

# TRANSPARENT INFORMATION ENVIRONMENT: AN INSTRUMENT TO INCREASE CLASSICAL UNIVERSITY EFFECTIVENESS

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## Abstract

Article describes transparent information environment as one of the tools to increase the efficiency of higher education institutions, aiming to create a new system of relations between existing actors in the labour market and the education services market. It is suggested that creation in the region transparent information environment, "tied" to the university leaders would help to attract students, and as a result, good impact on teaching stuff. New indexes describing graduates' employability effectiveness are proposed.

Keywords: Control system, classical university, challenges, transparent information environment.

## 1 INTRODUCTION

In 2010, professor at the Massachusetts Institute of Technology P.Daymond, a professor at Northwestern University in Evanston D.Mortensen and professor at the London School of Economics and political science K.Pissarides (P.Daymond [1], K.Pissarides [2], D.Mortensen [3]) were awarded with the Nobel Prize in Economics "for their analysis of markets with search frictions". They were awarded prize for the development of the theory of search, which is an alternative to the model of demand and supply that dominated the economy for a long time. It is known, that in the field of supply and demand in the labour market there is a problem of information channels inefficiency, so people when searching for a job does not always agree on the first sentence, and are looking for a better job, and the same applies to the employer. As a result, the employer and employee cannot find each other for a long time, despite the fact that it is much in need.

As a result of poor information permeability there is no connection between the employer and graduate, or it occurs too late. In this case, one can speak of such a characteristic as "time delay" of the labor market of a particular region, which is one of the features for the time spent on the job search, along with features such as time to make a decision, the application process, the response time of the employer.

General process of employment includes the time for the decision of employment until its implementation (the signing of the employment contract, the time for negotiations, etc.). Increase in permeability of information between employers and graduates has multiple benefits: 1) increase in the percentage of employment in general; 2) reduction of the job search time by reducing the time to choose a job of the applicant; 3) reduction in job search time by reducing the time to choose a CV for the employer.

The paper presents the attempt to develop mechanisms to improve the functioning of the "vocational education - labour market" system by reducing the time for mutual information retrieval between the employer and the applicant as a part of the employment process.

Successful implementation of such instruments at the regional level would assist classic universities in overcoming the socially significant problems, the solution of which depends directly on the image of the University, like the successful employment of its graduates.

## 2 MODERNIZATION OF THE VOCATIONAL EDUCATION SYSTEM PROCESS

Russia currently is in the process of modernization of the vocational education system. Mainly the education system modernization affects the change in conditions of educational institutions financing in terms of teachers salary. The wage system used to be normalized on the basis of rates and loads, but now the payment must be based on a per capita funding, i.e. funds are allocated based on the students' number in an educational institution.

Normative financing per capita involves refund for educational institution for the provision of standard educational services to each student who has successfully passed the competitive selection for enrolment to state educational establishment of higher education, if this level of education student receives for the first time. Basis for the determination of the ratios of per capita funding of educational institutions at different levels of professional education is the estimated cost of educational services.

For public institutions of vocational education value of the calculated basic norm is guaranteed budgetary cost of educational services, which, in view of the planned figures for admission of students for the next academic year, is subject to mandatory application in the formation of the federal (regional, municipal) budget. Such changes are crisis for educational institutions that must survive until the completion of the reform. Crisis occurs because the previous system adaptation mechanisms under the influence of an environment are no longer applied. Therefore, the crisis is a convenient time for necessary revisions and corrections of system operation purposes, as well as means to achieve them again to raise the efficiency of the control system.

Currently, universities are seeking to keep their teaching staff. The main challenge for educational institutions in Russia now is reduction of teaching staff by tens of percent because of funding cuts on "wages" expenditures. Reduction in per capita funding is due to the decrease in the number of entering higher education because of the demographic decline in fertility in the 1990s and outflow of students in educational mega-cities, such as Moscow and St. Petersburg.

Reduction of staff is highly undesirable for a control measure as management maintain social responsibility principles and increased unemployment among highly qualified personnel would result a negative impact on the region economic development.

At the local level faculties leaders, which are not popular among students, have to "ask" for more time sheets from the university administration not to lay off employees. Consequently, faculties, where the funding situation is more stable, are forced to give time sheets for teachers from other faculties and departments, in order to respect the principles of social responsibility. This involves decreasing of the hourly load for one and increases it to other departments.

### **3 MODERN PROBLEMS OF EDUCATION SYSTEM: HOW TO ATTRACT STUDENTS**

Another aspect of the problem is that the situation with a per capita funding does not let to train students for in-demand occupations. This is resulted from the lack of awareness of popular specialties and professions. Sometimes when choosing future profession, applicants are oriented not to the actual data but the rumours about the prestige or highly paid perspectives. Applicants when choosing an educational institution and future educational specialty are mainly interested in two things: get the higher education document, and the possibility of future employment. Moreover, the second case is much less popular.

There is a category of universities, located in a privileged financial position who can afford to "buy" the experts and further strengthen its position in the educational market, but classical universities it does not fall in this category.

The Russian economy is facing problems that are relevant to many foreign countries: an aging population, the growing productivity gap between sectors, globalization. However, the most urgent problem is personnel imbalance in the labour market, which entails a number of consequences. This is manifested mainly in the structural and hidden unemployment, as well as a low level of youth employment. Marginalization of youth, high unemployment level among young people, lack of demand for graduates in the labour market, structural unemployment when there is a significant number of the unemployed when there are a large number of vacancies - these are the problems the regional economy faces. It is possible to overcome these problems, while ensuring close cooperation between the participants of the labour market by conducting surveys, forecasting skills, improving the content of education and so on. Problems of socio-economic development associated with an imbalance in the labour market could be overcome through the forecasting of quantitative and qualitative components [4, 5].

First of all, classical universities should be able to meet the needs in training for the various types of economic activities provided by the regional labour markets. Perspective long-term directions of development could be classified based on the following sectors:

- sectors with multiplicative effects for related sectors (construction, car industry);

- sectors which are important from the point of view of food supply security and social security (agriculture, forestry);
- key sectors for defence capacity of the country (military-industrial complex);
- new and high-tech sectors which provide innovative development.

Each of the regional economy has its own structure development priorities and perspective labour markets. And classical university, as the leader of the educational process in the region, is designed to make a decisive contribution in terms of human resources needs of the regional economy.

By virtue of this, feature of classical universities is the variety areas of training both technical and humanities, natural sciences and other areas. Part of specialties and areas of training is determined to cope with the demand of economy, and part is designed to meet the needs of the individual in obtaining an education. Thus, the classic university ensures the implementation of both the economic and social aspects of educational activities. So universities can not only meet the needs of the economy and industry in the process of training. And if industry development in the region is weak and it tends to reduce, the classic university is forced to perform the function of social damper, adapting to changes in the environment.

For example, consider the dynamics of individual indicators of socio-economic development of the Republic of Karelia, North-West Federal District and the Russian Federation.

Table 1. Dynamics of some indexes of regional socio-economic development.

Index	Region	2007	2008	2009	2010	2011	2012	2013
Volume index of Gross Regional Product	Republic of Karelia	108,5	101	87,6	104,4	102,2	102	102,5
	North-West Federal District	106,8	109	94,9	104,4	106,1	108,2	108,6
	Russian Federation	107,3	105,6	92,4	104,6	105,4	102,9	106,9
Industrial production index	Republic of Karelia	116,0	97,0	78,5	108,9	101,6	102,0	94,5
	North-West Federal District	106,9	100,6	92,6	107,9	107,7	102,6	99,8
	Russian Federation	106,8	100,6	89,3	107,3	105	103,4	100,4

A comparative analysis of the dynamics of the volume index of GRP and the index of industrial production shows that the values of these indicators for the Republic of Karelia on average, is less than in the North-Western Federal District and Russian Federation in general. This indicates a problem in the economic development of the region, with a permanent character for a long period of time. Therefore it should be concluded that at the time of economic transition, vocational education should follow a balanced policy, and thoughtful actions of the University should be directed not only to the development of perspective economic directions dictated by the labour market, but also to preserve the remaining areas of training, until the there is a demand.

There are various ways to attract students to the university: social infrastructure, visiting professors and lecturers from other universities and countries, job security, research infrastructure, industrial parks that allow students of senior courses to acquire job skills, etc. In this study, the attractiveness of universities will be considered through the prism of employability of graduates in the labour market.

Higher education cannot exist without the entrants. University management in modern terms is the management of attracting applicants factors, in other words, it is necessary to pursue an active career guidance work and to advertise educational institutions by all affordable ways.

Prospective management decision for the university is the creation of a transparent information environment within the region that would improve the effectiveness of information channels between the local educational services market and the regional labor market. Creating of a transparent information environment based on federal-level Web-portal controlled by head Region University, would construct information links between successful educational decisions and the regional economy. These tools, "tied" to the university, would help to attract students, and as a consequence, would have good impact on teaching staff. And if entrants would choose popular and in-demand specialties all these would also result in the balanced development of the region's economy.

Proposed transparent information environment would play the role of regional platform for intersection between the actors of the labour market and the education services market. Information exchange will help to increase the effectiveness in achieving multiple objectives of this new form of information and fill it with new content, new solutions and toolkits.

As it was mentioned above, one of the main criteria for assessing the effectiveness of the university - is how easily and successfully its graduates employ according to educational specialty. One of the factors influencing the rate of graduates' employment is the time spent by them on the job search. Therefore, reducing the search time on the side of the applicant will have a positive impact on the image of the university as a whole.

For example, to reduce the search time of the high school graduate can use information about the demand of certain professions after graduation, which may be available to him at the stage of enrolment. This information can be used in order to avoid a mistake in the educational specialty and the profession by choosing, for example, low-paid or unclaimed job in the future. This information in a convenient and simple way could be provided for the entrant and his parents in the transparent information environment.

Thus, we can achieve one of the goals of transparent information environment from the University of position - increase the attractiveness of regional high school for rationally minded students and their parents and to increase the flow of applicants. For such individuals bloated scratch bubble - an artificially created image of some popular specialties will not be important. They would be interested in the pragmatic criteria: what is the rate of return after graduation, what will be the return of funds invested in the education of the child. To meet their interest, in this case, special indicator can be offered in transparent information environment to explore efficiency of employment of graduates in relevant specialties [6].

This indicator would help to reduce the time to find a job for high school graduate indirectly - by facilitating the choice of popular specialty applicant for enrolment stage. The same circumstance would attract students to the university. Feature of this performance indicator is the employment of graduates in that it takes into account not only the fact of employment, but also the effectiveness of the employment opportunities for graduates.

The mere fact of employment does not matter much - you can massively and quickly find employment for the low-wage position, for example, a janitor, and receive small wage. Next, you can get a good position with a high salary, but it happens that many firms employ only for a trial period, so the total efficiency is really small.

The following indicators are proposed to calculate the efficiency of employment of graduates:

- The share of graduates employed within one year after the graduation of their specialty;
- The share of graduates from the number of graduates employed who have worked more than 1 year at the first workplace;
- Relative wages during the first year of employment (the ratio of graduate wages to the average wage in the region).

The indicator of the effectiveness of graduates employment calculated using such data could be interpreted as a contribution to the work of the University of the gross regional product of the region, since it actually describes the average annual per capita income of the graduate. Thus, the efficiency of employment is estimated on the basis of the financial benefits brought by graduates as personally, and economy of the region where they work, in the form of tax deducted in proportion [7].

This indicator, located in the transparent information environment, can be calculated in retrospect by specialties of the University and presented for applicants and their parents. For them, this figure - perhaps is the most important factor when choosing a higher education institution, so they may be interested in obtaining more accurate and reliable data, which reflect not only the chance of employment with unknown prospects in the first workplace.

For the population the transparent information environment with Internet access, where students and their parents can see all the universities in Russia by regions with the real characteristics of graduates' employment (level, salary, duration) would make science-based decisions on education expenditures. Developing this idea of placing in the transparent information environment relevant and useful information, it is possible to develop indicators that would give not only current, but also forecasting assessment of the effective demand for the profession/specialty in the labour market in the long term.

Universities themselves in a high schools competition as training providers - will also be interested in a more accurate assessment of the employment of its graduates for management decision-making to improve this indicator (contracts with major companies, changing curricula for graduates of a more demanding competences, etc.). Open for everybody performance ranking system of regional universities graduates' employment would allow them to carry out an assessment of its activities and to take science-based management decisions on correcting the trajectories of development.

#### **4 TRANSPARENT INFOEMATION ENVIRONMENT CONCEPT: POSITION OF THE UNIVERSITY**

Experts in the field of analysis of a transparent information environment of the labour market point out that the main purpose is providing a stable connection between supply and demand in the labour market [8]. The relevance of the emergence and development of a transparent information environment of the labour market is due to several factors.

Firstly, the presence of a huge amount of information on the labour market, like the statistical data on trends of the labour market, workforce skills, jobs to the data requirements to the level of education and training, wages and career prospects in various kinds of economic activities, sectors , professions. Individuals searching for job can also find comprehensive information on how to find work (search engines). The participants of the labour market who seek to improve their skills, may find information about the various available educational courses and refresher courses.

Secondly, labour market information is "raw", it should be broadcasted to various user groups in an accessible form to meet their needs.

Thirdly, in the transparent information environment the role of "intermediaries" is important. They act as communication tools and provide data to users in the form of brochures, maintaining sites and portals, volumes of statistics and analytics.

There are many interpretations of the term "information environment of the labour market":

- 1) the collection of any information about the size, labour market conditions or any part of the labour market, methods of operation of part or all of the labour market, the challenges, opportunities that it provides, and intentions related to employment or aspirations of those who are part of the labour market [9];
- 2) the collection of information that includes any operational qualitative and quantitative information about the labour market, which helps actors (participants) of the labour market be informed, plan, make choices and take decisions related to business goals, career planning and training, education and training offers, search for jobs, hiring, management solutions and investment strategies related to human resources [8];
- 3) the collection of descriptive and statistical information on occupations, wage levels, unemployment rates, surveys of employment, education and training, economic trends and conditions of the labour market [10];
- 4) the scope of information on trends and labour market conditions, review of occupations and wages, competencies, requirements for a wide range of occupations and other information that helps you make decisions about doing business, choosing a career path, training and job search [11];

- 5) a set of tools based on common rules and approaches that contribute to overcoming the lack of information on the labour market/

A transparent information environment of the labour market is a set of interrelated subsystems, providing data collection, analysis and interpretation of information about past, current and future state of the labour market for individuals, employers, representatives of the authorities and the education system.

The role of transparent information environment for society is that it:

- Contribute to decisions on reallocation of labour across regions and sectors of the economy;
- To increase the integration of the new labour market entrants, including migrant workers and graduates of educational institutions in the transition from education to the labour market;
- To practice a successful recruitment of employees for companies in the provision of accurate information about qualifying the workforce trends of the labour market, the competences of employees, education requirements;
- Facilitate decision-making on management of human resources and investments on the basis of reliable information;
- Use of the available information on the labour market in terms of strategy of personnel policy organizations;
- Make decisions in the field of training of employees, training, and creation of training courses for adults;
- Determine the competence demanded for those who intend to seek employment and for those who are already employed;
- Contribute to finding work that best meets the qualification level of people, regardless of their education and training;
- Take into account the forecasts of development, changes in the conditions of the labour market over time, subject to the successful functioning;
- Improve the quality of vocational education and training;
- Adjust educational programs over time to changes in the needs of the labour market (forecast-oriented training programs);
- To obtain information on social security (for example, regulation of holidays childcare), the certification of education received abroad, the recognition of qualifications when changing professions, etc.

The main aim of a transparent information environment of the labour market is to provide answers to users' questions. Education major issues in a transparent information environment of the labour market will be [11]:

- How and for what specialties train graduates?
- What changes in training programs should be done in preparing students to meet the requirements needs of employers?
- What the skills are most in demand in the labour market now and will be in demand in the future?
- Should we focus on career counselling and school students?

Ideally, information on the labour market should play an important role in the system of education and training in the following areas:

- the alleged training programs
- curriculum development
- access to information about careers and education to build a career path

Curricula of all educational institutions are designed to train individuals for employment, and programs such as engineering, for example, must meet the current and future market needs for skills. Information about the labour market, changing occupations and industries related to the basic/essential skills, literacy, numeracy, specific technical skills needed in the field of activity - all this information can help schools offer training programs to change to reflect the needs of the market.

Such changes - a complex process due to the fixed costs of equipment, facilities, training of teachers, etc., so that the changes can be gradual and smooth. It is important, however, that training reflects the needs of the labour market in order to remain competitive in the global market. Detailed information about the skills in demand should be an important contribution to the development of training programs, the creation of educational competencies of the subject and the results for a particular course. Finally, schools can serve as the primary mechanism for training young people career planning, skills that will help them navigate the labour market in the future.

Foreign experience of the functioning of a transparent information environment of the labour market shows that the information environment is "tied" to the authorities, or think tanks, who are interested in development of relations between the participants of the labour market. But regional university which has a significant impact on the regional economy can act as the chief translator.

For example, the Petrozavodsk State University partially implemented similar measures. There was a need for the development of the tourist industry - the Department of Tourism was opened. The economy is growing - there is a need for mining industry expertise - the University opened the Faculty of Mining and Geology. There is a demand for IT-industry professionals so there is training at a high level.

But to enhance the effect is necessary to create a system for informing - transparent information environment. Creating a transparent information environment will be focused on the construction of information links between successful educational solutions and economies of the region. Also, it will increase the efficiency of the existing system of interaction of the labour market and the education services market. Transparent information environment will be here to act as a tool to enhance the interaction of the labour market and the education market.

## 5 CONCLUSIONS

Transparent information environment is one of the tools to increase the efficiency of higher education institutions, aiming to create a new system of relations between existing actors in the labour market and the education services market.

Creation in the region transparent information environment, "tied" to the university leaders will help to attract students, and as a result, good impact on teaching staff. And if there will be popular specialty it will cause balanced development of the region's economy. Therefore, effective judicious management solution for the university - a transparent information environment within the region is boosting the orientation of the population on the local and regional market of educational services and the labour market.

The introduction of a transparent information environment at the regional level under the supervision of the leading University will increase the attractiveness of university disciplines; give reliable information on the employment needs of today and in the future, thereby increasing acceptance in high school.

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