

# Interaction of Employers and Universities in Training and Employment of Young Professionals



Alexander Fedoseevich Borisov, Elena Eugenievna Tarando, Nikolay Alexandrovich Pruel, Yaroslav Alekseevich Vorontsov, Tatiana Alexandrovna Trofimova

**Abstract:** *The article deals with the results of a sociological research focused on the interaction processes between employers and universities. We selected several information technologies companies and analyzed the main technologies of their interaction with universities of St. Petersburg. The article offers the vision of employers, universities and students interactions as a kind of social network, analyses the conflicting interests of every subject involved, and reveals the main problems that interaction arises between them. The results of the questioning of graduates, their opinion of problems in the modern youth labor market, which is dramatically short of skills because of the increasing gap between the needs of employers and the abilities of the staff provided by the education system, are analyzed.*

**Keywords :** *Interaction between universities and businesses, labor market, communications, competencies, employment, young professionals, employers.*

## I. INTRODUCTION

As scientific and technological progress and the advent of new industries and professions in the labor market see rapid development, organizations have to face an acute problem of strategic management in the sphere of selection, recruitment and adaptation of young professionals. On the one hand, this problem is important for educational institutions that fail to keep pace with the rapid changes in the labor market and, often, produce specialists who, having high general level, do not possess the competencies the labor market demands or will demand in next 10-15 years. On the other hand, this problem is struggled by companies that realize their needs in the hiring of young professionals, but also assess their risks

and funds spent on their retraining and progressing, based on the needs of the business. Hence, the problem of extreme urgency is making the effective models of the interaction between enterprises and universities in the process of preparing and employing of young professionals, their selection, recruitment and adaptation.

This research analyzes the technology of organizations-universities interaction in training and employment of young professionals, and assesses the effectiveness of such interaction. Its achievement requires solution of the following tasks: 1) to analyze forms of the interaction between organizations and universities; 2) to find out social technologies of the interaction during employment and development of young professionals; 3) to explore the organization of the interaction process between the company and the university; 4) to give the management recommendations for building the effective interaction between companies and universities.

## II. LITERATURE REVIEW

Scientific literature approaches many aspects of interaction between universities and employers. E.g., some works analyze the networking of universities and core business organizations, and base their analysis on representative examples of such interaction [1]. Various problems related to the employment of university graduates in organizations interacting with these universities are also explored; exemplary is an adaptation of graduates in the workplace in the context of the necessary development of the human capital in organizations [2], [3]. The problem of the necessary development of the human capital in organizations through building-up of the labor potential of university graduates and the interaction of universities and these organizations on this issue is also embodied in the scientific literature. [4, 5].

Another layer of the scientific literature studies the effectiveness of various methods and strategies for teaching of university students with the support of employers also involved in the training. E.g. issues of interest are mentoring in the workplace as a part of passing various practices in an employers' organization [6], the efficiency of gaining the entrepreneurial skills the graduates will need to work successfully after the university [7].

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\* Correspondence Author

**Alexander Fedoseevich Borisov\***, Saint-Petersburg State University, Saint-Petersburg, Russia.

**Elena Eugenievna Tarando**, Saint-Petersburg State University, Saint-Petersburg.

**Nikolay Alexandrovich Pruel**, Saint-Petersburg State University, Saint-Petersburg, Russia.

**Yaroslav Alekseevich Vorontsov**, Russian Timiryazev State Agrarian University, Moscow, Russia.

**Tatiana Alexandrovna Trofimova**, Saint-Petersburg University of the Ministry of Internal Affairs of Russia, Saint-Petersburg, Russia.

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advantages and disadvantages in the forming of narrow and wide specialized skills of future university graduates and the need for employers to participate in this process [8]. It is noted that training in the workplace arranged by the employer plays a special role in the preparation of graduates. Moreover, successful training is a strong factor in further employment of a graduate in the organization where he studied [9].

Some works focus on the interaction of universities and employers in terms of results of such interaction, namely quality of the knowledge and the skills the graduates obtain, their agreement with the requirements of the employer [10]. This aspect is also examined through analyzing the competitiveness of university graduates in practices based on the interaction between universities and employers [11]. Close to these studies are those aimed at comparing the effectiveness of hiring of university graduates and the employment of age workers for organizations in terms of the package of opportunities these groups of workers have [12].

At the same time, there is a lack of comprehensive studies of social technologies of the interaction between universities and employers in employing of university graduates in Russia. These technologies are formed, firstly, by the adapting of the experience gained by developed countries, secondly, by the transforming this experience in accordance with Russian realities, and, thirdly, by the specifically Russian mechanisms appearing within these technologies. The article that follows fills in this aspect, little covered in the scientific literature.

## III. RESEARCH METHODOLOGY

The research employed in-depth interviews with managers of companies, together with questioning of students (graduates), and included two stages:

1) The first stage. The research method: in-depth interview. Object of research: specialists of the personnel department.

This stage analyzed the specifics of the companies, characterized the basic principles and established the approaches to the managing interactions with universities.

The tasks of the first stage:

1. To characterize the features of the functioning of the companies;
2. To reveal the main forms of the interaction with the universities;
3. To analyze the main causes of the interaction with the universities;
4. To identify the main technologies of the interaction in the sphere of the employment and the development of young professionals;
5. To identify the main features of the interaction of the employees within the company, as well as with young professionals;
6. To identify the indicators and the quality assessment of such interaction;
7. To identify the main actors to improve the quality of interaction (whose competence are these processes, and who is responsible for quality);
8. To describe the main measures necessary to improve the quality of the interaction.

2) The second stage. The research method: questioning.

Object of research: young professionals, graduates.

This stage offers subjective assessment of the quality of the interaction between the organizations and the institutions of the higher education in employment and development of young professionals.

The tasks of the second stage:

1. To identify the main reasons for the interaction of the universities with the companies, as viewed by young professionals;
2. To determine the extent the graduates are included in the interaction with the organizations;
3. To assess the level of the satisfaction with the quality of such interaction;
4. To determine the main subjects of improving the quality of interaction, in the opinion of the students (whose competence are these processes and who is responsible for this quality);
5. To characterize the main measures necessary to improve the quality of this interaction (according to the students);
6. To determine the role of the university in the process of the interaction with the organization (according to the students).

To solve all these tasks, we addressed to the experience of interaction between four IT companies and the leading universities in St. Petersburg. Conventionally, companies fall into two groups according to the nature of interaction with universities: interacting or non-interacting. In choosing the additional questioning criteria, we were guided by the following:

1. the company employs more than 50 people involved in production (not including the administrative unit);
2. The term of existence of the company on the market is more than 5 years;
3. A representative of the company's personnel department is available for communication.

The survey embraced students and recent graduates of St. Petersburg State University, from all faculties (168 people), of which 92 are girls and 76 are boys aged 18 to 26. The distribution between the humanities and natural sciences faculties was 58% and 42%, respectively.

Problem situations in the companies were analyzed with the help of the case method. The processes of the interaction of these companies with 5 leading universities of St. Petersburg were analyzed. The main stages and forms of the interaction of these companies with these universities are identified. Within this method, the main directions and processes of the interaction between the students and the employers were investigated. The features of the interaction of the employers with the universities in the foreign and the Russian companies were analyzed. The specificity of the products produced by these companies influenced on the search and the selection of relevant specialists. These practices formed the basis of the work of the personnel services of the companies.

## IV. THE FINDINGS OF THE RESEARCH

Due to the rapid pace of the technology development and the modernization of production processes,

the problem of finding and selecting qualified specialists is acquiring particular importance for companies. In the modern conditions of the labor market, there is the transformation not only of the tools searching for candidates (professional social networks, professional forums), social search technologies, but also the principles of the interaction between the participants of the process and changes in their functions.

Now in companies, the functions of the process managing of the interaction with universities, the control the quality and the results of this interaction are carried out within the framework of the responsible people of the “graduate recruitment” – the search, the selection and the development of young professionals [13], [14].

The search of new ways to improve the recruitment in companies, creating conditions for improving the quality of these processes, the redistributing the functions of new roles forming for all participants in the employment process of young professionals update the problem of the managing the interaction between the company and the university.

At the moment, among all the companies that operate in the high-tech market, we can distinguish at least three types of employers: those that actively interact with universities; those who once started this process, but could not build long partnership or found this interaction unprofitable; and companies that have never interacted with universities [15].

As a part of the research, we reviewed the experience of four IT companies in St. Petersburg, which, by the nature of the interaction with universities, can be divided into two groups: those who work in this trend and those who do not work in this trend. As additional criteria, we have been guided by the following: 1) the number of employees in companies must be at least 50 people; 2) the term of the company’s life in the market must be at least 5 years; 3) the possibility of communicating with representatives of the personnel department of companies (see table 1).

**Table 1: Characteristics of companies**

#	Product	Founder	In Russia (years)	Number of people in the company	Universities
Company 1	Own product	Foreign	7	More than 300	+
Company 2	Custom development	Foreign, Russian	19	More than 100	+
Company 3	Custom development + own product	Foreign	16	More than 50	-
Company 4	Custom development	Russian	6	More than 50	-

Let's consider the main case studies of these companies.

Case 1. The first company is a representative office of a foreign IT company in St. Petersburg. The company exists on the St. Petersburg market for 9 years. It specializes in developing its own software. Currently, more than 300 people work in the representative office of this company in St. Petersburg. Of these employees, about 100 people are people aged about 25 years. They are the former students who have recently graduated from the university and begun to work. There are also those who are still studying and working at the same time in the company as interns or junior engineers. Already, based on these data, it can be concluded that the company effectively implements its student programs related to the employment of young professionals.

The company builds its interaction with 5 universities in St. Petersburg: St. Petersburg State University (SPbGU); St. Petersburg University of Fine Mechanics and Optics (SPbIFMO); St. Petersburg State Electrotechnical University (SPbETU); St. Petersburg University of Aerospace Instrumentation (SPbSUAI); St. Petersburg State University of Railways (SPbSUR).

The main forms of company interaction with these universities are: the recruiting through internship programs; the organization of student projects through the joint implementation of business tasks; the mentoring system; the scholarship program. The main reasons that encourage the company to interact actively with universities are, in their opinion, the decline in the birth rate and, as a consequence, the reduction in the number of young professionals in the future. Another reason that prompts the company to interact with universities is the discrepancy between the university

knowledge and the employers' requirements.

The interaction of this company with the universities takes place in 4 directions, which are lined up in the single process, starting with the admission of the student to the university. At the beginning, the company conducts the scholarship program for the outstanding students who are selected by the company at the end of the session. The company offers the system of the work with the mentors and the engineers of the company for this group of the students. During this program, the students can get answers on how to succeed, what to look for, what difficulties you may encounter while working in a team. Thus, the company is trying to attract these talented students to the program of student projects. As a rule, a certain business problem is solved in these projects. The teams consist of three or four students, a university teacher and a curator from the company. The results of the student project provide an opportunity to select the best students to the paid internship program, with the results of which the student is transferred to the company staff.

Case 2. The second company (foreign) has been involved in custom development since 1997 and has development centers in Russia, Ukraine, Poland and Argentina. The company recognizes that its main fund is people. Therefore, the company pays the great attention to creating a team. The company interacts with leading universities in St. Petersburg: St. Petersburg State University, SPbETU and SPbIFMO. The interaction itself is built more like a PR company through the presentation of itself at the universities events. The company has open internships for graduate students. Everyone

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can participate in the competition for a vacant position.

The feature of this company is the fact that it does not train interns. Everyone who has entered the intern program and successfully passed the final testing is automatically accepted into the company's staff, in the project in which the internship has taken place.

Case 3. The third company is also engaged in the custom development, but at the same time several years ago successfully implemented its own product. The company has been presented on the Russian information technology market since 2000. Now the company is at such a stage of development, when the main teams on the projects already exist, the projects are in operating mode and can function with existing staff. However, the company is still conducting an active selection of specialists with the good practical knowledge and the experience who can make each team even stronger. Therefore, when working with staff, a point selection of qualified specialists is emphasized.

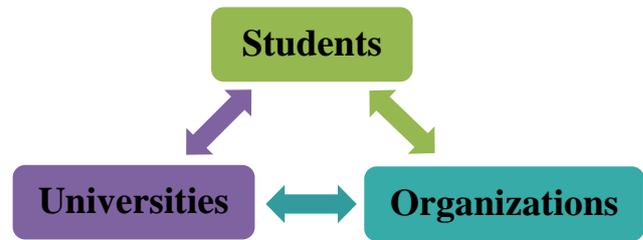
It should be noted that the company has developed the work with the staff. The introductory course is conducted with the beginners. Testing is its essential element. In fact this company has no staff turnover. As a rule, the average period of specialist work in a company is at least 3 years, which is a very good indicator for this field.

Case 4. The fourth, software developing company, specializes in implementing of data management systems. This company is a newcomer (six years) on the market and works mainly with foreign customers. The company is growing and developing very fast, but has no plans to interact with universities in young specialists employing. Because most of company's customer oriented projects require qualified specialists for a short period of time. The company simply does not have time to take newbies and train them in the technologies used in projects.

In order to study the processes of the interaction between the employers and the universities, the empirical sociological research have been conducted. The main objectives of this research were: the analysis of the main technologies of the selected companies interaction with the leading St. Petersburg universities on the employment of young professionals [16]; the assessment of interaction quality as suggested by its main actors (the university, the company, the students); The characteristics of the main activities that can improve quality and effectiveness of the interaction between employers and universities on employment issues and the development of young professionals.

Part of the research consisted of in-depth interviews with managers of four companies in the information technology sector of St. Petersburg [17]. In addition, 168 graduates from all faculties of St. Petersburg State University were questioned.

The research showed that the system of the interaction between the companies and the universities can be represented as a social network [18] with at least three groups of actors: the universities, the businesses and the students (see figure 1).



**Fig. 1: The system of the interaction "University-Organization-Student"**

Each of these groups pursues its own goals and solves certain tasks. For business, an ideal young professional is a graduate student who joined the company and started working immediately. Obviously, this idea is hardly implementable, as training of narrow specialists is not a task of a graduating university. The university is focused on training of socially-oriented specialists with a broad outlook within the chosen direction. What's more, they struggle the problem of underfunding and cannot hire extra specialists who meet business needs as much as possible.

The third side of the interaction process are students oriented to obtaining of practical knowledge, job and stable income in the nearest future. This means they want as much practical skills as possible from the educational process.

Comparative analysis of the experience of the interaction between the companies and the universities revealed three problems. The first one is finding a common language for the effective communication. There is a big gap between business and education in the discourse. This problem becomes acute the moment a company comes to a university in order to launch an affiliate program [19], [20]. The company needs understanding of what is important for the university at the moment, what goals and objectives the educational institution sets for itself, to what applicants the university orients, what kinds of training models are acceptable for the university [21]. The second problem deals with search and organizational support of the persons to take responsibility for this interaction [22]. The third problem the business faces is creation of an attractive HR-brand, channels to attract students for finding of loyal and high-quality personnel [23].

Generally, results of students' questioning match the employers' survey data. Both students and business representatives agree there exists knowledge gap between the university graduates and the organizations' requirements for young candidates. About 30% of the students questioned rated university education vs. current requirements of employing companies as mediocre.

To understand the goals students pursue while interacting with the business on the issue of employment, it is essential to realize the problems graduate students face the moment when they start looking for a job. The most important ones are lack of professional experience (91.3% of respondents), lack of competencies required by the employer (66.2% of respondents), low wages for young professionals (56.5% of respondents), and poor orientation in the employers' market (30.4% of respondents) and the lack of suitable vacancies (21.7% of respondents).

It is noteworthy that students agree that the university is, first of all, a source of the theoretical knowledge. However, in the process of teaching, universities are to know the needs of the employers and constantly focus on them in preparing curricula and forming of professional competencies that graduates should master.

As for the side that should take the initiative in the interaction processes, the students say unequivocally that it come equally from universities (46%) and employers (44%), though the role of the students themselves is also important (10%) (see figure 2).

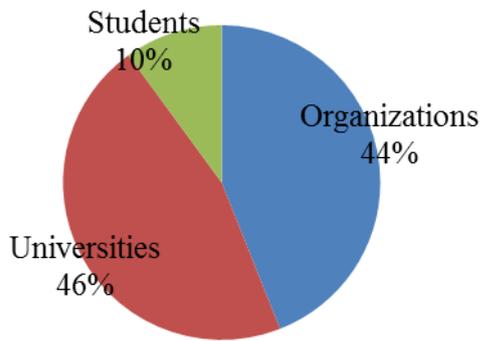


Fig. 2: Interaction Initiators

On the other hand, all the actors of the social interaction have different goals. The research found that companies focus more on the PR of their brand as the best employer, as well as on the recruiting talented specialists. The companies are reluctant to develop university teaching practices, as this form of interaction is ineffective in achieving its goals. The university, in its turn, aims at developing of its brand and its teaching staff's intellectual capital.

It should be noted, that, from the organizations' side, interactions with universities are quite transparent. As a rule, companies actively interacting with universities is active have

a separate employee or even a department that deals with this process. Basically, it is a substructure of either a personal (HR service) or PR department. This is not surprising, because according to the research, the recruitment and the development of the employer's brand are two main goals of the organization in its cooperation with universities. Naturally, the companies where these processes are not so institutionalized, often make HR managers or other employees are forced to deal, among other things, with these issues. Because of this, such organizations doubt if they need to communicate with universities, as they treat such processes as low-effective procedures that suspend main work of the employees who have to sacrifice a lot of time to some non-core tasks.

More than 30% of the students say they do not need help of the university in search and interaction with the employer. However, the majority of the students who have ever been on the internships says that there were universities that organized them (56.3%). Many students know that their university has (56.5%) or does not have (4.3%) a special department that communicates with employers. But, in our opinion, the number of those not having any information about such university body is too large (39.1%). At this stage, we can conclude that the communication "University-Student" is low effective. Students familiar with the work of the university's departments of the interaction with employers rate them on five indicators: 1) the informational coverage of interaction with employers; 2) the employers with whom the department interacts; 3) the opportunity to participate in joint activities with employers; 4) the communication with department staff in the sphere of interaction with employers; 5) the availability of the internships. Of the maximum possible 5 points in the evaluating the work of departments, students rated the availability of the internships (3.8 points). The communication with employees of the department for interaction with employers received minimum points (2.8 points) (see Table 2).

Table 2: The stages of the interaction between companies and universities

Stages of technology	Organization	University	Students	Findings
Problem diagnosis	Knowledge gained vs. knowledge required Demographic decline Selection of talents	Accumulation of intellectual capital	Lack of experience Lack of necessary competencies	The system offers no established processes for joint identification of problems and options for their elimination.
Vision of goals	Get loyal and qualified personnel PR Reduced selection costs	Additional funding U-brand	Professional job High salary	Different vectors of goals, no general agreement on the concept for elimination of organizational problems.
Concept, required activities	Competition Internship Mentoring Scholarship	Fair Teaching State Examination Commission	Internship Joint educational programs Fair (presentations of companies)	Lack of mutual understanding about the structure of the process

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Consolidation and distribution	Take into account the opinion of the universities, in general, and of the students, in particular, and involve them in making of changes and distribution	Not prone to innovations	Take into account the views of students, involve them in making of changes and distribution	Violent introduction in situations that require rapid changes
Institutionalization	Formal structures with well-defined functions	Formal structures with well-defined functions	Formal structures with well-defined functions	
Control, adjustments, evaluation	+	-	-	No two-way communication, no timely corrections

The research findings demonstrate a large gap in the vision of the interaction process between companies and universities. Each subject of interaction that enters the process sets certain tasks he seeks to solve in the information exchange. Moreover, each subject realizes it has certain problems and limitations that can make achievement difficult. In addition, each subject understands how important is the evaluation of interaction effectiveness, and is aware that corrections should be made to gain the maximum effect.

At first glance, the system of interaction “University – Organization – Student” has all the components essential for the interaction. Such network of interactions embraces three well-defined groups of actors each pursuing certain goals and realizing certain problems and limitations in their activities. Every group creates their own metrics to evaluate interaction processes. The evaluations give the actors the base for correction of their activities. However, the results of our research prove that the goals, the evaluations, the adjustments and the vision of the processes in each interaction group do not match expectations of other groups. It turns out that each participant of the interaction acts independently, and this cannot give the maximum effect of such interaction. At present, this is the main communicative problem that must be solved by each member of the interaction network.

The research of employers has confirmed the main hypothesis of our study: well-established cooperation with universities can contribute to efficiency of young professionals employment. The employers having a long-time experience of cooperation with universities confirm that the professional qualities of the graduate students participating in their program are much higher than those of other young professionals. They also note that the search and the selection process itself makes more economic sense than use of external recruitment sources. On this issue employers note only that there are much more difficulties with the interaction process itself.

The results of research draw us to conclusion that an effective system of interaction with universities requires the employer to tackle with several tasks: 1) defining of problems related to the HR-brand policy; 2) setting tasks to be performed by the system of interaction with universities; 3) establishing of communication with the responsible authorities of universities, for correlation between their tasks and the goals of universities; 4) creating a system of the implementing measures; 5) assessing the effectiveness of the interaction; 6) creating a system of the corrective measures.

The system of interaction with universities introduced in

the managerial processes of an organization is to achieve two promising strategic goals: a provision with the qualified personnel, and an increase in the level of the company brand awareness at the labor market.

With defined goals and objectives for the interaction system to be implemented, the company is to compile a list of the supportive universities and faculties, whose interaction may bring most benefits. It is worth proceeding from the university training profiles, as well as from the company's needs. At a different point in time, at a certain stage of the company's development, this list may vary; therefore, constant monitoring of the education system is essential. As a rule, agreements on cooperation and implementation of joint programs are concluded with supporting universities. The network of contacts with universities should be built not only in the region of the company's location, but in other areas, too, especially if the company has an extensive branch network.

The selection of the partner universities should be followed with choosing the interaction strategies effective for the company, depending on its objectives and with regard to risks for each of the parties.

The activities should be planned together with universities, on the basis of the collective forms of the interaction. At the initial stage, it requires:

1. (within the company) to allocate the person(s) responsible for communication with universities;
2. to determine the system for the financing of interaction activities;
3. to establish a system of the information exchange with the universities (communication channels, frequency of contacts, persons responsible);
4. to establish the system of the mutual working visits to the universities (visits of university representatives to the company);
5. to create the information base to store comments on all contacts with the universities;
6. to determine criteria for assessing the quality of the interaction system.

Plan of the company activities in interaction with universities (see table 3).

**Table 3: Plan of the company activities in interaction with universities for the year 2018**

Activities	Goals	Terms	Financing plan, thousand rubles / month
Monitoring and selection of partner universities	Updating the partner contact database	Permanent	Due to fixed assets
Conclusion of cooperation agreements	Empowering the company, developing of the company's HR brand	Permanent	Due to fixed assets
Introduction of specialized educational programs in high school	Training of employer-sponsored students	Permanent	10 395
Involvement of company employees in teaching	Training of business-oriented personnel, improving the education system	Permanent	20 000
Practical training of students, graduate students and university professors in the company	Personnel reserve	Permanent	Due to fixed assets
Participation of company representatives in state examination commissions	Expansion of the database on modern research, selection of promising personnel	May – June	1 000

Companies should pay special attention to the system that assesses the quality of the interaction, since the results of periodic monitoring can preserve employers from many economic and social risks. Its characteristic features include the following: the orientation, the ability of management entities to organize their social relations, the efficiency, the degree of the balance and the compliance with different social norms. In the “organization-university” interaction system, directivity is expressed as the decision-making process of both parties, which, in turn, reliably and adequately reflect the expectations of the second actor. The expectations embrace goals, interests, needs, problem solving, and as adequate correspondence of the available resources to all entering into the interaction processes. For example, if the company wants to hold a seminar for university students, it must realize that the seminar must meet the goals of the students’ educational program, and, perhaps, satisfy some needs of the university (for example, the desire to have the information on some business technology). Also, the company should take into account the capabilities of the university as a platform for a seminar (electronic resources, material support). The orientation is closely related to the ability of subjects to organize the process of the social interaction with each other.

The extent of harmony or balance of relations between the subjects of interaction should account for rights and duties of each actor. In the example of the university-based seminar, the university, for its part, must ensure the safety of commercial secrets, if the nature information to be discussed at the seminar required this.

**V. CONCLUSION**

The main objective of this work, namely, the analysis of interaction technologies between the organizations and the universities in the process of the employment and the development of young professionals and the evaluation of its effectiveness, was achieved through studying the conceptual scientific approaches to understanding of social interaction, analyzing of interaction forms between the organizations and the universities. The paper defines the main strategies and the main social technologies of interaction between the employers and the universities in employment and development of young professionals. The empirical study researched interaction process between the IT companies and

the leading universities of St. Petersburg. The main models for the evaluating the effectiveness of the interaction are defined. The paper also provides the management recommendations for building of the effective interaction between companies and universities, and develops its own model for evaluation of such interaction on the part of the company. The main hypothesis that the steady interaction of enterprises and universities can increase the efficiency of the employment of young specialists has been confirmed. The employers having long-time experience of such cooperation have confirmed that the professional quality of the graduate students participating in their programs is much higher than that of other young professionals. It is also noted that the search and the selection process itself makes more economic sense than use of external recruitment sources.

In addition, the hypothesis is confirmed by the results that characterize the state of the modern training of graduates. The employers and the students note that universities often produce specialists with competencies not relevant to employers at the moment. Accordingly, the work of companies with universities to improve the educational process, the introduction of new standards can, in the long run, cope with the problem of the graduates' knowledge gap and the criteria that employers set for the selection.

There are several related areas of the analysis of the interaction between universities and employers, which could complement the results of this study; e.g., it is necessary to analyze this process more thoroughly from universities in St. Petersburg, which would give a more comprehensive picture of the situation.

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