

will be calculated for the condition of trend progress limitations. The modular technique is based on individual educational trajectory if a large resource of modules is available. It provides the possibility to transform curricula quickly, in this way reducing information uncertainties in labour market management.

Let us enumerate the university benefits expected from implementation of the project: minimization of graduates' adaptation period for the labour market requirements; transformation of curriculum variable part taking into account the professional requirements (internships in the industry); implementation of most effective ELR.

It should be noted that cost-reduction of new ELR development (that do not give any new information to students) increases the effectiveness of university financial and operational activity saving its resources. It makes possible to choose the best option in network cooperation based on target function:

$$Q = \sum_{m=1}^{n_Q} q_m \rightarrow \min \quad (1)$$

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The optimal option is that with the least value of the target function:

$$Q^* = \min(q_1, q_2, \dots, q_{n_Q}) \quad (2)$$

Management of students' individual educational trajectory development based on scientometric research in the course of university network cooperation will contribute to competitiveness of:

- universities on the global market of education services (development of graduates', post-graduates', doctoral students' research competences);
- industrial enterprises in the market of import-substituting products (more effective staff training);
- areas by means of extending universities' activities in the market of educational resources.

Conclusion: Management of students' individual educational trajectories using credits of discipline modules developed in different universities based on the results of scientometric research is an important factor of innovative development for all interested parties to set clear priorities and build effective corporate teams.

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Training of Specialists Using Network Forms of Educational Programmes

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The article discusses the features of implementing the network forms of educational programme. A functional model of interaction using the network forms of learning, the basic characteristics of the training network forms, their components and tasks are presented. The sequence of training process on the basis of the network of educational programmes and the possibilities of their implementation at the profile departments are considered.

Key words: professional training, network forms of educational programs, network forms of learning.

At the present stage of social and economic development of the country new strategic tasks are set for the higher educational system. The decree of the President of Russia No. 599 and the Resolution of the Government of Russia No. 211 are directed to inclusion of not less than five Russian universities in the first hundred leading world universities list according to the world rating of universities by 2020 [1, 2]. According to the Federal law on education [3], the network form of educational programmes implementation provides an access of a student to the resources of several organizations including foreign ones which carry out educational activity, and also, if necessary, to the resources of other organizations.

There is no unambiguous determination of «the network form of education» today, however, the specialists of the Center of information and innovations of The Open University Business School consider that network education is based around educational communities and interaction of educational and other organizations that expands access out of limits of educational space and promotes an increase in training efficiency.

In case of the network forms of education, a number of the researchers [4] consider information and communication

technologies determining; by means of these technologies not only pupils, but also their works on joint creation of educational resources interact in the educational community with sharing responsibility among them.

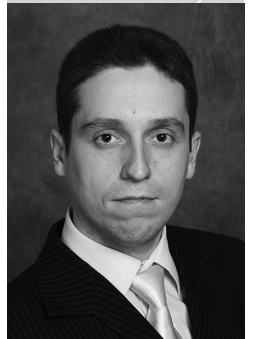
According to the education law, the following organizations can participate in the network form of educational programmes implementation:

- the educational organizations, i.e. the organizations carrying out educational activities as the primary task with the license and according to the purposes and tasks for achievement of which such organization was founded;
- the organizations carrying out educational activities and the organizations carrying out educational activities as the secondary task with the license including the foreign educational organizations;
- the other (resource) organizations, such as: the scientific and medical organizations, organizations of culture, sports, etc., i.e. possessing necessary resources for education, training, etc.

Network interaction is a steady, organizationally arranged interaction of educational organizations and other organizations to increase efficiency of



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cumulative potential by education system, optimize used resources, and assure quality of graduate professional training conforming to labour market requirements.

The scheme of network interaction is given in Fig. 1, the functional model of interaction for network forms of education is shown in Fig. 2, the main characteristics for network form of education, its components and tasks are listed here.

The network educational programme is an educational programme which is jointly realized by educational, scientific, production, and other organizations on the basis of the agreement with the single curriculum. The organization of educational process for the network educational programme is characterized by the following:

- the purposes, tasks, content of the network educational programme, order of its implementation are regulated by the agreement or treaty which is signed by all partner organizations;
- organizers, partner organizations responsible for specific modules (disciplines, cycles of disciplines) are specified in the curriculum of the network educational programme;
- the basic higher education institution enrolls to the network programme of education; it coordinates actions for realization of network educational programmes, controls implementation of the curriculum, organizes final assessment of the students;
- the diploma of basic higher education institution is issued following the results of education; modules, disciplines, practical training sessions which the student has passed in other higher education institutions or organizations are listed in the appendix to the diploma (with indication of quantity of the academic credits);
- the general duration of education in basic higher education institution shall constitute at least 40% of the standard

term (labor input) of all educational programme development;

- the development term of the network educational programme cannot exceed the development terms of the main educational programme of the corresponding direction;
- two curricula for two higher education institutions where a number of subjects are mutually set off are formed in case of education in the programme of joint or double diplomas; and a number of disciplines can be implemented in common (research work, final qualification work, etc.).

In case of educational organization within network interaction, the corporate customer participates not only in forming the social order, but also in educational process; it develops the curriculum of education for the specialists according to their own requirements together with the educational institution. The variable part of the professional educational programme is at the same time formed taking into account the requirements of the corporate customer, the required competences and studied disciplines are determined. These tasks are not always easily implemented by the corporate customer; organization of the basic departments at the enterprise is most effective. This form of cooperation for the educational environment of the Russian Federation is not new. The process of department creation of the educational organizations at the corporate customer is supported by the order of the Ministry of Education and Science of the Russian Federation on 8/14/2013 No. 985. The basic departments allow building any models of cluster interaction uniting at the same time all the participants and considering their interests. Education of specialists on the basis of the agreement on network interaction between the educational organization and enterprise allows carrying out educational process without violating legislative arrangements within the Federal State Educational Standards 3+, for example, for such

Fig. 1. Network interaction scheme

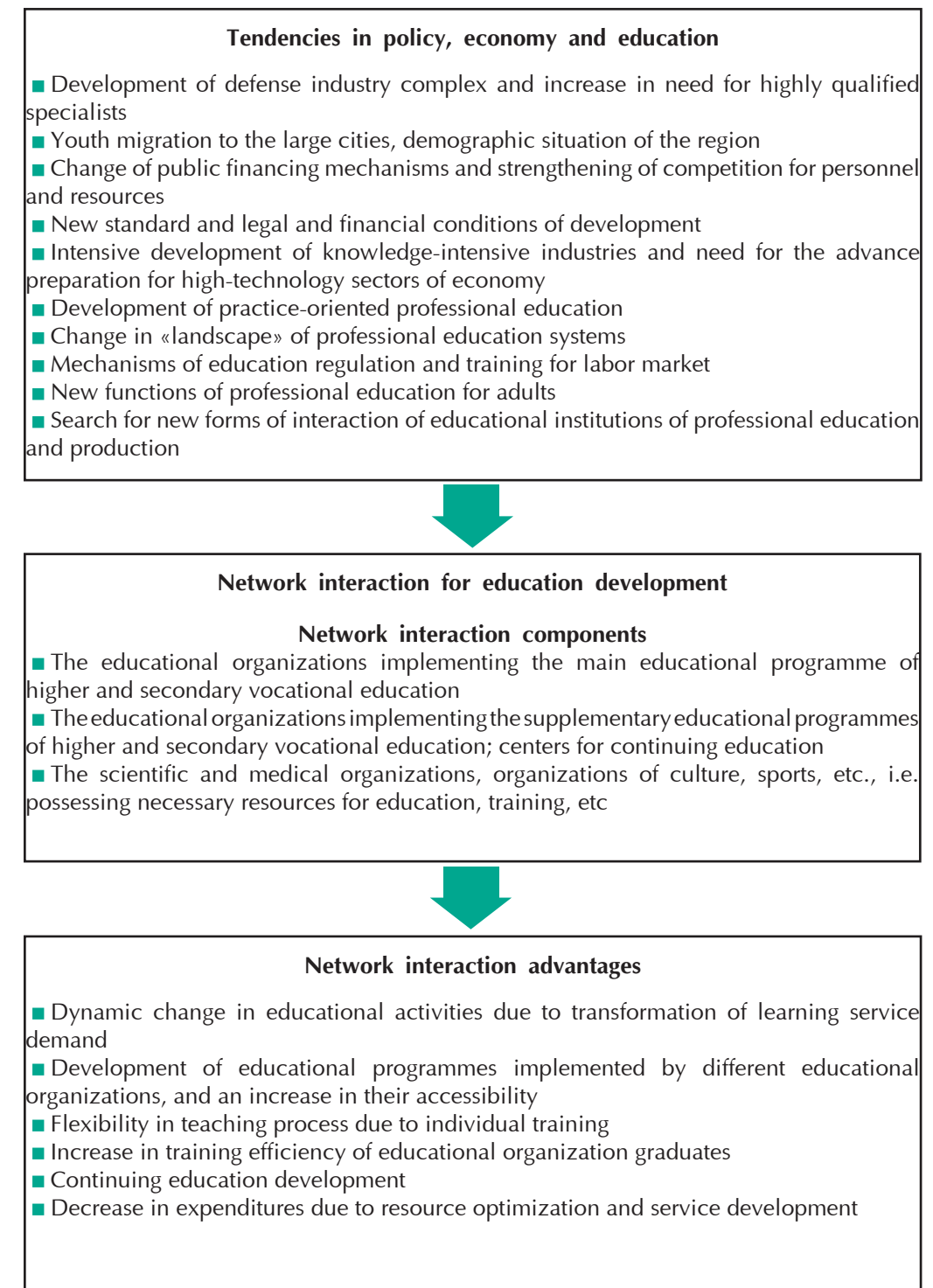
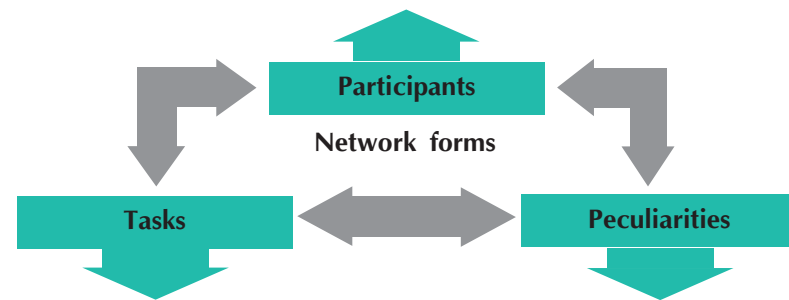


Fig. 2. Functional model of interaction for network forms of education

<ul style="list-style-type: none"> the educational organizations, i.e. the organizations carrying out educational activities as the primary task with the license and according to the purposes and tasks for achievement of which such organization was founded. 	<ul style="list-style-type: none"> the organizations carrying out educational activities and the organizations carrying out educational activities as the secondary task with the license including the foreign educational organizations. 	<ul style="list-style-type: none"> the other (resource) organizations, such as: the scientific and medical organizations, organizations of culture, sports, etc., i.e. possessing necessary resources for education, training, etc.
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- education of the personnel with the unique competences demanded in the labor market of priority sectors of industry and regional economy;
- improvement of education quality due to integration of the partner organization resources for the priority sectors of industry, cross-industry, and regional development according to the international standards;
- implementation of the best domestic and foreign practices in the educational process for development of applied research for needs of industry and region.

- it is mainly organized for perspective (unique) educational programmes, as a rule, of interdisciplinary nature to train personnel for large industrial, scientific, and other projects;
- it allows developing unique competences demanded, first of all, in high-growth industries of economy;
- it provides a possibility to use educational organization resources, material and personnel resources of other organizations (scientific, production, medical, organizations of culture, etc.) in educational activities.

majors as: 11.03.02 «Infocommunication technologies and communication systems» and 11.03.03 «Design and technology of electronic means».

The system of network interaction will allow uniting all resources of the educational and other organizations participating in implementation of

the educational programmes, such as personnel, material, information, social, educational and methodical, etc.; it will promote improvement of graduates professional education quality conforming to the requirements of modern labor market.

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