

# **APPROACH TO THE MANAGEMENT OF IMPLICIT KNOWLEDGE IN A HIGH-TECH ENTERPRISE: REQUIREMENTS FOR PROFESSIONAL COMPETENCES (BASED ON CASE STUDY)**

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## **ABSTRACT**

*The study has three research objectives: 1) Definition of the role of implicit knowledge in the knowledge system of a high-tech enterprise. 2) Determination of methods of protection of implicit knowledge in a high-tech enterprise. 3) Formation of requirements to professional competencies of the head of high-tech enterprises in the field of implicit knowledge management. The analysis of theoretical sources is carried out in five significant areas of research: the result is a characteristic of explicit and implicit knowledge with their differentiation on eight grounds. The case study was conducted at a Russian high-tech enterprise with the development of tools for managing implicit knowledge. The result is the formation of requirements for professional competence of the head of a high-tech enterprise in the field of management of implicit knowledge as a part of the concept of leadership.*

**Keywords:** Implicit Knowledge, Innovation Organization, Protection Methods, Professional Competence of the Head.

## **INTRODUCTION**

The subsystem of implicit knowledge management is a significant but little-studied topic in the knowledge economy. Implicit knowledge, dominating in qualitative terms over explicit knowledge, does not have specific methods of protection, business leaders do not have the skills to fully diagnose, protect, manage the implicit knowledge in the knowledge system of a high-tech enterprise as a whole (Davenport et al., 2002).

The knowledge management in an innovative enterprise involves understanding the essence of the knowledge system as a set of implicit and explicit knowledge. Implicit knowledge includes technical skills, values, mental models, experience, mastery, intuition (Lesser, 2000). The structure of explicit knowledge includes: objects of industrial property confidential documented information, objects of copyright. Innovation is considered to be an enterprise that has implemented (completed) innovation in the last three years (Indikatory, 2016). An innovative organization, possessing knowledge management, must have methods of its management, which (in this study) means the diagnosis of knowledge, differentiation of explicit, implicit knowledge,

the definition of localization of knowledge in the organization, its carriers (Mortensen & Bloch, 2005). The issues of knowledge management require of studying from the positions of professional competences of innovative organizations, whose integral part are the issues of knowledge management.

The management of implicit knowledge as part of the knowledge of an innovative organization is characterized in the theoretical economic literature as follows:

1. Lack of research in the field of analysis of localization of implicit knowledge of the organization.
2. Lack of practice-oriented work, contributing to the diagnosis of the state of affairs in the field of management of implicit knowledge in the organization.
3. Lack of research in the field of knowledge management at specific enterprises (in particular, Russian, high-tech).
4. Lack of works investigating the issues of professional competence of managers in the field of knowledge management.

Gaps in previous studies led to the object, the subject of research, research tasks.

The object of the study is the system of knowledge in a high-tech enterprise. The subject of the research is the subsystem of implicit knowledge management.

The research objectives of this study are as follows:

1. Definition of the role of implicit knowledge in the knowledge system of a high-tech enterprise.
2. Determination of methods of protection of implicit knowledge in a high-tech enterprise.
3. Formation of requirements to professional competencies of the head of a high-tech enterprise in the field of implicit knowledge management.

## LITERATURE REVIEW

### The Theoretical Development

The study of implicit knowledge management in the innovation organization carried out in the following areas: (1) in the field of organizations as systems with the differentiation of management in the technical, biological, socio-economic systems; (2) in the field of human resource management as a source of knowledge of organization; (3) in the field of knowledge management system in the organization generated by the dominant in the organization of the leadership concept; (4) in the field of hierarchy of managerial values in the business models.

In the field of organizations as systems with the differentiation of management in the technical, biological, socio-economic systems the objects of this study are the works by Adizes & Goulman etc. (Adizes, 2008; Adizes, 2013; Goulman et al., 2015). Adizes noted that the management of implicit knowledge differs from the management of explicit knowledge in the socio-economic system. In addition, it is on the basis of “*knowledge management*” the socio-economic system differs from the technical one (Adizes, 2008; Goulman et al., 2015). In the study Goulman et al., 2015 highlighted the role of emotional intelligence. Emotional intelligence, according to the authors, is part of the implicit knowledge that requires its management (Goulman et al., 2015).

Experience in the management of implicit knowledge, which led the company to growth on a global scale, is the object of research Nanaka (Nanaka, 2007). This study develops, according to the authors, the practice of the study the issue of management of implicit knowledge on the example of a specific Russian enterprise. Accounting the distinguishing characteristics of management systems (in the biological, spiritual organizations (systems)-«the life expectancy»,

«the manageability»-in the management of technical systems) in the management of socio-economic system is reflected in the development in the last decade of the “*ecosystem*” that is self-adapting to the conditions of the external environment, ensuring the functioning of the enterprise for a long time. According to the critical comments of the author’s insufficient attention to the management of the organization as a system devoted to the management of tacit knowledge, including methods of its generation, accumulation, protection.

In the field of human resource management as a source of knowledge of organization the authors based on the works by Goulman et al. (2015); Senge (1999); Chesbrough (2006), where organizations are seen as a living system. Unlike biological systems, the socio-economic system deals with the issues of production, knowledge management, which is understood as the management of human potential. The system (organization, company) generates its own unique management system based on tacit knowledge (i.e. experience, skills, abilities, mental models, whose carrier is an individual-an employee of the organization). The uniqueness of the management system in socio-economic society based on scale effects of the use of tacit knowledge due to basic patterns of behavior and activities of people in organizations, i.e. organizational behavior. According to authors critical comments of the authors in the management of human resources in the Russian practice devoted to the issues of inclusion of the individual (employee’s) vehicle of the implicit knowledge in production activities of the organization, institutionalized understanding of this process.

In the knowledge management system in the organization generated by the dominant in the organization of the concept of leadership the authors analyzed the works by Davenport & Prusak (Davenport & Prusak, 1998), Davenport, Gilbert, Heinrich (Davenport et al., 2002), Carayannis & Papadopoulos (Carayannis & Papadopoulos, 2011), Dierendonck (Dierendonck, 2011). The paper by Carayannis notes the local influence of innovation on the solution of special issues (Carayannis & Papadopoulos, 2011). According to Dierendonck in the successful organization the staffs are the followers of the leader (Dierendonck, 2011). At the same time the head himself must have a certain set of qualities of the “*servant*” leader. The presence of these qualities in the manager-leader provides the obtaining of implicit knowledge from employees, as the basis of trust between the manager-leader and employees. This study, in the authors’ opinion, develops the idea of professional competence of the head of the organization.

The achievement of this studies as the authors’ conclusions regarding to the subject of this study are as follows: the essence of the (national) knowledge management models of the leaders in the technological ways is to develop of methodological tools for the extraction of explicit, tacit knowledge in the organization as a system on macro, meso, micro-levels. In the work of Dammann (Dammann, 2011). TOLS-concept (Transaktives Organisationales Lernen) is studied. This concept includes: localization of knowledge, transfer, generation of knowledge, accumulation of knowledge, transformation of knowledge in the organization (Dammann, 2011). In the authors’ opinion, this work develops the position of the TOLS-concept of knowledge localization, knowledge extraction from its carriers. The authors of this study believe that in the field of theories, concepts of leadership are the lack of use of irrational components (implicit knowledge) in the model of knowledge management in organizations during the formation of the knowledge economy.

In the field of hierarchy of managerial values in the business models of the United States, Germany, Japan, Russia the authors analyzed the works by Dierendonck (Dierendonck, 2011), Verdorfer & Peus (Verdorfer & Peus, 2014), Milner (Milner, 2009). The authors mentioned in these papers investigate the problems of knowledge management on the basis of examples of

companies on a global scale (Verdorfer & Peus, 2014). According to the authors, the Russian experience of knowledge management is not enough researched and presented in the publications (Milner, 2009).

The management system of the countries-leaders of technological orders (USA, Japan, Germany), based on the appropriate intellectual tradition as the foundation of management philosophy, business values, business management models reflect the search for these systems on the parameters “*manageability*”, “*lifetime of the company*” through the development of methodological tools for managing of explicit and implicit knowledge. According to authors critical comments of the authors’ insufficient formedness of the hierarchy of managerial values in the business models of Russia, based on appropriate intellectual tradition as the basis of philosophy of management.

### **The Theoretical Result**

Based on the analysis of theoretical works by Harlow (Harlow, 2008), Ryan & O'Connor (Ryan & O'Connor, 2013), Senge (Senge, 1997) the authors formed 8 features that differentiate implicit and explicit knowledge: 1) Structural balance in the organization, 2) Identification in the organization (object database), 3) Levels (area) of knowledge creation, 4) Intra-corporate knowledge transfer: method, costs, 5) Protection of knowledge, 6) Characteristics of the company-creator of knowledge, 7) Impact on the competitiveness of the enterprise, 8) Conditions of knowledge extract.

According to these eight features, the authors distinguish 8 characteristics of explicit knowledge: 1) is much inferior in the volume of implicit knowledge; 2) intellectual property: industrial property, utility model, copyright, confidential documented information; 3) functional management (manufacturing, Finance, marketing, logistics, etc.); 4) contactless by method and with minimal costs for intra-corporate transfer; 5) The Civil Code. Part 4 No. 230-FZ; Federal Law “*On information, information technologies and protection of information*”<sup>1</sup>; 6) interest in (high) financial performance, a significant need for technical regulations, manuals, internal orders; 7) direct, in the form of rationalization of the production; 8) IT-products for the management of explicit knowledge; regulation, standardization works (Civil code of the Russian Federation, 2006).

According to 8 features, the authors distinguish the following characteristics of implicit knowledge: 1) greatly exceeds the amount of explicit knowledge; 2) technical skills; values, mental models; experience, skill, intuition; 3) individual (employee), group (organizational behavior); 4) personal contact; 5) the lack of a comprehensive legal, internal protection; 6) innovative and a significant need in the solution of system-wide strategic objectives; 7) indirect, in the format of the quality of achievement of the goals of risky projects; 8) the presence of irrational components in the model of knowledge management in organizations: religious, philosophical/non-religious position, that institutionalization the provisions of the authoritarian leadership theories of the knowledge economy in the areas of: interact “*leader-followers*”, digital foundations of leadership, social orientation of the organization<sup>2</sup>.

The authors of this study proposed the eighth point of differentiation of knowledge- “*Conditions of knowledge extraction*” which allows the manager to organize the process of extracting knowledge from its carrier and its further use in the organization.

## MATERIALS AND METHODS

The research methods are: abstract-logical, monographic, calculation-constructive methods.

In particular, the method of analysis and synthesis as an example of abstract-logical method, based on the analysis of theoretical literature, allows decomposing the general idea of the knowledge system in the organization into components:

1. In the theoretical aspect: types of knowledge, differentiation of types of knowledge.
2. In the practical aspects: the carriers of knowledge (levels of management), the relationship between tacit knowledge and confidential documented information.

The monographic method as a method of studying an individual case on the basis of a comprehensive analysis of a single object, considered as typical for this class of phenomena, is used in the study in the formation of professional competencies of the head of knowledge on the example of a leading Russian high-tech enterprise.

The calculation-constructive method applied to the present study includes the following stages:

1. The research and accumulation of the theoretical information on the topic of research for the period 2015-2018. For the comparative analysis of theoretical literature on the key words the authors used the following databases for the period 2015-2018: scientific electronic library; electronic library systems; reference and library materials of Westphalian University (Muenster, Germany); information materials presented during the scientific exchange with the Technical University of Chemnitz, Germany (Table 1). Interim results of the study, which directly or indirectly affect the topic of this study, were presented at international conferences and forums (Paper Development Workshop, 2016; EGOS, 2017 etc.) (Table 1).

Scientific event/place of realization	Authors' work discussed at the scientific event	Author's note: The areas of research of the authors are the following
Leadership and governance OF and IN public and private organizations in CEE countries/the Technical University of Chemnitz, Germany, 09.2015.	Gumerova G., Shaimieva E. <i>“Methodological provision of high-tech business management with the information portal of the enterprise: recommendations for the development of knowledge management, intellectual property management, and production relations”</i> // Chemnitz University of technology. Faculty of Economics and Business Administration Chair for Organization Studies, 12 <sup>th</sup> Chemnitz East forum, 115-124, 2015	The areas of research of the authors are the following: 1. Methodological provision of high-tech business management with the information portal of the enterprise; 2. Application of authors' developments for an official website of JSC <sup>3</sup> <i>“Plant Elecon”</i> (Kazan, Republic of Tatarstan) as a diversified structure; 3. Development of recommendations in the areas of knowledge management, intellectual property, production relations.
Paper Development Workshop <i>“Challenges in Managing and Organizing Prozesses of Change”</i> /Mykolas Romeris Ubersity, Vilnius, Lithuania/European Group for Organizational Studies, 27-28.10.2016.	Gumerova G., Shaimieva E <i>“Implicit knowledge management in the innovative organizations: economic essence, protection methods”</i> .	<ol style="list-style-type: none"> <li>1. The field of organizations as systems with the differentiation of management in the technical, biological, socio-economic systems.</li> <li>2. The field of human resource management as a source of knowledge of organization.</li> <li>3. The field of knowledge</li> </ol>

		<p>management system in the organization generated by the dominant in the organization of the leadership concept.</p> <p>4. The field of hierarchy of managerial values in the business models of the United States, Germany, Japan, Russia.</p> <p>5. The field of the formation of knowledge markets.</p>
3 <sup>rd</sup> Paper Development Workshop “ <i>Managing and organizing in challenging times</i> ” 3-4.11.2017.	Gumerova G., Shaimieva E “ <i>Concept of “Servant Leadership” for implicit knowledge management: analysis and synthesis</i> ”.	<p>1. The survey “<i>A study of the construction of the leadership concept for business, state, municipal enterprises in low,- middle,- high-tech types of economic activities (on example of the concept of “servant leadership”)</i>”.</p> <p>2. Analysis of the application of the concept of “<i>servant leadership</i>” at the enterprises of the countries of Central and Eastern Europe (sector-education).</p> <p>3. Analysis of the development of other concepts of leadership in the enterprises of the countries of Central and Eastern Europe (sector-education).</p> <p>4. Development of methodology for the construction of the concept of leadership, based on ethical principles, for Russian enterprises.</p>
Westphalian University/ Grant of German academic exchange service (DAAD), 2018, 2 Month.	Gumerova G., Shaimieva E. Research project: “ <i>High-tech business Management</i> »”.	Research of information on the topic of knowledge management from the position of the German school of Economics.

: Participation in the scientific event without publication.

Source: Developed by authors.

The research of data for case study (or practical part of the study) was carried out in the form of survey data of middle managers, senior managers of JSC “*Tatelektromontazh*” (Russia, Kazan, which was by the students of MBA 206-2017, where the authors of the present study were the managers of the module “*Management of knowledge in enterprises of high-tech business*”). The survey was carried out according to the Table 2. The survey participants-representatives of the company-belonged to different levels of management; the data obtained from the respondents were further encoded and processed by the authors of this study. The results of the survey were processed by the authors of this study, formed in Table 2.

The importance of the case study on the example of a specific Russian enterprise is due to the following reasons:

1. According to Dammann O., the case study (Fallstudie-in German) reveals its suitability due to the need to reduce to individual indicators for extensive, in-depth analysis of scientific phenomena. Case studies allow to form significant factors and regularities (Dammann, 2011).

2. In the book by Osono, Je. the experience of Toyota management knowledge, which led within a decade to the formation of the concept of “*Toyotism*” (Osono, 2011). The study of the Russian practice of knowledge management, including its localization, extraction, protection is of little-researched nature for the world scientific community.

The rationale for the selection of the enterprise JSC “*Tatelektromontazh*” (at the time of research) to conduct the case study is the following:

1. The choice of case study (enterprise) is carried out in qualitative research, as a rule, depending on the theory (Dammann, 2011; Mayring, 2002).
2. The company has 59 years of history development in a planned economy, market economy, knowledge economy, based on knowledge management from an economic point of view as the best in the national scale in the manufacture of electrical works-the capitalization of the explicit knowledge objects (brand, patents, etc.), tacit knowledge (technical skills, corporate culture, etc.) (According to European standard ranking, Federal state statistics service of JSC “*Tatelektromontazh*” took the 1<sup>st</sup> place in the “*League of the best*”).
3. Management of implicit knowledge in the structure of knowledge in the JSC “*Tatelektromontazh*” revealed the following features.
4. The employees-students of MBA on the basis of “*Kazan Innovative University named after V.G.Timiryasov (IEML)*”, Kazan in the period 2015-2016 have a high level of involvement in the production process on the basis of organizational behavior (team work), high corporate culture, values/mental models used in the enterprise.
5. The knowledge system diagnosis at the enterprise has revealed the need to develop the protection of tacit knowledge as the part of organizational knowledge (Official web site of JSC “*Tatelektromontazh*”, 2019).

Therefore, the use of calculation-constructive method in this study allows to analyze the state of confidential documented information in the full sense of the word at JSC “*Tatelektromontazh*”: placement of functional departments, the nature of knowledge, the definition of the knowledge carrier depending on the level of management in the organization, the definition of the share of information ownership, the definition of the nature of the regulatory document. This analysis, taking into account the limitations of its implementation, allowed the authors to form recommendations on the professional competencies of managers in the field of knowledge management.

## RESULTS AND DISCUSSION

### Practical Research of the Results

The dominant role of implicit knowledge in the structural ratio of knowledge export/import in types of knowledge, types of foreign economic activities reflected in the amount of knowledge which has a Russian innovative company for the period 2000-2014. Structural correlation of implicit/explicit knowledge on the Russian innovative company for the analyzed period is estimated to be 5/1 or 79.3/15 thousand US-\$ (in 2000) and 850/186, 4 thousand US-\$ (2014) (Indikatory, 2016).

The increase in the digital value of the volume of implicit, explicit knowledge did not affect their structural relations in part of knowledge of innovative Russian companies. Presumably, this indicates the following in the knowledge management at meso, micro-levels: the absence (or lack) of development of a hierarchy of managerial values in the Russian business models based on appropriate intellectual tradition as the basis of philosophy of management; the absence (or lack of) of competitiveness of explicit knowledge of the Russian innovative

companies at the global, Russian market of knowledge; the absence (or lack of) of development of the methodological framework in the enterprise for extraction of implicit, explicit knowledge.

### Empirical Part (Case Study)

A fivefold excess of the volume of implicit knowledge over explicit as the knowledge part of innovation organization-the copyright holder<sup>4</sup>, lack of a comprehensive legal, internal protection justifies the creation of the following management tasks on the basis of a case study on the example of JSC<sup>5</sup> “*Tatelektromontazh*”, Kazan (Table 2): the differentiation of implicit knowledge from documented confidential information; the development of methods of protection of tacit knowledge.

It is necessary to note the insufficient representatives conducted a case study on the example of JSC “*Tatelektromontazh*” for the following reasons:

1. The features of management in protecting of the enterprise local network.
2. The features in the differentiation of confidential documentary information in the full sense of the word, and tacit knowledge specific to the enterprise.

In order to develop the methods of protecting of tacit knowledge in the study two groups of confidential documentary information:

1. Documented information, or confidential documentary information in the full sense of the word.
2. Confidential information where the documentation is partial (Teece, 1981) (Table 2).

At the time of the study revealed the lack of implicit knowledge in the group of confidential information where the documentation is partial.

The holders of confidential documented information in the full sense of the word, which is composed of explicit and tacit knowledge, is the management of the higher, middle, lower-level of “*Tatelektromontazh*”.

Table 2 CONFIDENTIAL DOCUMENTED INFORMATION, IN THE FULL SENSE OF THE WORD: PLACING IN THE FUNCTIONAL DEPARTMENTS, THE NATURE OF KNOWLEDGE IN THE ISC “TATELEKTROMONTAZH”							
No.	Name of the object	The time of limitations information	Knowledge	Data carrier (management level)	The share ownership information in %*	Regulatory document	Privacy policy
<b>Production</b>							
1	Access to information on the conducted tenders and concluded contracts**	constantly	implicit	The head (highest)	60	Order	High
				head of production and technical Department (middle)	30		
				chief accountant (higher)	10		
2	Protection of a local network of the enterprise	constantly	implicit	IT staff*** (lower)	100	contract	High

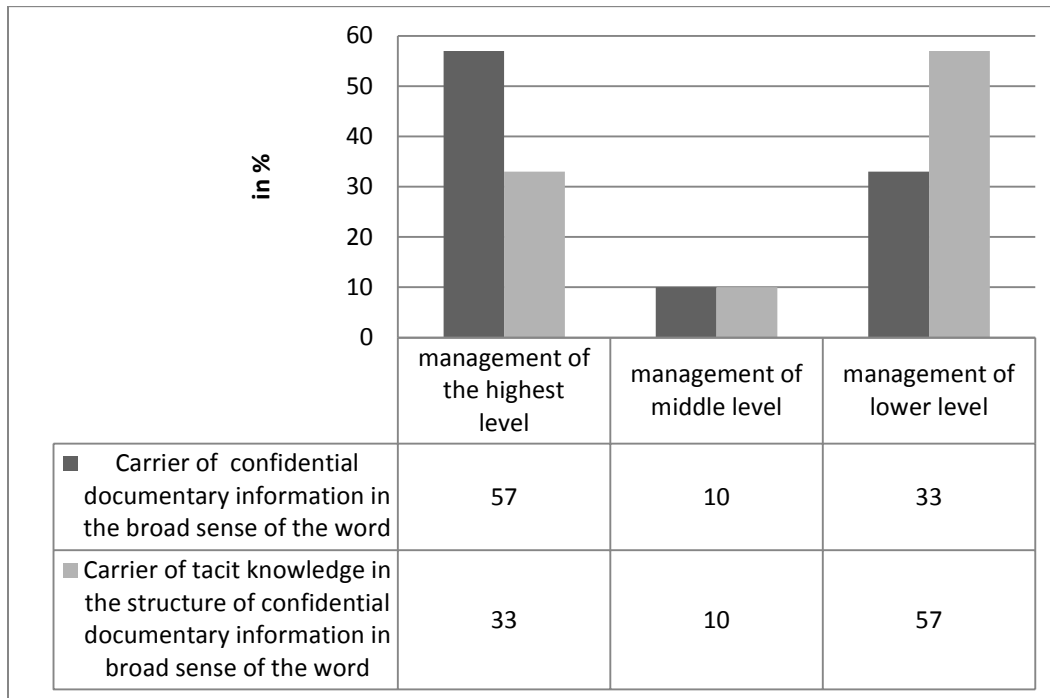


<b>Finance</b>							
3	Confidential information on wages	constantly	explicit	The head (highest)	40	Order, official instructions (job description)	High
				Chief accountant (higher)	30		
				economist salary payroll officer (lower)	30		
4	Information about operations and accounts of the organisation	constantly	explicit	The head (highest)	50	Official instructions (job description)	High
				Chief accountant (higher)	50		
<b>Staff</b>							
5	Information about staffing in the enterprise	1 year	explicit	The head (highest)	50	Official instructions (job description)	High
				inspector of the personnel Department (medium)	20		
				head of production and technical Department (middle)	10		
				chief accountant (higher)	20		
6	Protection of personal data	constantly	Implicit****	The head (highest)	30	Order	High
				inspector of the personnel Department (low)	70		

Note: \*Share ownership information is calculated for each corresponding object of documented information documented or confidential information in the full sense of the word in the functional areas: “*Production*”, “*Finance*”, “*Staff*”; \*\*We are talking about materials, preparatory to the trades, contracts. The situation is comparable with the author's technique of market analysis of explicit and tacit knowledge at the micro-level based on the data of Rosstat, where the indices of the possessions of explicit knowledge are: patents, rights to licenses for use of inventions, industrial samples, and useful models. The indices of the possessions of the implicit knowledge are: research and development of new products, new production processes; production planning, design; education and training related to innovation; marketing research; \*\*\*In the case of the company we are talking about hired staff; \*\*\*\*Protection of personal data based on: Article 7. The confidentiality of personal data; Article 10. Special categories of personal data. However, their combination, the necessity of individual approach to employees from the head-holder of the information build the character of tacit knowledge as the main form of knowledge the object (15). Source: compiled by the authors on the basis of (Tuzovskij et al., 2005).

The analysis of the correlation of the confidential documentary information in the full sense of the word and implicit knowledge management on the three levels at JSC “*Tatelektromontazh*” at the time of the study revealed the following: the holders of the confidential documentary information in the full sense of the word and implicit knowledge is the

management of the higher and lower levels; the ratio of the possession of the confidential documentary information in the full sense of the word and implicit knowledge management of higher and lower levels are inversely proportional: the greater the amount of confidential documentary information in the full sense of the word the company leader has, the less tacit knowledge as part of this confidential documentary information is preserved. In contrast, the implicit knowledge in a larger volume is present at the lower management level; the middle management of the enterprises, performing a tactical management task, is not a holder of a significant amount of the confidential documentary information in the full sense of the word, and tacit knowledge (Figure 1).



Source: Compiled by the authors.

**FIGURE 1**  
**CARRIERS OF IMPLICIT KNOWLEDGE IN THE STRUCTURE OF THE CONFIDENTIAL DOCUMENTED INFORMATION (IN THE FULL SENSE OF THE WORD) IN JSC “TATELEKTROMONTAZH”, KAZAN, RUSSIA, IN %<sup>6</sup>**

The methods of protecting of tacit knowledge in the structure of confidential documentary information in every sense of the word in the process of knowledge management in JSC “Tatelektromontazh” as a result of the case study are formulated as the following: 1) The development of mentoring for young employees from employees with experience. 2) The development of “self-learning” groups, where employees, improving skills in foreign educational institutions, offer new theoretical and practical knowledge for General consumption in the organization. 3) The development of platforms, “ecosystems”, when employees are able to deal effectively with emerging problems independently. 4) Setting for the staff the new problems of theoretical, practical plans, thereby providing support in the form of business (training) games the readiness of enterprises to solve problems in practice, arising suddenly and requiring a high level of professionalism. 5) Increasing the level of game sale work to identify a growing volume

of implicit knowledge in solving management problems in conditions of high innovation and investment risks and great uncertainty of the future cash flow (for the management of a highest level); routine tactical work with orientation staff on innovation in the field of decision-making and achievement of production processes (for management of middle, low-levels).

In the result of the study we can draw the following main provisions to the requirements for professional competences in the implicit knowledge management (Table 3).

<b>Table 3</b>		
<b>THE MAIN PROVISIONS OF THE CONCEPT OF LEADERSHIP IN THE KNOWLEDGE ECONOMY: THE REQUIREMENTS FOR PROFESSIONAL COMPETENCES IN THE IMPLICIT KNOWLEDGE MANAGEMENT</b>		
<b>An integral part</b>	<b>Level</b>	<b>Requirements to leadership concepts</b>
<b>I. Requirements in the framework of the knowledge management model in the organization</b>		
1.The philosophy of the founders of the company	Head	Is based on religious (religion related basic areas of functioning of the enterprise); the philosophical/non-religious (moral, ethical) teachings.
	Organization	The institutionalization provisions implementing real and virtual spaces: the philosophy of the company; moral values; organizational culture.
2. Model of labor relations	Head	The uniqueness in the following provisions of the leadership theories: - Interact “ <i>leader-followers</i> ”. - The digital base of leadership.
	Organization	Social orientation of the organization.
3.Total factor productivity	Head/Organization	National differences in management of organizations at the meso, micro-levels.
	Head	Dominance elements in the implicit knowledge management (in part of irrational) over explicit (in part of rational part), the virtual over the real space.
<b>II. Requirements to the professional competences in the management of implicit knowledge</b>		
4. Features	Head	The empowerment of employees, humility, authenticity, interpersonal acceptance, providing direction for the development, servant leadership.
5. Professional competence	Head	The possession of methodological tools of management model knowledge to extract of tacit knowledge in the organization.

Source: Compiled by the authors.

## DISCUSSION

The results of this study compensate for the lack of practice-oriented work in the field of knowledge management in Russian high-tech enterprises.

In particular, (Milner, 2009) provides information on the responsibility of senior and middle managers of Russian enterprises for solving issues related to information technology, presents requirements for managers and leaders in the field of knowledge management. In contrast to the work (Milner, 2009), this study focuses on senior and middle managers of high-tech enterprises, presents localization by type of knowledge (explicit, implicit) among senior and middle managers. In the present study it is shown that the owner of implicit knowledge to a greater extent are the leaders of the lower level of high-tech Russian enterprises. This conclusion, obtained as a result of the study, confirms the conclusion in the work of Osono about long-term relationships with employees, which leads to the formation of trust in the organization (Osono, 2011). According to Osono internal knowledge, in terms of trust between the leadership of the

high, middle, low-level, is converted into common property (Dao Toyota, 2011). Thus, implicit knowledge in the internal knowledge of the organization is localized at the level of management of the lowest level (Bagautdinova et al., 2016). In the context of long-term relationships between managers of different levels, implicit knowledge in the internal knowledge of the organization forms the basis of the common heritage of the company. Thus, the present study experimentally confirmed the successful long-term experience of JSC “*Tatelektromontazh*” in the management of implicit knowledge in the structure of knowledge in general.

## CONCLUSION

At the end of the study, the following conclusions can be made:

1. Implicit and explicit knowledge in the system of knowledge management in the organization have different characteristics: differentiation of types of knowledge is formed by eight criteria. Hence their role in the development of the enterprise is different. To the existing differentiation of explicit and implicit knowledge, the authors developed the eighth classifying feature (Conditions of knowledge extraction), which allows the manager to organize the process of extracting knowledge from its carrier and its further use in the organization.
2. The carrier of implicit knowledge in an enterprise that has the best capitalization of knowledge in the Russian practice is the management of the lowest management level to a greater extent than the management of the highest level.
3. The requirements to professional competences of the head of the hi-tech enterprise in the field of management of implicit knowledge as a part of the concept of leadership are formed.
4. The paper proposes the methods of protection of implicit knowledge for managers of three levels of management, with the allocation of implicit knowledge from the confidential documented information and confidential documented information separately. This development of methods of protection of implicit knowledge is the author's, formed on the basis of the case study conducted in the present case study on the example of a specific high-tech Russian enterprise.

## LIMITATIONS OF THE STUDY RESULTS

However, it should be noted the uniqueness of the conducted case study on the example of JSC “*Tatelektromontazh*” at the time of the study for the following reasons:

1. The analysis method of finding implicit knowledge in the composition of the confidential documentary information in the full sense of the word is the author's.
2. JSC “*Tatelektromontazh*” has a unique, proven for sixty years of the practice of functioning of the Russian foreign markets methods of control implicit knowledge as part of knowledge in General, poorly understood and underrepresented in the Russian economic literature in the field of management.
3. Using the case study method on the example of a local Russian enterprise.

## ENDNOTES

1. Here it should be noted that this protection of knowledge (explicit and implicit) is formed on the basis of Russian practice.
2. According to the authors, the theory of leadership is an integral part of the knowledge management model used in a particular organization.
3. JSC (joint stock company) is the form of organization of a public company; joint stock company whose shareholders have the right to dispose of their shares. The organization and activities of open joint stock companies are regulated by the Federal law of the Russian Federation. Open joint-stock company is

obliged to annually publish for General information the annual report, balance sheet, profit and loss. This provision is intended to increase the publicity and transparency of investment processes.

4. The protecting of implicit knowledge at the level of the individual employee the authors do not consider in the present study.
5. JSC-Joint-Stock Company.
6. Calculation of knowledge volume for each level of management is made as follows: the sum of percentage ownership information is divided into the corresponding number of objects (for CDI in the full sense of the word-6 units for tacit knowledge-3 units).

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