

## СОЦИОЛОГИЯ ТРУДА

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DOI: 10.14515/monitoring.2017.6.09

**Правильная ссылка на статью:**

Kasabutckaia M. S. Development of intellectual capital: social practices of information technology companies // Мониторинг общественного мнения: Экономические и социальные перемены. 2017. № 6. С. 199—215. DOI: 10.14515/monitoring.2017.6.09.

**For citation:**

Kasabutckaia M. S. Development of intellectual capital: social practices of information technology companies. *Monitoring of Public Opinion: Economic and Social Changes*. 2017. № 6. P. 199—215. DOI: 10.14515/monitoring.2017.6.09.

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### **DEVELOPMENT OF INTELLECTUAL CAPITAL: SOCIAL PRACTICES OF INFORMATION TECHNOLOGY COMPANIES**

DEVELOPMENT OF INTELLECTUAL CAPITAL: SOCIAL PRACTICES OF INFORMATION TECHNOLOGY COMPANIES

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DEVELOPMENT OF INTELLECTUAL CAPITAL: SOCIAL PRACTICES OF INFORMATION TECHNOLOGY COMPANIES

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**Аннотация.** Рассматриваются изменения в процессе производства, способствующие распространению и развитию интеллектуального капитала. Основное внимание в работе уделяется структуре интеллектуального капитала организаций: человеческому, организационному и коммуникационному капиталам. Выявляются социальные практики в компаниях, способствующие развитию интеллектуального капитала и позволяющие организации занять высокое положение во внешней среде — на рынке.

**Abstract.** The paper examines changes in the production process contributing to the ever increasing spread and development of intellectual capital. The study focuses on the structure of intellectual capital of organisations: human, organisational, communication capital. The author identifies social practices in companies facilitating the development of intellectual capital and helping organizations to occupy high positions in the external environment — in the market.

Несмотря на наличие различных определений интеллектуального капитала в научной литературе, далеко не во всех компаниях знают о нем и о социальных практиках его развития, что представляется существенной проблемой и рассматривается в рамках данного исследования. В статье описываются социально-трудовые отношения в компаниях быстро развивающейся индустрии информационных технологий (ИТ), где преобладают молодые специалисты и применяется модель интеллектуального капитала. Предметом исследования выступают социальные практики, используемые в ИТ-компаниях для развития интеллектуального капитала. Исследование основано на качественной методологии — интервью с экспертами относительно передовых практик развития интеллектуального капитала в организациях. В статье представлены результаты первого этапа исследования, направленные на освещение конкретных примеров и способов развития интеллектуального капитала в организациях.

**Ключевые слова:** интеллектуальный капитал, человеческий капитал, организационный капитал, коммуникационный капитал, социальная среда, социальное здоровье, социальные и трудовые отношения

**Благодарность.** Автор выражает благодарность за уделенное время и представленные мнения своему научному руководителю Петрову Александру Викторовичу (доктору социологических наук Санкт-Петербургского государственного университета) и экспертам — участникам исследования.

Amidst various definitions of intellectual capital proposed by researchers, few companies are aware of this notion. Lack of knowledge and a rough idea about social practices of the intellectual capital development are problems raised in the article. The study provides a description of social and labour relations of companies operating in the rapidly growing IT industry where most of specialists are young and the intellectual capital model is predominant. The subject of the study is social practices of IT companies used for the intellectual capital development. The project is based on a qualitative method — expert interviews on the best practices in the development of intellectual capital in organizations. The paper presents the outcomes of the first stage of the study aimed to provide detailed examples and ways to develop intellectual capital in organisations.

**Keywords:** intellectual capital, human capital, organisational capital, communication capital, social environment, social health, social and labour relations

**Acknowledgment.** The author warmly thanks the scientific supervisor Alexander V. Petrov (Doctor of Sociology, Saint Petersburg State University) and experts who took part in the survey for the time they devoted and the opinions expressed.

## Introduction

The end of the 20<sup>th</sup> — beginning of the 21<sup>st</sup> century is connected with changes in the social and economic spheres that significantly transformed our society. According to D. Bell, contemporary society can be called 'post-industrial' and 'informational' [Bell, 1994], P. Drucker discusses the 'post-capitalist society' [Drucker, 1972], E. Toffler considers the 'third wave' society [Toffler, 1980], M. Castells — 'network society' [Castells, 2011]. F. Machlup and other scientists believe that there is a transition to the 'knowledge society' and 'knowledge economy' [Machlup, 1980]. The above concepts do not exclude but mutually supplement each other, indicating the considerable role of knowledge in all spheres of society [Veredyuk, 2010: 35—37]. In particular, the traditional industrial structure of social and labour relations in organisations has changed in developed and developing countries where intellectual capital has become a central resource of productivity growth. The body of literature on this topic has risen exponentially over the last 50 years. So far, however, there has been little discussion about the appropriate social practices for the development of intellectual capital.

In this article, the term 'intellectual capital' is analysed in relation to companies. Although the importance of intellectual capital has already been highlighted in various disciplines — economics, management, jurisprudence, psychology, few articles have examined the potential of social science in the development of intellectual capital. Intellect in its basic meaning is an innate mental ability. However, intellectual capital as a category of economic sociology is a collective asset, has social origin, social modes of development and transmission mechanisms, and is reproduced in social and labour environment. Moreover, the environment promotes the reproduction of inequality and the position of a social group in the social hierarchy through intellectual capital [Pellow, Nyseth Brehm, 2013: 230—332].

Each company represents a social population that exists in a social environment and struggles for survival, development and profit on the market. Within the framework of economic sociology, intellectual capital might be considered as a major resource in the struggle of companies for position in the external social field — on the market. The key purpose of the study is to investigate how to develop social environment oriented in social health in the workplace, measures that affect the quality of working conditions for the development of intellectual capital, and hence increase labour productivity.

Specifically, social and labour transformations are associated with high-tech companies. The wide spread of a new, fast-growing, high-tech branch of information technology in everyday life has led to the selection of companies from the information technology industry (IT companies) as the research object. Among large IT companies operating on the Russian market are: Google, Yota, Oracle, EMC<sup>2</sup>, OperaSoftware, OpenWay, Veeam Software, DrWeb, Motorola, Reksoft, Transas, DataArt, VKontakte, Yandex, JetBrains, i-Free, Pin Telecom, GitHub and others. Companies of the IT sector constantly need to meet the requirements that the market puts forward — to be dynamic, to respond quickly to changes in the external environment and to contribute to innovative development of society. Intellectual capital is the foundation of the entire information technology industry, based on the 'increasing returns' [Arthur,

1996: 104—105]. Currently, it is not enough for companies simply to implement knowledge — scientific and technical developments. The process of continuous creation and reproduction of existing knowledge in social and labour relations is needed. Thereby, the question of how information technology companies should build social environment, increase, reproduce and develop their intellectual capital in the process of social and labour relations is seen as particularly acute.

### **Theoretical and methodological framework of research**

The central questions of the study ask what is the intellectual capital of the company, what is its essence and structure and how to create social and labour environment aimed at the development of intellectual capital.

The research projects is based on the constructivist structuralism. Our study examines the ‘game’ metaphor used as an instrument of methodological conceptualisation in order to explain the phenomenon of intellectual capital of companies. P. Bourdieu is one of the sociologists who adapted the ‘game’ and ‘capitalist’ terminology to illustrate a whole series of social phenomena, and distinguished the following basic concepts: agent, habitus, capital, social field, social space, social practices of agents. The game, according to the scholar, takes place in the social space where various types of capital (economic, social, cultural, political, symbolic, etc.) serve as the main resource for the struggle for power in various fields. The higher the level of a particular type of capital is, the higher position of an agent in the social field [Bourdieu, 2005: 37—56]. Intellectual capital acts as productive capital in the contemporary world, because those who possess it and those who do not consider it as a decisive force in the knowledge economy. Agents can act both as separate individuals and as groups of people.

In this paper, where middle-based sociological theories are presented by economic sociology and sociology of organisations, the role of agents is played by organisations (social population) [Economic sociology: theory and history, 2012: 338]. For P. Bourdieu, the accumulation of knowledge and skills is inseparable from symbolic capital — the desire for social prestige and recognition. Intellectual capital acts as a kind of symbolic capital of the company. Investments (tangible and intangible) in the company’s intellectual capital contribute to the formation of the symbolic (prestige, power) and social (trust) capitals of the company in the external and internal environment which can be converted into the economic capital [Kasabutckaia, Petrov, 2015: 77].

Considering the ‘game metaphor’, it is important to note a ‘craving for homogeneity’ in the organisational field, which P. DiMaggio and U. Powell term organisational isomorphism [DiMaggio, Powell, 2010: 38—39]. If practices of behavior (including the model of social and labour relations aimed at developing intellectual capital) are perceived as potentially capable of yielding higher wins in the industry, they become objects for imitation.

It is important to note that the rules of the game in the organisational field are not static or predetermined a priori, but are constantly constructed and reproduced by agents’ practices. Using the theory of constructivist structuralism, it can be argued that social microprocesses are interrelated with macroprocesses. Social macroprocesses, connected with the considerable influence of society and the knowledge economy,

modify social practices of agents (companies), determining the need for the development of intellectual capital. The formation of companies' intellectual capital was influenced by a large number of different structural factors (macroprocesses) of the global economic system, including:

1. Intellectualisation of labour, the growth of professional knowledge and competencies in the production process;
2. Expansion of scientific, research and development activities (science intensity of production);
3. Continuous learning;
4. Mobility and flexibility in the external and internal production system (in response to constant changes in the external environment);
5. Network interactions;
6. The need to build trust in the external and internal environment of the organisation;
7. Rise of self-organisation and self-control.

The above trends should be taken into account by the company's management to improve social and labour relations and to facilitate intellectual capital development. With regard to constructivist structuralism, society as a whole can be transformed only through changes in the microsocial practices of agents.

A large number of both foreign and Russian scholars began to explore issues associated with intellectual capital: L. Edvinsson and M. Malone [Edvinsson, Malone, 1997] — researchers from Sweden, scholars from the United Kingdom — J. Ruus, S. Pike and Fernstrom L. [Ruus, Pike, Fernstrom, 2008], T. Stewart [Stewart, 2007], M. Armstrong and S. Taylor [Armstrong, Taylor, 2014] and others. V. Inozemtsev is Russian researcher who deals with issues of intellectual capital [Inozemtsev, 1999]. Actually, scientific literature does not have a single and clear definition for this concept. The variety of interpretations of the essence and structure of a company's intellectual capital makes it difficult to derive a uniform description and can lead to confusion. The research project provides definition, based on the structure of intellectual capital of companies proposed by T. Stewart: human, structural and customer capitals [Stewart, 2007: 13—17]. The company's intellectual capital is the organisation's knowledge, embodied in *human capital* (knowledge, skills, competencies, motivation of employees), *organisational capital* (organisation of social and labour relations for the most efficient production process, and the creation of innovations and intellectual property), *communication capital* (knowledge embodied in relations with stakeholders) (Table 1).

Since a modern employee spends longer time at work, microsocial practices of social and labour organisation play an extremely important role in social feeling and in the development of intellectual capital [Grachev, Rusalina, 2007: 8—12]. The paper stresses the need to build the company's social practices for organising social and labour environment in order to develop intellectual capital. It is significant that such practices build loyalty to and trust in the company on the part of both employees and stakeholders. The development of intellectual capital is a kind of 'credit of trust' in response to which employees must pay off their 'obligations' through qualified and efficient work.

**Table 1.** Structure of Intellectual Capital in Organisations

Structure of Intellectual Capital in Organisations	Intellectual capital of organisation		
	Internal capital		External capital
	Human capital	Organisational capital	Communication capital
Social practices of companies aimed at organising social and labour environment for the development of intellectual capital	Selection of employees	The formation of the structure of the company	Building an external network of relationships with customers and consumers
	Development of knowledge, skills and competencies of employees	Development of organisational culture	Interaction with partners
	Development of motivation for innovative and creative activity	The formation of goals, values in the company	Interaction with external organisations
	Building trust among employees	Information exchange	Interaction with universities
	Reproduction of physical capital	Development of innovative activities (research, development of patents, know-how, etc.)	The formation of image and recognition of the company

### Methods of empirical research

The sociological research conducted by the author in 2014—2016 years is based on the survey method — expert in-depth interviews (20 interviews). Structured interviews were conducted with chief executives, top managers, HR-managers and employees of large multinational companies, and small and medium-sized companies operating in the field of information technology. Criteria for selecting the informants were: work experience in the studied IT company for at least 5 years, credibility and competence in the development of knowledge and intellectual capital. The experts were selected by using the snowball method based on the recommendations of the informants themselves.

The interview guide consists of five blocks. The first block includes the socio-demographic characteristics of the informants and their biography. The second block consists of questions related to a common understanding of intellectual capital and its significance for the development of the company. The three subsequent blocks refer to the development of human, organisational and communication capital respectively, in accordance with the author's criteria (Table 1). The research raises the question of how IT companies should organise social and labour relations (by social practices) to develop intellectual capital.

## Development of human capital

Human capital consists of people with their knowledge, skills, creativity, competencies. The following criteria were specified for the analysis of social practices for the development of human capital: selection of employees; development of knowledge, skills and competencies of employees; development of motivation for innovative and creative activity; building trust among employees and reproduction of physical capital.

### *Selection of employees*

The development of human capital, as a part of the intellectual one, can occur in two main ways: selecting highly qualified specialists from the external labour market and developing them directly within the company. The first way generally includes a rigorous and regulated procedure for assessing knowledge, skills and competencies of potential employees. In spite of the developed mechanisms for the selection of candidates, high-tech companies are moving away from practice which is simply focused on recruiting, looking for 'stars' and trying to create informal mechanisms for hiring.

*'Our unspoken rule is to meet with those candidates whom we are recommended. First and the foremost, this demonstrates the company's respect for the opinion of employees. In addition, we expect to see a person with a formed view of the company, projects and products. However, the recommendation is not equated with hiring, because there are general selection rules that apply to everyone without exception'* (HR-manager of a large IT company, female, age 28).

*'On the market, there was not available the vacancy for which I applied'* (employee of a large IT company, male, age 26).

Thereby, the HR-selection methodology includes a system of recommendations when employees can offer the most appropriate candidates. Thus, the knowledge of employees embodied in social ties and personal contacts is realised through the 'strength of weak ties' [Granovetter, 2015: 38—40] in the selection process and significantly increases the mutual trust between employees and the company [Hansen, 1999: 82—89].

Furthermore, social policy of HR-management is aimed at selection of young, creative candidates. In accordance with the expert interviews, the age of employees in the IT sector varies mostly from 20—35 years. This is due to the fact, that IT industry is modern, and young employees are interested in self-education in the labour process are capable of creative solutions that neutralises the lack of experience.

### *Development of knowledge, skills and competencies of employees*

The larger the company is, the more it invests in the development of knowledge, skills and competencies of its employees. The experts pay attention to the necessity of compulsory and optional trainings for both beginners and regular staff. At the first stages, curators should explain the principles to the new, mostly young, employees. Some companies pay for staff courses, providing that an employee confirms the effectiveness of this course and its connection to specific job responsibilities. A number of multinational high-tech companies organise corporate universities. Such universities provide with trainings aligned with the goals of an organisation. The informants suppose that the level of employee satisfaction is higher in organisations where such corporate universities are present. The invested labour and time of employees in

high-quality work is a kind of 'return of labour obligations' for the development of their knowledge and skills.

IT companies should pay attention to the method of human capital development, where staff trainings are designed not only through formal 'directive from above', but when employees themselves actively participate in this process, expressing their wishes. Especially this measure will have a positive effect on self-realisation of young personnel [Karaseva, 2013: 120].

*'Trainings for programmers and developers can be organised on the initiative of teams, as it happens in project teams'* (HR-manager of a large IT company, female, age 32).

To develop knowledge and skills of an employee, it is also necessary to give complex and non-standard tasks of a higher level.

*'It will be good for the development of an employee if he is given a task that exceeds his knowledge and the achieved goal will be great for him'* (chief executive of a small IT company, male, age 35).

IT companies keep both traditional and electronic libraries for knowledge sharing. Moreover, network of social interactions and knowledge generation technologies such as brainstorming should be practiced. The experts, however, observe that human capital is also improving in the process of self-development and self-education during free time. That is why chief executives and top managers should realise that the development of human capital to the detriment of free time could lead to negative consequences.

#### *Development of motivation for innovative and creative activity*

Motivation greatly influences the human capital increasing since a motivated person is capable of developing both his own intellectual abilities and the intellectual capital of the company. It is evident that financial benefits and the opportunity for career growth among programmers, developers, designers, marketers and representatives of other professions would be essential. Another no less important motivation for personnel is interest in complex tasks, solutions and final products generated by 'collective brain'. Improving the existing social reality through the developed product likewise plays a considerable role.

*'We have something to compare with and we are told that the quality of our product is better. This strongly stimulates further development and improvement'* (chief executive of a small IT company, male, age 29).

*'With the help of our product we want to make it easier for people and companies to work, interact with each other, reduce time costs'* (employee of a large IT company, male, age 33).

*'We are moving in that direction, so that our technologies can give impulse for people's ideas. One can create something more, better and faster. It reminds renewing and duration of living cycle of our work and I believe that employees are inspired with this thought'* (chief executive of a small IT company, male, age 28).

Thereby, IT companies need to build a motivation system, where not only financial and career growth will be indicators of the social success of young employees, but also the creation of an interesting product, the possibility of self-realisation and the improvement of public life through their products.

### *Building trust among employees*

The social (internal) capital of the company is the basis for the development of the company's human capital, where the development of trusting relations with colleagues is necessary [Huysman, 2014: 85—89].

*'Confidence within the team is probably the basis of the whole business, all the collapses occur because people stop negotiating with each other, they lose mutual understanding'* (top manager of a medium-sized IT company, male, age 34).

However, the only knowledge that social capital significantly affects the intellectual capital of an organisation is not enough, it is important to develop this social capital in the process of social and labour relations. In large companies, trust relationships can be built on fixed mechanisms, prescribed schemes and well-established processes.

*'Recently I integrated into another team, but it did not cause me any discomfort, my schedule included communication with specific people and I could ask for help from any member of the team and the leader, because it was fixed in the time management of my day. Unfortunately, I had to do everything myself and join myself in the system's work on the previous job'* (manager of a large IT company, female, age 27).

The experts note the importance of an unspoken rule, according to which everyone should be perceived as a professional in a particular field, hence, anyone can be contacted for help or advice.

Numerous multinational companies use the OKR system (Objectives and Key Results) for assessing goals and obtained results. HR-managers consider that thanks to this system not only motivation is risen, but also tasks are generated for internal communication of the employee both with his team and with other colleagues. The informants also point at another system for assessing employees — 360 degrees, which helps to develop trust in social environment. Since employees and senior officials are given certain criteria to evaluate each other, this procedure is an incentive for creating a trusting relationship between employees and management. Such evaluation system is often held every six months. However, with respect to the answers of the experts, this rating system can perform the latent function of 'collective control' and could destroy the cohesion of employees in case it is used only for the sake of reporting.

### *Reproduction of physical capital of employees*

In multinational companies, management pays special attention to the reproduction of physical capital, that is why companies invest in a social package for employees and draw up quality health insurance that covers medical expenses, including fitness, dentistry and other services [Phillips, Phillips, 2015: 143—157]. In a range of companies, this service extends not only to employees themselves, but also to their children and relatives. Proper nutrition is an equally important component of maintaining staff health. Compensated food or organised micro-kitchens for employees are good practices for maintenance of health and reproduction of the physical capital of employees.

## **Development of organisational capital**

The organisational capital of the company acts as an infrastructure for the development of the company's human capital, five main criteria for its analysing were identified: the formation of the structure of the company; development of

organisational culture; the formation of goals, values in the company; information exchange; development of innovative activities (research, development of patents, know-how, etc.).

#### *The formation of the structure of the company*

With respect to M. Castels' concept, modern companies are increasingly mobile, because the hierarchical structure is changing and companies are trying to match the dynamic knowledge society, therefore, they are increasingly moving to agile, network structures of interaction [Castells, 2011: 166—180]. Flexibility is emerged in relation to both external and internal environment. The external environment transformates as companies need to respond efficiently to changes in consumer preferences and build communication channels (developing their communication capital will be discussed in the next paragraph). The internal structure also modifies — the experts consider there is a flattening of the hierarchy, staff mobility and interaction changes.

*'A large number of managers, bosses and hierarchs do not match the style of our company, we have a very short vertical'* (HR-manager of a large IT company, female, age 30).

*'It is impossible to have absolutely flat structure for a corporation about a thousand of people, but it is important to try to be agile and respond quickly to changes'* (manager of a large IT company, male, age 32).

In the process of social and labour relations, model 'boss-subordinate' is in decline, and management acts on a par with employees. The informants positively assess the possibility of employees' decisions to influence the development strategy of the company.

*'There are commands with and without a hierarchy. We have the second one. I also work 12 hours a day, like everyone else, and it stimulates everyone else to work'* (chief executive of a small IT company, male, age 35).

*'Senior managers (CEO, COO) write code and participate in the creation and development of the product, like other programmers and developers'* (employee of a large IT company, male, age 35).

Companies in the IT industry need to develop organisational capital, based on a flexible management system, where the structure of the company will tend to shorten a hierarchy, which will largely develop the employees' innovation activity and the ability to exchange knowledge and experience quickly.

#### *Development of organisational culture*

Comfortable social and labour environment, and social health of social group are also resulted from favorable cultural environment [Salahutdinova, 2011: 265]. Based on the answers of the experts and the analysis of theoretical sources [Shcherbinina, 2014], the culture of work can be assessed from two sides — external (observable) and internal (which is difficult to describe).

The visible part of the corporate culture, as office decoration, was easier for the informants to describe. Regarding the expert interviews, it was found that in IT companies it is necessary to create comfortable environment for the exchange of knowledge of personnel. Therefore, it is important to equip the office not only for work but also for the most effective social interaction and communication that promotes both employee rest and generation of new ideas in the process of informal communication.

Offices of IT companies are often equipped in the same style, they may include — sports equipment, micro-kitchens, recreation areas, table games (tennis, football, billiards, ping-pong), video games, hairdressers, dry cleaners, manicures, massages and various other activities. This environment is created since mostly young professionals are working in the IT companies, who need active leisure in between work. Furthermore, the flexibility of the company should be respected not only in its structure, mobility should be observed in the organisation of working time and space.

*‘Despite the prescribed hours in the employment contract, the office is open 24/7. You can come at any convenient time, even at night’* (employee of a large IT company, male, age 28).

Thereby, managers create a cozy atmosphere, so that ‘non-working’ issues can be carried out at work. However, the experts noted that such practices should be applied in moderation.

It was more difficult for the informants to describe the invisible (internal) aspect of organisational culture. However, the majority of them agreed that a certain style of life features the IT sector. IT companies form a consistent unreflexible habitus (similar norms, values and rules of behavior in a social group), which promotes successful interaction within the social group. Habitus, as a generative and unifying principle that emerges in the social environment, is subsequently reproduced in language, culture of communication, clothing, and hobbies. One of the informants referred to the novel ‘Cat’s Cradle’ to explain the general spirit of the company, where the author — Kurt Vonnegut, uses the concept of ‘karas’ in a similar meaning to the concept of ‘habitus’ P. Bourdieu.

*‘Despite the fantastic nature of the novel, in our company there is a common ‘karas’ — the type of people who quickly find common themes, interests and language of communication, even without knowing each other. It is comfortable for us to communicate, we are learning something new, we develop ourselves’* (HR-brand manager of a large IT company, male, age 29).

The informants believe that organisational culture should be developed very ‘organically’, ‘at the level of a flair’. Various social activities that are informal, also contribute to the development of organisational culture — for instance, reading clubs or nightly screenings of films.

#### *The formation of goals, values in the company*

Some experts suppose that formation of goals and values is an important element of the company’s development. In multinational companies, goals and values are clearly defined and staff activities are structured on their basis. Values and mission are often mentioned in training sessions, KPI and OKR systems help to ensure that all tasks of employees meet the company’s key goal. Other experts from both large, medium-sized and small companies believe that it is not necessary at all, if the general direction of the development is clear.

*‘All employees have a shared consciousness of what is happening in the company. Managerial concepts as mission, goals, values are quite dangerous and should be used with special care, because it’s a different type of company — agile organisations’* (HR-manager of a large IT company, female, age 28).

The informants agree that goals and values of the company’s employees need to be investigated and reflected in formal or informal goals and values of organisations.

### *Information exchange*

To the question — how does information exchange take place in your company? — the experts answered the following.

*‘There is a software package to plan our work, colleagues can understand at what stage, who has work, so that there is an understanding of the whole timing process. There we make a schedule and distribute the tasks. Well, respectively, Skype, Viber and something like this we use for communication’* (marketing manager of a small IT company, female, age 26).

For developers and other employees, it is necessary to hold meetings to share experience and knowledge. All are engaged in different local tasks and develop their own product, which should be combined in one.

*‘One technical specialist needs a lot of third-party knowledge to realise a task. There are numerous tools that allow a standard approach to this process, but employees want to hear and absorb knowledge from another specialist associated with them. Therefore, it is necessary to transfer knowledge at technical meetings’* (chief executive of a small IT company, male, age 29).

The creation of a common intracorporate communication network facilitates the most rapid exchange of knowledge and information. Internal knowledge-sharing bases are an important aspect of developing the organisational capital of companies, as they increase the communication effectiveness between teams working on different projects. A box of proposals is among the most popular ways for companies to accumulate and develop ideas on new products. The informants recommend using both formal and informal ways to communicate and maintain a high level of social cohesion in the community.

### *Development of innovative activities (research, development of patents, know-how, etc.)*

Innovative activities and intellectual property creating is not just a way of obtaining financial benefits, but also a value and a symbol of the company's success and reputation. Resulting in continuous developing products in the IT sector, a number of IT companies allocate 20% of their time for employees to implement their own ideas and projects, research and development. With regard to the outcomes of the research, such way of developing intellectual capital is more the rule than an exception in the IT industry. A person during the work process has the opportunity to develop his own product, based on the tools provided by the company. The experts note that financial encouragement of successful innovative projects and their implementation in the labour process, also affect the motivation of employees and increases their confidence in the company. Thanks to intellectual and creative work in IT companies, a technology is created that can be a know-how of the company or registered as a patent. Chief executives of small and medium-sized companies also point out the necessary to improve state mechanisms of patent examination in the country, and remark the procedure of patenting of long continuance. In the contemporary world, the speed of new technologies is accelerating every year, which contributes to the obsolescence of technology by the time the patent is issued.

## **Development of communication capital**

Derived from human capital, communication capital is based on knowledge of the external environment and on social interrelations with the external environment — with

stakeholders. The main characteristics of this type of capital are: building an external network of relationships with customers and consumers; interaction with partners; interaction with external organisations; interaction with universities; the formation of image and recognition of the company.

*Building an external network of relationships with customers and consumers, and interaction with partners*

Based on the interviews, it was revealed that companies are trying to develop trusting and long-term relationships with customers, consumers and business partners. The informants note the need to develop long-term relations with stakeholders, where a feedback plays a significant role. A successful practice providing effective relationship with external environment is launching client database and department analysing the development of relations with clients.

*'We have a special department that deals with the management of current customers and clients, and all problems and wishes are solved quickly'* (manager of a large IT company, female, age 29).

*'We ask to write reviews on the Internet, customer support is carried out'* (chief executive of a medium-sized IT company, male, age 31).

*'The trust relationship is the principle of openness, which our entire group of companies is promoting. We are engaged in the development of free software and are experts in this field. These are software products that have several degrees of freedom. Product is distributed without licenses. Any user who downloaded this programme can use it for any purpose, including commercial: to modify the source code of this programme, study or create new product. This model of free software we transfer to relations with our partners and customers. Everybody sees the whole process, how we work, and can control the development and implementation of our products'* (chief executive of a small IT company, male, age 29).

The experts consider that principles formed in the working team should be reflected in the interactions with customers and partners and presented in company's brands.

*Interaction with external organisations*

The informants paid attention to the importance of interaction with external organisations aimed at the formation of communication capital. The external network unites business incubators, small, medium-sized and large companies that can act as customers or partners. Furthermore, it is promising to provide a kind of transfer of innovations through interaction with external organisations that can be realised by innovative venues.

*'Being constantly in the community, networking environment, you move much faster'* (manager of a large IT company, male, age 28).

Henry Chesbrough [Chesbrough, 2006: 43—51] offered 'open innovation' model, where companies develop intellectual capital not only through the internal resources of organisations, but also actively use external ideas and knowledge.

*'A small company, introducing breakthrough projects (distractive technologies), is trying to offer a new technology that is not perfect, but proposes much more benefits than the previous paradigm. From the beginning, small companies are simply forced to provide with innovative solutions. Interaction of intellectual resources of large giants and small companies can positively affect the results of business'* (manager of a small IT company, male, age 31).

In this context, the interaction of small and large companies is actualised. Often it is small and medium-sized companies which are innovators, and large companies have a possibility to implement their developments.

#### *Interaction with universities*

Since the last decade of the 20<sup>th</sup> century, higher education and further employment have ceased to be inextricably linked to each other. There is a problem of a significant contradiction between the education received and the market requirements. Frequently, education of programmers, developers and other specialties related to intellectual work in the IT field does not correlate with the real tasks of the company. Thus, the problem of finding a compromise between higher education and business is acute, where companies become the key agents. With respect to the results of the expert interviews, modern companies are more eager to erase the gap between higher education and business by developing a network of contacts with universities. In the high-tech IT industry new ways of interaction between higher education institutions and the labour market are emerging. The experts described similar practices of companies' interaction with universities, based not only on traditionally accepted internships, but also on new methods. Firstly, it is popularisation of company products in higher education.

*'Companies in the IT field should provide universities with the opportunity to use the developed products for free in the educational process. What does this help? With new products, universities can keep pace with the times, improve the quality of education. What is more, a whole segment of employees interested in the company and its products is being formed'* (HR-brand manager of a large IT company, male, age 29).

Secondly, the gap between higher education and business led to the formation of new occupations in the labour market in the IT field, among which: University Relations Manager (UR-manager) and HR-brand manager. These professions initially appeared in Western companies, with the arrival of multinational companies — IBM, Intel, Microsoft, and expanded in Russian companies in the IT sector. Major tasks of UR-managers include the following aspects: the development of educational programmes in higher education institutions in accordance with the requirements of the company, the involvement of higher education institutions in research and development together with companies, communication and interaction with professors and with students, training process. HR-brand manager is responsible for the image of the company in the external environment in order to inform, increase loyalty and the possibility of further selection of potential employees in the company. Thirdly, a number of companies create their own laboratories in cooperation with higher education institutions.

*'The students' inclusion in these venues, partnering with universities, guarantees us the quality of knowledge of graduates'* (HR-manager of a large IT company, female, age 30).

Thereby, such practices companies' interaction with universities as the popularisation of products, the development of new professions and collaborative educational venues contribute to the development of communication capital of companies. Assistance of companies in obtaining knowledge and skills by young professionals, increases their loyalty to and trust in organisations, and simplifies the further possibility of selecting highly qualified specialists.

#### *Formation of image and recognition of the company*

The image and the development of the company's brands is a part of intellectual capital of organisation. 'Useful relations', which form the basis of the company's communication capital, are also formed thanks to the promotion of companies, their participation in exhibitions, forums, competitions.

*'We organise the availability of information — speak at conferences, explain, work with the public through exhibitions, via the Internet, through promotion'* (chief executive of a medium-sized IT company, male, age 28).

Image, besides, includes social responsibility of business. The experts noted the low role of social practices in Russian companies in the IT field aimed at the external social sphere such as the creation of educational venues, social responsibility in the sphere of charity, the improvement of nature and environmental protection. Moreover, companies should not have a purpose only to satisfy the tendencies of international organisations in social norms, international standards and compulsion to social responsibility of business. An important emerging direction in IT companies could be social responsibility based on the unique developments and tools of organisations, targeted specifically at the human capital growth among young people. Companies ought to solve social issues, develop social responsibility, which in turn forms trust in the company, and company's power and intellectual capital.

## Conclusion

Results of the research project are in line with findings of escalating transformation of social and labour relations, where intellectual capital plays a key role in the production process in the contemporary world [Petrov, 2008: 75]. Thus, the company should pay attention not only to its economic growth, but also to social environment.

Employers form favourable working conditions for employees, and trust relationship with stakeholders for the development of intellectual capital. In the process of qualitative research, unique ways of developing intellectual capital by IT companies were revealed. The experts in the interviews shared social practices aimed at organising social and labour environment for the development of intellectual capital.

The research highlights the structure of intellectual capital and discloses the synergetic effect of all elements of intellectual capital. Structural components of intellectual capital (human, organisational and communication) are in continuous interaction, and the development of one of the elements has a significant influence on the others. It was explored that human capital occupies a central place in the structure of intellectual capital.

The results of the study are consistent with the theoretical model of organisational isomorphism, presented in the article. Thus, we can approve that companies use common practices aimed at the development of intellectual capital. Moreover, the development of intellectual capital goes simultaneously with the formation of symbolic (prestige, power) and social (trust) capitals of the company in the internal and external environment. Not only large multinational companies create environment for the development of intellectual capital, so do small and medium-sized companies, trying to imitate their practices.

In IT companies, social practices aimed at organising comfortable social and labour environment are based on continuous learning process, flexibility, organic formation of

organisational culture with such principles as self-development, freedom and creativity, which largely enhance innovative activity in all levels of the company. It was revealed that IT companies try to allocate time for innovation, use their own developments in the working process, which contributes to increasing the loyalty of employees to products and performance of companies. In general, described social practices could be explained by the large number of young professionals working in IT companies. The model when intellectual capital is formed and reproduced only as a result of the company's internal resources ('a closed innovation model') is in decline. A growing number of high-tech companies develop a network and trusting relationship with stakeholders, including educational institutions.

Indeed, a promising line of study would be identification of social practices of development intellectual capital in different industries in comparison with the IT sector. Further investigation could reveal quantitative measurement of intellectual capital and social health of employees in different organisations.

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