OPPORTUNITIES FOR VOCATIONAL TRAINING AND TRAINING IN INVESTMENT PROJECT MANAGEMENT IN BULGARIA

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Introduction

Arguably, having the necessary knowledge, skills and competences in the field of project management is a prerequisite and a must towards professional management. However, in the context of studying the professional management of projects, we need to pay attention to several key factors that define its status and development potential, particularly:

- institutional strengthening of the position of the project manager or setting minimum requirements for the position implementation, in accordance with Bulgarian law;
- ensuring necessary conditions for professional development and training in the field of project management or the role and place of the educational system in this context.

In this respect, the objective of the present study is examine the opportunities for vocational training and training in the field of project management, more specifically management of investment projects in Bulgaria and offer recommendations for improvement of the above training.

1. Specifics, reasons and job description of the “Investment Project Manager”

The fact that project management has taken off over the past few years, particularly in the context of a growing construction industry (since the beginning of the past decade) and the implementation of a series of large-scale projects involving construction of residential and holiday complexes, hotels, administrative buildings, shopping and entertainment centres, tends to promote the role of the project manager even more and requires recognition of this position at an institutional level.

Information about the job positions in the field of project management is detailed in the National Classification of Occupations 2011 (hereinafter referred to as NCO-2011)\(^1\), which defines the structure of occupations and job positions in the Republic of Bulgaria. Based on this, it becomes clear that as of the end of 2014, there are 3 job positions in the field of project management (1213 5046 Project Manager; 1323 6011 Investment Project Manager; 2421 5027 Manager of projects), identified in 2 classes:

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\(^1\) See List of occupations in the National Classification of Occupations 2011. Annex 4 to Order No. RD01-931/27.12.2010 with the enacted changes in NCO-2011 since 01.01.2014.
Class 1 - Managers and Class 2 - Specialists. There are also other positions related to project work (2422 6004 Programmes and Projects Expert, 2422 6007 Assistant in the management of European Projects and Programmes, 2512 5006 IT Projects Manager), concentrated in Class 2 - Specialists. Each of the above positions requires minimum education and qualification level.

Ten education and qualification levels have been specified for the purposes of the NCO-2011, with minimum required education and qualification degree of “professional Bachelor’s degree in ...” (for level 5) or “Bachelor’s degree” (for level 6) for the above-mentioned occupations. The herein specified education and qualification levels have been formulated in line with the Higher Education Act.

The present study will focus mainly on the position of “Investment Project Manager”, approved by Order of the Minister of Labour and Social Policy No. RD01-426/30.05.2011, effective since 01.06.2011.

The fact that this job position belongs to group 1323 “Managers in the construction sector” predetermines the main functions of the people with such occupation. Managers in the construction sector are in charge of the following activities: to draft architectural plans and specifications; coordinate the human resources and the supply of materials, machines, facilities and equipment; negotiate with building owners, developers and subcontractors in order to ensure the timely implementation of the project within the set budget; prepare bids and contracts; ensure compliance with the civil legislation and performance standards, quality, costs and safety; organise the presentation of construction plans to the respective local authorities; manage the contracted construction works or specialised construction services carried out by subcontractors; ensure supervision of construction by the respective competent authorities; draft and manage budgets, control expenditure and ensure the efficient utilisation of resources; control recruitment, training and work of staff and subcontractors, etc.

The basic functions of project managers (outlined above) are further specified and detailed by job descriptions that are being drafted, approved and applied in the organisations.

Regarding the establishment of the position of the project manager, we can draw the following basic conclusions:

- The position of “Investment Project Manager” is a consequence of the active presence of this activity in the construction and investment process, despite the fact that it was not established until 2011;
- The fact that this position is assigned to group 1323 “Managers in the construction sectors” indicates that project managers share similar competences with posts such as “Head of Construction Site”, “Head of Construction”, “Manager of Construction Group”, “Chief Construction Engineer”, etc.
- The minimum required education and qualification level for taking this position is 6 (EQD “Bachelor’s degree”), which we believe is insufficient, although it is in line with the requirements of the international organisations\(^2\) (in the context of

\(^2\) For example, the certification programme of the International Project Management Association (IPMA) does not set specific requirements with regard to the degree acquired, whereas the programme of the Project Management Institute (PMI) accepts high school education or higher education - Bachelor’s degree.
the certification programmes). As can be seen, the work of the managers requires different competences, which means that a higher educational degree is necessary.

In order to improve the job structure in the field of investment project management and increase the professional competence in this area, we believe it is necessary to set higher job requirements for people who wish to take this job, at least at an organisational level. This, on the one hand, will stimulate project managers to improve the knowledge, skills and competences (technical, economic and managerial) they already have, most of which are (still) the result of long-term experience, rather than professional qualification acquired. More importantly, higher job requirements can possibly limit recruitment failures for the position of “Investment Project Manager”.

2. Vocational training in construction jobs and specialties

On the other hand, acquiring a professional qualification as a “combination of professional competences and general education knowledge and skills necessary for their formation” is ensured by the system of vocational education and training. The way this system functions and develops is governed by the Vocational Education and Training Act (VETA). According to VETA, (Article 6(1)), vocational education and training is delivered in accordance with professions and specialties included in the List of vocations for vocational education and training (LVVET).

The List gives evidence of 26 programmes (in total) in the construction area (from the “Construction” professional field) offering training and qualification in the following 8 professions (“construction machinery”; “builder”, “builder-fitter”, “fitter of water supply and sewage systems”; “road-builder”; “furnace constructor”; “construction assistant” “assistant road-builder”). Those who successfully complete the training acquire I, II or III level vocational qualification, based on the programme. The same area of education (“Architecture and Construction”) also includes specialties such as “Architecture, Urban Planning and Surveying” in number, divided into 3 professions (“surveyor”, “restorer-contractor”; “technician-restorer”). Graduates acquire respectively SPC II or III depending on the specialty.

There are no programmes in the field of investment project management because of the higher educational degree required for this position. Despite this fact, training in the construction profession and specialties provides fundamental professional instruction in the field of the science, technology and methods for construction and maintenance of buildings and facilities, their installations and also roads, transport facilities, hydraulic engineering, irrigation facilities, water supply and sewage systems, etc.

According to the Vocational Education and Training Act (VETA), the acquisition of vocational qualification in the vocational education and training system is regulated

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4 List of vocations for vocational education and training, approved by virtue of Order No. RD 09-413/12.05.2003, last update by Order No. RD09-74/20.01.2014.
by framework programmes approved by the Minister of Education and Science. These programmes are specified by state educational requirements (SER) for acquiring qualification in professions, adopted by the Minister of Education and Science and coordinated with the respective ministries and institutions. The training syllabi and curricula are developed in compliance with SER for acquiring qualification by trainees.

The regulations for acquiring qualification in the different construction professions (including “surveyor”; “construction technician”, “builder”, “builder-fitter”; “fitter of water supply and sewage systems”; “road builder”) define the respective state educational requirements (SER), including the necessary professional competences of the trainees in the field of vocational education and training.

Vocational high schools in construction, vocational training centres and universities play the most important role in the acquisition of professional competences (professional knowledge and skills).

**Vocational high schools** offer vocational education with acquisition of II level vocational qualification, with a duration of four years, or level vocational qualification with a duration of four or five years. They admit students who have completed their primary education or students who have completed VII grade. Vocational high schools can also offer vocational training with acquisition of I, II and III level vocational qualification for part of the occupation, as well as vocational training awarding IV level of vocational qualification by Order of the Minister of Education and Science, if they meet the state educational requirements.

Based on our study of the conditions for vocational education and training in vocational high schools in Bulgaria, we can draw the following important conclusions:

- There are a total number of 33 vocational high schools in Bulgaria that offer training for acquiring vocational qualification in “Architecture and Construction” educational field, including: vocational high schools in construction, architecture and geodesy /10/; vocational high schools in construction /6/; vocational high schools in construction and architecture /3/; other vocational high schools /14/.

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6 Art. 17(3) of the National Education Act (promulgated in SG, issue No. 86/1991, last amendment and supplement in SG, issue No. 61/2014).

7 See Regulation No. 35 of 01.07.2010 on acquiring qualification for the vocation of “Surveyor”, promulgated in SG, issue No. 67 of 27.08.2010, effective as of 27.08.2010, issued by the Minister of Education, Youth and Science; Regulation No. 33 of 01.07.2010 for acquiring qualification for the vocation of “Construction Technician”, promulgated in SG, issue No. 67 of 27.08.2010, effective as of 27.08.2010, issued by the Minister of Education, Youth and Science; Regulation No. 5 of 09.01.2012 for acquiring qualification for the vocation of “Constructor”, promulgated in SG, issue No. 9 of 31.01.2012, effective as of 31.01.2012, issued by the Minister of Education, Youth and Science; Regulation No. 7 of 09.01.2012 for acquiring qualification for the vocation of “Installer of Water Supply and Sewage Systems”, promulgated in SG, issue No. 10 of 03.02.2012, effective as of 03.02.2012, issued by the Minister of Education, Youth and Science; Regulation No. 8 of 09.01.2012 for acquiring qualification for the vocation of “Road Constructor”, promulgated in SG, issue No. 10 of 03.02.2012, effective as of 03.02.2012, issued by the Minister of Education, Youth and Science.

8 Art. 19(3) of the Vocational Training and Education Act (promulgated in SG, issue No. 68/1999, last amendment in SG, issue No. 98/2014).
• The above institutions are relatively evenly distributed by administrative areas (with the exception of Kyustendil). They are primarily concentrated in district cities (with the exception of Lovech), thus actually covering the territory of the entire country. The largest concentration of educational establishments is observed in the districts of Stara Zagora /4/, Veliko Tarnovo /3/, Pazardzhik /2/ and Plovdiv /2/, which is due to their central location;
• The most widely practiced training is to acquire III level vocational qualification as “Construction Technician”, in the following specialities: “Construction and Architecture”, “Transport Construction” and “Water Engineering”, followed by training for acquiring III vocational qualification for the profession of “Surveyor”, in the degree subject of “Geodesy”; for acquisition of II level vocational qualification for the professions of “builder-fitter”, in the degree subject of “Dry Construction” and for the professions of “Constructor”, in “Internal Lining and Flooring” degree subject;
• There is also a number of vocations and/or specialities, for which no training is offered. These include, for instance: “Reinforcement and Concrete”, “Painting works”, “Construction Carpentry”, “Construction Tinsmith” and “Roofing” (for acquiring II level of vocational qualification for the occupation of “Constructor”); “Concrete structures” and “Metal Structures” (for acquiring II level vocational qualification for the occupation of “Builder-fitter”); programmes for acquiring II level of vocational qualification for the occupation of “Fitter of Water Supply and Sewage Systems”; programmes for acquiring I level of vocational qualification for “Assistant Road Constructor”, etc.;
• Training in the construction professions and specialties in the vocational education and training system is entirely technical and the acquisition of economic and managerial knowledge and skills is very poor and limited to individual school subjects, such as “Economics” and “Entrepreneurship” (see, for instance, Curriculum for acquiring III level of vocational qualification for the occupation of “Construction Technician” or only “Economics” (for most of the other programmes);
• Most of the curricula for vocational training in the field of construction were approved in 2004 and in the period 2007-2010, while the ones approved over the past 5 years primarily apply to the different forms of study;
• The curricula of vocational high schools in construction have been developed and approved in the period 2005-2008, reflecting the developments in the field of science until the present day. The only programme that is relatively new is “Construction Technology” for the profession of “Construction Technician”, in the degree subject “Construction and Architecture”, which was approved in 2013.

The curricula and training programmes generally correspond to the direction of development in the construction sector. The focus is on the basic areas with new developments in the materials and technologies - dry construction, insulation, finishing works, transport construction and water engineering, etc. A large part of the references used, however, are from the 80s and 90s, which means that the training content is not sufficiently up-to-date.9

In order to improve the conditions for vocational training offered by vocational high schools, we believe that the following will be necessary:

- if opening new programmes is not possible, then at least it is recommended to introduce new disciplines and update the curricula and training programmes to reflect the trends of changes in the industry, which are the result of product and technological innovations in fields like energy, energy construction, facade engineering, building automation systems, ecology, environment protection, etc.;
- extending the scope of vocational training to areas such as economics (or, respectively - sectorial economics), finance, investment, investment process management, construction project management, etc., particularly for the programmes related to the profession of “Construction technician”. This will lead to better professional competences, more prospects for career development and expansion of trainees knowledge and skills at the next level of their education, especially for economic programmes;
- upgrading of the curricula, particularly of the course content. As mentioned earlier, the curricula currently used had been approved in the period 2005-2008, whereas a significant part of the sources used for the development of the learning materials are from the 80s and 90s. This calls for a review and update of existing literature so that it can reflect the scientific achievements of Bulgarian and foreign authors and specialists.

Vocational Training Centres (VTC) are another type of establishments offering training and professional qualification in the field of construction. Vocational Training Centres offer vocational training for persons aged over 16.10 They are subject to a license regime, where licenses are granted by the National Agency for Vocational Education and Training (NAVET) for professions and specialties listed in the List of Occupations for Vocational Education and Training (LOVET).

According to the Register of Licensed VTC11, the total number of the centres with a valid license offering training for acquiring professional qualification in occupations from the educational field of “58 Architecture and Construction” is 414 in 2014 (out of 957 centres functioning on the territory of the country).

The highest concentration of training establishments is in Sofia district /146/ (respectively - Sofia city), followed by Plovdiv /33/ and Varna /29/, which is the result of the larger number of economically active residents in these regions and hence the higher interest in vocational training. Vocational Training Centres are also concentrated mainly in district cities, with a very positive trend in this regard for the districts of Vidin, Dobrich and Yambol.

The most common type of education is training for acquiring II level vocational qualification for “Constructor”, for all course programmes. The least sought after type of education is training for acquiring III level vocational qualification for “Construction Technician”.

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11 is.navet.government.bg/# - Integrated Information System of the National Agency for Vocational Education and Training (NAVET), Register of licensed VTC.
It is noteworthy that training in vocational training centres covers almost all specialisations, in contrast to the training offered in vocational high schools. This directly corresponds to the main function of this type of establishments, particularly - to make vocational training accessible to a wider audience of consumers from different geographic regions and to create real opportunities for improving the effectiveness and employability of the workforce to match the labour market and the European requirements.

3. The role of professional project management in higher education

There is no doubt that the major role in acquiring professional competences, especially in the field of investment project management, is attributed to universities. According to the Higher Education Act (ZVO)\(^1\), the higher education system in Bulgaria includes universities, specialised higher education schools and independent colleges. The studies are conducted in 52 professional fields from nine (9) areas of the higher education.\(^2\)

For the purpose of this study, a total number of 51 accredited universities and colleges\(^3\) have been studied with a summary of findings presented below.

**Education in the field of project management** is offered in 11 universities and colleges in the following programmes: “Project Management”, “International Project Management”, and “Management of Projects Financed by the EU Funds”, “Management of European Infrastructural Projects”, “Construction of Buildings and Facilities” with specialisation in “Investment Project Management”, “Construction Project Management”, etc., including Master’s degree programmes. Studies in these programmes are carried out in the following four professional fields: “Economics”, “Administration and Management”, “General Engineering” and “Architecture, Construction and Geodesy” in two fields of the higher education - “Social, economic and legal studies” and “Technical disciplines”.

The Master’s degree programmes in the first three fields provide training for managerial staff and qualified specialists, providing necessary theoretical knowledge, practical skills and professional competences in the field of project management as a whole, including management and implementation of projects financed by the EU funds and programmes. The objective is to increase the administrative capacity in the field of project management in business organisations, public administrations and the non-governmental sector.

Studies in the Master’s degree programme in “Management of European Infrastructural Projects”, as evident from its title, focuses on preparing specialists with competences in the field of development and structuring of tenders (project...
proposals) for European infrastructural projects, who have the necessary knowledge and skills to participate in the technical, administrative and financial management and implementation of the project activities.

**Training in the field of investment (construction) project management** is offered by two Master’s degree programmes. One of them is the Master’s degree programme in “Project Management in the Field of Construction” (University of Architecture, Civil Engineering and Geodesy) designed for students with a Bachelor’s or a Master’s degree willing to further their knowledge in the area of civil engineering. The successful graduates of the programme demonstrate wide knowledge and skills in the field of economics, social studies and management. As seen from the course curriculum, studies follow the logic of management theory in the field of project management. The main advantage (and main limitation) here, in the context of investment project management, is the presence (or, rather, the necessity) of acquired qualification in civil engineering.

It is important to highlight the programme in “Construction of Buildings and Facilities” with specialisation in “Investment Project Management”, offered in University of Structural Engineering and Architecture “L. Karavelov” - Sofia. Studies in this Master’s degree programme are carried out based on a wide variety of aspects, covering the following fields: management and managerial decisions; investment, finance, budgeting; construction law; marketing, management and entrepreneurship; information technologies, etc., which, in our opinion, are very important for each project manager and yet missing in most of the other programmes.

**Training in the field of construction** in higher education are also offered as part of other technical programmes in the professional field of “Architecture, Construction and Geodesy”, some of which have a wider profile (“Construction of Buildings and Facilities”) while others offer a narrow specialisation (“Transport Construction”, “Road Construction”, “Hydraulic Construction”, “Irrigation and Drainage Engineering”, etc.) and there is also one programme in the professional field of economics (“Economics of Construction”). Each of them provides the opportunity to acquire certain professional competences for management and/or implementation of the basic parts of the overall construction and investment process, however, none of them offers the necessary interdisciplinary competences for management of the overall investment process, especially when it comes to implementation of large-scale investment projects.

In order to improve the opportunities for acquiring professional competences in the field of project management in the higher education system of the Republic of Bulgaria and based on a research of the experience in other European countries, such as Denmark and Great Britain, which have long-term traditions in higher education, we believe the following recommendations should be taken into account:

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15 The author has published her study on the role of professional project management in the higher education system in Bulgaria, which also includes a comparison with the educational systems in Denmark and Great Britain. For more information, see: Antonova, V. The role of professional project management in the higher education system. – Construction entrepreneurship and real estate. Varna: Science and Economics, 2014.
• Providing better opportunities for studies in the field of project management, including in the Bachelor’s degree programmes with programmes like: “Project management and Risk Management”, “Project Management /by sectors/”, “Project Management and Development”, etc. Universities offering course programmes in the area of “Social, economic and legal studies” have a lot of potential.

• Expansion of the opportunities for studies in the field of investment project management by:
  - opening new programmes;

  Currently, studies in the field of investment project management are offered by few programmes – there are two Master’s degree programmes, where studies in one of them - “Management of Projects in the Field of Construction” (University of Architecture, Civil Engineering and Geodesy) follow primarily the logic of the general management theory in this field. There is a potential for opening new programmes mainly in universities that offer instruction in the field of “Technical disciplines” with programmes in the field of construction.
  - specialisation of training at different educational levels by enhancing the level of continuity;

  To date, the level of specialisation is limited. As detailed above, the course programmes in the field of investment project management which are on offer, are within the professional field of “Architecture, construction and geodesy” and are designed to upgrade the knowledge and skills already acquired in the field of civil engineering. This, however, holds significant limitations for graduates from other programmes. In our opinion, it is necessary to work towards increasing continuity through specialised undergraduate and graduate programmes (Bachelor’s and Master’s degree).
  - specialisation in subject degree training.

  Specialisation within the programme through a set of specialised modules (and/or in the form of specialisation under the main programme) is also a good practice not only abroad, but also in Bulgaria. Its wider application would significantly contribute to the improvement of the flexibility of course curricula and expansion of the opportunities for vocational studies in Bulgaria. In our opinion, this practice could and should be applied both for the technical and for the economic programmes.

  Finally, once acquired, professional competences should be constantly updated and upgraded in line with the changes in the environment. This can be achieved through continuing vocational training (CVT). Continuing training in the higher education system is carried out in line with the provisions of the Higher Education Act, where Article 43 of the act uses the specific term “training for improving the qualification”.

  Despite the indisputable advantages of this form of training, we should note that the universities discussed here do not utilise (at least not to the full extent) their potential

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16 Examples of this include: the programme in “Construction of Buildings and Facilities” with specialisation in “Investment Project Management” (University of Structural Engineering and Architecture “L. Karavelov” – Sofia); the programme in “International Economic Relations” with specialisation in “International Project Management” (University of National and World Economy – Sofia), etc.
in the field of project management. Existing forms of continuing training are primarily focusing on development of certain competences (e.g. for operating specialised software, quality control, health and safety) while specialised programmes in the field of project management are very few. Therefore, we believe that it is appropriate to expand the interdisciplinary approach to learning by bringing together academics from various fields in order to achieve synergy and co-operation in these diverse activities and enhance competences in the area of investment project management.

Conclusion

In conclusion, we can summarise that the educational system in Bulgaria has the necessary resources for preparation of qualified staff/workers in the field of investment project management, however, it has not yet realised its full potential. There are however opportunities and prerequisites for development in this field both in the vocational education and training system (including vocational high schools and vocational training centres) and in the higher education system. Our recommendations that we consider appropriate towards improving the conditions for vocational education and training are as follows:

- in terms of vocational education and training system – introduction of new course disciplines, updating the curricula and programmes applied, expansion of the professional training for trainees in the field of economics and management;
- in terms of higher education – introduction of new curricula, opening new programmes, enhancement of the level of continuity, specialisation of the studies, etc.

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Abstract

Possessing the necessary knowledge, skills and competences in the area of project management is a compulsory condition and major prerequisite for achieving professional management. In the article there are studied the possibilities for vocational education and training in the area of project management, specifically the management of investment projects. The analysis is built on types of institution, encompassing both the system of vocational education and training (including professional secondary schools and vocational training centres), and the system of higher education (including the conditions for continuing vocational training).

Keywords: projects, management of investment projects, vocational education and training.