

**CLUSTER AS A MECHANISM OF UNIVERSITY STUDY PROGRAMS ADJUSTMENT  
TO THE REQUIREMENTS OF THE CURRENT LABOUR MARKET**

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*The article deals with the problem of a mismatch between young professionals' knowledge, skills, and practical experience and the requirements of modern labour market. It describes the situation when university programs do not fully meet the requirements of the modern labour market. The following reasons causing this problem are listed: a lack of communication between universities and employers; a lack of financial support and problems with the proper educational resources and infrastructure of universities (specialized training facilities); and a lack of access to specialized internships for students. This paper suggests that closer cooperation of universities and representatives of the labour market in the form of cluster interaction might be an efficient solution to the problem of imbalance between employers' needs and employees' capabilities.*

**Keywords:** *cluster, study program, educational system, labour market requirements, employers, employees.*

The modern world is changing very fast. We see a dramatic increase in the amount of information in all spheres of life, which is estimated as 35 % on average annually [1]. Nowadays, emerging new economic activities and new technologies result in numerous additional requirements to the labour force. Moreover, there is a growing trend towards replacing humans with machines for routine tasks, which means that humans only must focus on "new" tasks. At the same time, as H. Lauder and K. Mayhew mentioned, "there is a significant share of graduates who struggle to find good jobs, while employers say they cannot find the people with the skills they need" [2, p.1]. Thus, it seems that the educational system sometimes cannot cope with these fast changes and fully captures specific labour market requirements. As a result, young professionals may not have corresponding knowledge, skills, and relevant practical experience meeting all the requirements of modern labour market. If this problem remains unsolved in the future, it may cause an increase in unemployment, on the one hand, and a decrease in the productivity and efficiency of firms, on the other.

The situation when university programs do not fully meet the requirements of the modern labour market might stem from the following reasons: a lack of communication between universities and employers; a lack of financial support and problems with the proper educational resources and infrastructure of universities (specialized training facilities); and a lack of access to specialized internships for students. This paper suggests that closer cooperation of universities and representatives of the labour market in the form of cluster interaction might be an efficient solution to the problem of imbalance between employers' needs and employees' capabilities.

The main idea of the proposed solution lies in the specifics of cluster interactions. According to Michael Porter, "clusters are geographic concentrations of interconnected companies and institutions in a particular field" [3]. Numerous related industries and other entities ensuring competition are covered by clusters, including specialized resource and infrastructure providers,

customers, “manufacturers of complementary products”, “industries related by skills, technologies, or common inputs,” and various institutions (“universities, standards-setting agencies, think tanks, vocational training providers, and trade associations”) that deliver various kinds of educational and technical support [3]. Probably the best-known example of a cluster is Silicon Valley. As M. Ferrary mentioned, such firms as Apple, Google, Intel, HP, Oracle, Facebook, NVIDIA, research, and educational institutions (Xerox Parc, SRI; Stanford, Berkeley, and San Francisco Universities), and other institutions (legal support, venture capital) [4] compose this cluster.

On the one hand, a cluster means closer cooperation and interconnection between all its participants. In a cluster, a university usually plays a role of a research and educational centre [5]. For universities, being part of a cluster would mean a continuous and systemic dialogue (in a form of cluster meetings or specialized cluster projects) with the real sector of the economy. In the course of interaction, the labour market can identify its needs and provide universities with this information; in turn, universities can adjust their study programs and, thus, new demand of the labour market would be satisfied effectively.

On the other hand, clusters can increase technical capabilities of universities by providing additional financial and information support for creation and functioning of specialized study facilities – study laboratories (chemical, physical, medical, robot-technical, etc.) and computer classes with specialized software or useful simulations. Firstly, universities can consult with labour market representatives within a cluster and examine their specific needs for particular skills, experience, and competencies of students to design specialized study facilities properly. Secondly, universities may obtain additional funding for creating specialized study facilities. Funding might be, thus, obtained in two different ways: using special cluster project funding [6] or getting direct financial support from individual interested parties (firms, organizations, institutions). As a result, specialized study facilities will provide future graduates with valuable skills, experience, and competencies, making them a better match for modern employers’ requirements and, thus, more competitive.

Another important aspect of closer cluster cooperation between universities and employers is employers’ interest in participating in the personnel training process that may give more opportunities for students in terms of internships. Within a cluster, it is easier to establish long-term and stable contacts with employers regarding student internships. Internships can become more frequent (at least semi-annual). During internships in cluster-member firms, students can acquire additional specialized skills and relevant practical experience – the most essential issue that they usually lack during their first job search. Moreover, this internship mechanism may provide students with a position in a particular company even before graduation, if one shows his/her best side during an internship.

Thus, the proposed solution seems to be effective, because it may help to achieve the goal: after graduating from the university, future young professionals, with the help of modified content of study programs, modern specialized study facilities, and more frequent internships, are more likely to have up-to-date knowledge, skills, competencies, and relevant practical experience, that tend to meet current requirements of the labour market of cluster. Moreover, this solution tends to be efficient, because it will decrease costs on additional personal training and decrease unemployment among young professionals, increasing their competitiveness in the labour market. Furthermore, the graduates become more efficient professionals themselves. Thus, all the involved parties (universities, employers, and graduates) would benefit from the proposed

solution: employers would receive more efficient staff; universities would become more effective in performing their main function; graduates would be more competitive in the labour market having relevant skills, competencies, and work experience.

There could be an objection that cluster creation seems to be a complex process requiring much time, resources, and effort. It is true to some extent. The process of cluster creation can be sophisticated and time-consuming. Although, the most necessary issue is the willingness of all interested parties (including universities and businesses) to listen to each other, understand each other's needs, and take actions aimed at increasing their cooperation. Universities and all other cluster members who are interested in hiring well-educated, skilled, competent, and experienced young professionals should be engaged in the implementation of the proposed solution. This solution tends to be feasible because clusters are successfully working all over the globe [7], they are structures that enable closer cooperation of all cluster members, resulting in a synergetic effect of this interaction, innovation development, and economic growth. Moreover, it can be argued that there might be no desire on the part of the business to participate in cluster. The main reason for such behaviour seems to be a lack of understanding of the cluster concept and its benefits. According to the vast international experience of cluster functioning, there are significant advantages of such organisational structure of cooperation. Klyunya et al. highlight the following advantages for cluster members: increase in innovative activity and economic potential; growth of competitiveness, rise in production and sales volumes, increase in labour productivity, boost in R&D for new technologies, the acceleration of innovation commercialization, growth in real investment, etc. [8]. These benefits should be explained to potential cluster members.

There seem to be several alternative solutions to the problem, such as different types of study programs in the context of employability: bridging programs, "which help academically less prepared students – sometimes with previous work experience" [9] to perform better at university; dual study programs, meaning that universities cooperate with firms to design courses that "combine theoretical, academic learning and practical, vocational learning" [2]; and life-long learning programs. However, these educational programs, if designed without employers' participation, still may not fully meet the requirements of the modern labour market. Nonetheless, these programs could still be considered as components of the proposed solution, thus, being more effective, when systemically implemented as cluster projects in course of university-business cooperation. One can argue that the decision to change the content of university programs should be made by the educational authorities (Ministries). Nevertheless, it seems that the educational authorities could be less effective and more bureaucratic in dealing with rapid changes in labour market needs. Another alternative solution might be use of public-private partnerships (PPP) and creation of Employers' Councils at universities. It can be an effective solution, but mechanisms of PPP are already functioning in clusters and Employers' Councils might be considered as a formal organizational structure of cooperation between universities and employers within a cluster. Therefore, the proposed solution tends to be systemic, and most alternative solutions could be considered as its parts.

The main goal of the paper was to propose the solution to the problem arising from the mismatch between the content of university programs and the requirements of the modern labour market. From the discussion above it can be concluded that closer cooperation of universities and representatives of the labour market in the form of cluster interaction tends to be an efficient solution. Thus, after graduating from the university in cluster, young professionals would have relevant skills, competencies, and practical experience that are likely to meet the current requirements of employers. This solution seems to be both effective and efficient because it would help to adjust universities' study programs to the requirements of the current labour

market, decrease costs of additional personal training, and decrease unemployment among young professionals by increasing their competitiveness in the labour market. Furthermore, graduates would become more efficient professionals themselves. Thus, it is important for governments, businesses, universities, and other interested parties to take a maximum advantage from the cluster cooperation.

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#### КЛАСТЕР КАК МЕХАНИЗМ АДАПТАЦИИ ОБРАЗОВАТЕЛЬНЫХ ПРОГРАММ ВУЗОВ К ТРЕБОВАНИЯМ СОВРЕМЕННОГО РЫНКА ТРУДА

В статье рассматривается проблема несоответствия знаний, навыков и практического опыта молодых специалистов требованиям современного рынка труда. Описывается ситуация, когда университетские программы не в полной мере соответствуют требованиям современного рынка труда. Перечислены следующие причины, вызывающие эту проблему: отсутствие коммуникации между вузами и работодателями; отсутствие финансовой поддержки и проблемы с надлежащими образовательными ресурсами и инфраструктурой вузов (специализированных учебных заведений); и отсутствие доступа к специализированным стажировкам для студентов. В статье высказывается мнение, что более тесное сотрудничество вузов и представителей рынка труда в форме кластерного взаимодействия может стать эффективным решением проблемы дисбаланса между потребностями работодателей и возможностями работников.

**Ключевые слова:** кластер, учебная программа, образовательная система, требования рынка труда, работодатели, работники.