations, which reached the highest knowledge management level, over the personnel appraisal sheets in other organizations (with a lower level of knowledge management). The difference seems drastic if we compare the organizations on utmost knowledge development levels (fourth and first). Personnel appraisal sheets applied in Chrysanthemum, Hyacinth, Hibiscus, Crocus and Marguerite had many common features. They were the closest to the ideal model of the personnel appraisal sheet. They contained a clearly formulated aim of the appraisal; they had a sufficient number of personnel appraisal criteria. These criteria were not presented as slogans but they were justified (specified) so that everyone can understand them in a similar way. Besides, more than the sheets of other organizations, these sheets contained specific and more important personnel appraisal criteria (from the perspective of knowledge management), such as psychophysical condition (Hyacinth, Hibiscus). This criterion is often ignored in personnel appraisal sheets, but it seriously affects the efficiency of the employee and his ability to implement new initiatives. These sheets to a great extent (like those of

research and development organizations practicing knowledge management on the third level) measured a series of other criteria important for knowledge management, such as: possessed qualification, skill development, initiative and innovative approach to work, collaboration within the company, ability to analyze and interpret information and to draw logical conclusions, ability to solve problems, an approach to the customers, engagement in the development of company and its positive presentation, communicativeness. The fact that the opinion of the appraised employee (self-assessment) was also considered is an important feature of these personnel appraisal sheets. Moreover, each appraisal sheet contained blank space for the conclusions summarizing the appraisal recommendations and other remarks, important for the employee's further development.

What concerns research and development organizations, which occupy the basic level of knowledge management (first level), their personnel appraisal sheets are used for the implementation of the appraisal by the superiors (Calendula) or for self-assessment (Iris). Their level of accuracy is far from the norm. The structure of their appraisal sheets wishes much to be desired; therefore the effectiveness of the appraisal is highly doubtful. The employee is not aware of the goal of the appraisal; he has no opportunity to express his opinion about his own advantages and drawbacks (Calendula). He is not aware of the results of the appraisal, its impact on his future job and fate, etc. Therefore, the appraisal itself may be regarded as a mere pro forma action, a needless measure.

The appraisal sheets of the research and development organizations, which reached the third knowledge management level, are close to those of organizations from the fourth knowledge management. The majority of these their-level organizations take into account a considerable number of appraisal criteria, but these criteria are not precise, which causes a risk of their dissimilar interpretation and irregular results. Another disadvantageous feature of these sheets was a lack of a clear aim of the appraisal. However, their advantage was that they were designed both to the appraisal of the superior and to the self-assessment of the employee, and contained conclusions and recommendations for the future. One more advantage of these appraisal sheets was the criteria measured by them. Namely, these sheets take into account a series of criteria, which are important from the perspective of knowledge management, in a similar way as the research and development organizations from the highest (the fourth) knowledge management level.

The arrangement of the basic characteristic features of personnel appraisal sheets of all investigated research and development organizations demonstrates obvious dependencies between applied appraisal tools, and the achieved level of knowledge management. As it is

shown in the Table 2, all research and development organizations, the appraisal sheets of which contained the aim of the appraisal, conclusions drawn from the appraisal, criteria, important from the point of view of knowledge management, a part of the appraisal accomplished by the superior and the appraisal (self-assessment), as well as the developed (specified) criteria of measurement, reached the highest level of knowledge management- “platform” system of knowledge management.

Other group of research and development organizations, the appraisal sheets of which measured a number of appraisal criteria, important from the point of view of knowledge management, contained conclusions drawn from the appraisal and a section intended for superiors and for employees, reached the third level of knowledge management- interactive system of knowledge management.

The appraisal sheets in the rest of the research and development organizations were the poorest from the structural point of view. They measured only a small group of appraisal criteria; the majority of these criteria were not specific and important for knowledge management, they were not précised, and the employee was not acquainted with the goal of the appraisal and its concussions. These appraisal sheets should be referred to the group of ”other” appraisal sheets, as they had no common features. Enterprises applying such appraisal tools reached only the lowest knowledge management level – the basic level.

It should be acknowledged that this analysis and the characteristics of interrelation between the personnel appraisal sheet applied in the research and development organization and the level of knowledge management achieved by the research and development organisation is a **main cognitive goal of the present research** and a **confirmation of the basic hypothesis**, that the knowledge management level achieved by the research and development organization **depends on the personnel appraisal tool applied in this organization**. It was proved that in the enterprises, where the personnel appraisal sheet was close to the ideal model and considered the features specific for knowledge management, the level of knowledge management was the highest (levels IV and III).

The analysis of the empirical material lead to the conclusion that there are criteria of the personnel appraisal which are applied everywhere and at all the enterprises (ex.: meritorious knowledge, qualification, efficiency), and some of the criteria are important from the perspective of knowledge management (ex.: the ability to identify problems, to define important facts and circumstances, to draw correct conclusions; the innovative contribution in the form of new ideas, innovative approach to professional duties, persistence in the implementation of tasks, willingness to accept new challenges, active participation in team

work, harmonious collaboration in the group, respect for the others, ability to formulate ideas precisely, effective communication with superiors and fellow-employees, ability to support oral communication, ability to carry out written communication, due care for customers), as they stimulate the development of certain knowledge management processes. There are also criteria which are applied very sporadically, however, their role in the development of certain knowledge management processes is very significant (ex.: psycho-physical condition). The results of this analysis enabled to identify the trend in the construction of personnel appraisal tools (which criteria are evaluated?) in research and development organizations- that is, to implement the second cognitive goal of the present research.

Conclusions

Personnel appraisal in the research & development organizations – the best solution for practice

Continuous advance towards welfare is a moving force of new technological, ideological and conceptual solutions. One of such conceptions is knowledge management. The opinion that economic growth depends on the effective generation, acquisition, dissemination and application of knowledge was supposed to become the most principle way to achieve a balanced social and economic development, securing the improvement of living conditions. It is true that the importance of human capital was taken into account both by the development plans of national economies and strategic plans of enterprises. Although the developers of these plans started to regard human capital as a source of advantage in the competition between both countries and enterprises, knowledge management (alongside with all its benefits) is still not a sufficiently acknowledged and recognized process. Such scepticism is somewhat above comprehension, because practice shows that knowledge management (as a chief competitive advantage) brings expected benefits. The achieved results are beneficial to customers, employees and the enterprise (See Table 4).

Table 4. The benefits of knowledge management from the perspective of customers, employees and enterprise

MAIN BENEFITS OF KNOWLEDGE MANAGEMENT		
Customers	Employees	Enterprise
<ul style="list-style-type: none"> • Increase of customers' satisfaction 	<ul style="list-style-type: none"> • Improvement of knowledge and skills of employees 	<ul style="list-style-type: none"> • Improvement of practices and processes

<ul style="list-style-type: none"> • Facilitation of sale processes • Better access to products • Improvement of relations with customers 	<ul style="list-style-type: none"> • Increase of employees' satisfaction • Increase of innovativeness 	<ul style="list-style-type: none"> • Increase of the enterprise's attractiveness at the labor market • Development of business activity • Innovativeness in the sphere of products / services • Increase of profitability • Adaptation of product offer to the requirements of concrete customer groups • Increase of efficiency and productivity of employees
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Source: author's own investigation

However, in spite of the voices contesting the adoption of knowledge management practices, this conception seems to be on of the most dynamically developing management conceptions.

The issue of knowledge management is not entirely recognized, however, it is obviously a complex process with multisided dependencies. In his previous works the author of the present research demonstrated significant interdependencies between knowledge management and human resources management. The most recent investigations, which were the base for the present research, demonstrate even more profound **dependencies**. The supposition that enterprises show a great interest in this new management conception is confirmed by reality. All investigated research and development organizations were engaged in knowledge management practices, and many of them achieved high levels of excellence—interactive systems and “platform” systems of knowledge management. Only two organizations reached just the first knowledge management level (basic). This situation is quite different from that in the previous investigations, according to which the majority of enterprises, seriously interested in knowledge management, achieved only the lowest knowledge management level (basic). However, one should be very cautious about making conclusions, as this change of situation does not have to imply a fast development of knowledge management, it may only be a result of deliberately selected investigation groups.

The investigations conducted by the author of the present research enabled to identify a close connection between the tool of periodic personnel appraisal applied by the enterprise and the achieved level of knowledge management at the enterprise. The results were

surprising, as numerous common features of the personnel appraisal tools applied for the employees of the enterprises from the same knowledge management levels were discovered. Thus, research and development organizations, which applied the appraisal tools with similar characteristic features, constructively were very close to the ideal model. These research and development organizations took into account appraisal criteria, specific to knowledge management, and occupied two highest knowledge management levels (interactive knowledge management system– level III and platform knowledge management system- level IV- the highest level). Organizations, which applied very scanty personnel appraisal tools with numerous structural drawbacks, achieved only the basic level of knowledge management.

It should be acknowledged, that the analysis of the relations between the personnel appraisal sheets applied in research and development organizations and the knowledge development level of this organizations demonstrates the achievement of the **main goal of the present research** and confirms its fundamental hypothesis, that the **knowledge development level achieved by the research and development organization depends on the personnel appraisal tool applied in this organization**. Certainly, it should be presupposed that there is a series of other factors / criteria affecting the knowledge development level of the organization, such as: management style of the enterprise, human resources management model, the type of organizational culture, etc. However, the applied appraisal tool, which reflects personnel policy and takes into account the above-named criteria, is a significant element in the development of knowledge management practices and the improvement of their level.

Besides, the results of the analysis enabled to identify **the trend in constructing the personnel appraisal tools** (which criteria are appraised?), apparent in knowledge management enterprises. The identification of this trend demonstrates the **accomplishment of the second goal of the present research**. Moreover, the analysis of the empirical material demonstrated that there are wide-spread personnel appraisal criteria apparent in all enterprises (ex.: important knowledge, qualifications, effectiveness), and some of them are important from the point of view of knowledge management (ex.: the ability to identify problems, the selection of essential facts and circumstances, the ability to draw proper conclusions, the innovative approach in the form of new ideas, the appropriate approach to implemented duties, consistency in the implementation of tasks, acceptance of new challenges, active participation in team work, harmonious collaboration within the group, respect for the others, the ability to formulate the idea precisely, effective communication with superiors and fellow-

employees, good oral communication skills, good written communication skills, care for customers, etc.), as these criteria stimulate the development of certain knowledge management processes. There are criteria which are applied very sporadically, however, their importance in the development of certain knowledge management practices is considerable (ex.: psychophysical condition)

The practical goal of the present investigation was to define recommendations concerning the projecting of the tools of the periodic personnel appraisal in knowledge-based enterprises. The results of the present research enabled **to define the main characteristic features of the personnel appraisal tools, necessary for the achievement of good results in the implementation of knowledge management processes.** These features are namely the following: clearly defined and precise appraisal goal, intelligibly explained to the appraising and appraised individuals; summing-up of the accomplished appraisal and appraisal conclusions (familiar to the appraised employee), consideration of the criteria important from the point of view of knowledge management. These criteria are as follows: professional preparation to the implementation of professional tasks, problem solution skills, initiative, engagement, the aptitude to the team work, communicativeness, customer-oriented approach, etc. Besides, it is important to avoid presenting these criteria as slogans or generalized appeals; they should be properly specified / defined, and the whole appraisal should be (at least) carried out both by the superior employee and the appraised employee (self-assessment). One should acknowledge that these conclusions are not up-to-date, as literature in the sphere of human resources management described model tools many years before and emphasized a series of essential, fundamental features, effective tools of periodic personnel appraisal. Nevertheless, these results may be regarded as a verification and confirmation of theoretical assumptions. Moreover, in literary sources so far nothing has been mentioned about the importance of the exemplary implemented personnel appraisal process (or a personnel appraisal tool with the exemplary structure) for the purpose of the development of human resources management practices, so important in the creation of the stable competitive advantage.

Taking into account that the majority of research and development organizations achieved two highest levels of knowledge management (although it is difficult to generalize due to a small investigation group) and that the activities facilitating the development of knowledge management processes (periodic personnel appraisals) are characterized by relative easiness, one can expect a major increase in the effectiveness of functioning of research and development organizations. The results of the investigation demonstrate a

positive picture of conditions and perspectives of functioning of these organizations. Only research and development organizations which achieved high levels of knowledge development, may be efficient and worth financing from state budget (certainly, only during the transition period, as the efficient enterprise should be all-sufficient: the sale of new solutions on the form of patents, the sale of new technologies, etc., requiring no additional external financing) and able to compete at world research and development market. Only such organizations can contribute to the development of country's economy and to the improvement of living standards of its inhabitants. The results of the present research are supposed to become the inspiration for many enterprises at the contemporary market- not only those which have knowledge creation as their goal (research and development organizations), but for all enterprises, which intend to survive at a strongly competitive and challenging market of the 21st century. So far the alternative to knowledge management was not found; therefore enterprises should direct their whole effort to the development of knowledge management practices. As practice shows, one of the ways to achieve excellent results in this sphere is the efficient implementation of the periodic personnel appraisal processes. Such activities are fundamental for the development of employees and of the whole enterprise. Besides, these activities are directed at the achievement of better results in knowledge management. That is why the results of the present research should be widely disseminated and applied in practice.

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