Construction Maeconomics Conference 2019

Programme Management Critical Review

Ivana Řezáčová1

1CTU in Prague, Fac. of Civil Engineering, Thákurova 7, Prague 6, 166 29, the Czech Republic, ivana.kozakova@fsv.cvut.cz

Abstract

Project management is widely used term as well as the process and method itself in plenty of fields of human being – both research and practice. On the other hand programme management which is kind of superstructure of project management is rarely being recognized in practice. A programme is a set of separate projects that are coordinated at the same time, giving the company greater efficiency and overview than management of each project separately.

This paper aims to prove the current level of research on programmes and their management. This article is focused on describing the basis of programme management and it provides a critical research of the last 15 years of publishing this topic in research databases and journals.

Keywords

benefit management; evaluation model; programme management

Introduction

In the Czech Republic, as in many other European or world countries, there are plenty of retail companies operating on the market who own and operate a number of similar properties for their business even though the property, facility or construction management is not their specialty. Generally, facility maintenance, reconstruction or network expansion can be described as a programme as this is a set of separate projects that are coordinated at the same time, giving the company greater efficiency and overview than management of each project separately. The hypothesis was set as: Retail companies do not use methods of programme management in their own business because they do not know how to use them.

This paper aims to be first step in wider research. It describes the theoretical bases of programme management and review the current academic research on that topic to approve the correctness of idea of consequent research.

Methodology

The theoretical background of this paper comes from the international standardization organizations of project and programme management such as Project Management Institute or International Project Management Association. Also available printed publications and academic papers focused on this topic were used.

The core of this paper is the critical research of published papers during last 15 years in scientific databases. The same keywords was used for searching the appropriate papers such as *programme management, construction* and *development.* Additional criteria were chosen such as construction as a science topic, definition of time frame of 5 years and English as a published language.Used databases were Knovel, Elsevier, Wiley Online Library and Summon. Many papers have been studied but only nine of them were identified as relevant to the topic of construction programmes. All others talked about IT, government or education programmes.

All nine chosen papers were briefly described and the topic approach was evaluated. The aim of the critical review is to define the different view of programme management and the possible gaps in research which could be studied afterwards.

Basis of Programme Management

There are a number of interpretations of the term programme. Programme could be interpreted in the word dictionaries as *a set plan of work or job description; a specified sequence of events; printed announcement of the event*. In the construction industry it is possible to find the term *construction programme* which means a schedule in technical literature.

US standards [1] generally make difference in management by volume: projects, programmes and portfolios. A project is a temporary effort which creates a unique product, service or result. In contrast, according to the same methodology, a programme is defined as a group of related projects, sub-programmes and programme activities that are managed in a coordinated manner to achieve benefits that would not be available by managing each project individually. The portfolio is then a group of projects, programmes, sub-portfolios and enterprises to achieve strategic goals.



Figure 1: Examples of connection of management levels in public sector (PMBOOK Guide 2017: PMI) [1]

For this paper a definition has been selected from publication [2] which focuses specifically on programme management in the construction industry. It says that programme management combines capabilities and resources to identify, plan, implement and link every aspect of a comprehensive multi-project construction programme, regardless of the type of construction from idea to completion, using a team of experts whose only purpose is to meet the client's requirements for the construction according to the requirements, milestones, specifications at given time and budget.

It is necessary to define at the beginning whether realization each project individually would be more beneficial for the company than integration them into one programme and getting additional benefits from joint management. Multiple project management with the programme usually optimizes the planning, effort and costs of all projects in the programme. Projects included in the programme may be interdependent sharing mutual resources, features, technology, customer or vendor. In addition it allows to use broader management methods such as benefit management, stakeholder management or programme management. [3]

Basic points in programme management according to [2] can be characterized as follows:

• Multiple projects: A programme consists of series of related projects which are mostly interdependent and they have a single objective in some cases.

• Planning: Each programme requires complex planning which is theoretically similar to project planning but it differs in approach (selected activities and strategic planning). The programme has its own schedule and its milestones based on completion of key programme tasks. Programme planning can also mean coordination of individual projects in the programme.

• Monitoring: Programme management process must monitor progress, problems and risks at programme level. Programme monitoring is done by people with greater authority and experience than project level.

• Reporting: As monitoring, it is done at the programme level. Within the programme management reports from each project are collected and subsequently transferred to higher level of the company management.

• Budget: Programmes very often involve budget management. Most project managers are responsible for setting deadlines and budget completing of projects on a macro-level.

• Resources: It is essential to manage resources so that all of them (designers, workers, equipment, materials, etc.) are available for all projects in the programme.

Programme management in Research

Programme management is a topic that is only marginally mentioned in academic papers and publications in comparison to project management although it can be used in many fields such as technics, business or IT. Anyway some type of research has been done or it is ongoing in many countries at various faculties.

A study was conducted in the United Kingdom [4] in 2003, describing the shortcomings of the theoretical foundations in practical application of programme management but specific examples are not mentioned in the study. The results of the study are four basic recommendations that the authors see as space for improvement, namely: focus on training programme managers; strengthen the relations between the different programme participants in order to improve cooperation and achieve the objectives; assign specific sub-objectives to individual projects of the programme, their fulfillment will contribute to the fulfillment of the objectives of the whole programme; during programme lifecycle it is necessary to clearly separate the evaluation of individual projects in the program and the overall evaluation of the program, which should be based on the achieved cumulative benefits.

A similar study was taken in 2016 in Finland [5]. This is an empirical study of previously published articles on programme management. The main output is to identify five areas on which further research should focus. They are:

* use of programme management in different contexts and sectors, their nuances,
* relationship between programme management practices and achieved value,
* roles of other programme team members (beside the programme manager) and their impact on the programme;
* stakeholder roles and programmes from the perspective of programme clients,
* change of organizational structure in the company during the introduction of programme management.

In both resources, the authors agree that an evaluation is important part of programme management, both during the programme lifecycle and also after the end of programme. They also agree that this topic needs to be studied in more detail.

Valuation of programme management can be done using different methods or models. According to M. Thiry [6], programme management evaluation is based on a performance evaluation model, monitoring clear objectives and it consists of robust control techniques. From his point of view, he proposes to create a new model for evaluating programme management by incorporating the value management (so-called learning cycle) view into the programme management performance cycle. Unfortunately, the entire study [6] offers only a theoretical basis without any practical application.

The evaluation of programme effectivity is one of the most important components of portfolio management as reported in a study from Russia [7]. This study focuses on portfolio management model which is divided into three basic phases: creation and customization; monitoring and control; maintenance and development. The study [7] describe general fundamental steps leading to the evaluation of programmes and projects in the portfolio in the monitoring and control phase which can be used for developing a model for evaluating the effectivity of programmes in future research.

Extensive research [8] has been conducted in the USA on programme management at Government Aviation Testing Institute, which examined the usage of individual programme management methods and tools in a specific four programmes and their impact on achieving programme objectives and customer satisfaction. The research was carried out in the following steps:

* theoretical background of programme management and testing laboratory operation;
* selection of specific comparable programmes;
* semi-structured interviews with programme participants;
* creation of a programme management model;
* verifying the correctness of the model with those asked to confirm correctness;
* output and description of usage.

The result is a framework (model) for implementing project management into government testing programmes. According to the authors [8], the model is particularly useful in the field of study, but they add that the this scientific approach can be applied in other branches of programme management to obtain a model for a particular field.

A Swedish study [9] examines the integration of supply chain management into programme management. The research is based on a case study of the construction (programme) of the Royal Port in Stockholm, which contained 9 complex projects. The case study [9] adds to the supply chain management theory a fifth dimension for programme management, consisting of the relationships and dependencies between individual projects in programme. These should be handled in procurement phase by establishing in contracts the cooperation and coordination processes of all projects as well as mutual communication across the whole programme.

A similar conclusion to the above study from Sweden is given by the Indonesian example, so it can be stated that coordination and communication is a very important chapter of programme management, which is clearly illustrated by practical examples. According to [10], the Government of Indonesia is now releasing large funds for investment in development and construction of infrastructure and individual construction projects have been structured into comprehensive programmes. Individual projects in the programmes are delivered by Design & Build method, mainly to reduce the time between the approval of the project and the delivery of the result. According to [10] the use of this method is non-standard in the country, therefore a risk survey was carried out from the perspective of general contractors so that risks could be managed in a time and by correct manner. The risk of poor management and communication was identified as the greatest risk of successful using the Design & Build approach for programmes and projects.

Another interesting practical example is the case study from Poland [11], which examines programme of port network development which consists of 10 projects (4 refurbishments and 6 new ones) in the north of Poland. The use of critical chain project / multi-program management ( CCPM and CCMPM, respectively) in this programme was examined from the perspective of time and resource planning. First, the programme construction time was determined by the critical path method for each project and then by the CCMPM method. CCMPM approach speeds up the entire programme by about 25 % of the time [11]. However, the traditional time and resource planning approach was originally used during construction so the results of the CCMPM method are only computational and could differ in real practice. Even so, it is an illustrative example of the benefit of managing the programme as a whole unit, which could bring considerable time saving in this particular case.

The theory of financial management as part of programme management is theoretically described in a study from Ukraine [12], whose conclusions recommend using appropriate methods and tools in planning, controlling, monitoring and evaluating individual financial processes within the programme and consistently deal with finance through contractual relationships between key stakeholders. This study demonstrates the up-to-dateness of the topic of programme management from finance point of view.

Conclusion and discussion

The presented research of academic papers about programme management shows that it is current topic but it is being just roughly examined. The case studies about using the methods of programme management in practice are missing. Even though the studies from UK and Finland defines the gaps in research, no follow-up studies use these topic and they stand unexplored. Other mentioned studies are focused on evaluation of programmes and their management but no specific ways of usage the proposed method in practice have been shown. During last 15 years there have been published only three main case studies but only one of them brings specific figures and conclusions, the other two are mostly theory.

Consequent research based on this critical review should be focused on practical usage of programme management as a method with examples of its benefits from case studies.

References

1. *A guide to the project management body of knowledge: PMBOK Guide.* Sixth Edition. Newtown Square: Project Management Institute, 2017. ISBN 978-1-62825-184-5.
2. BARNES, P., FARREN, R., HAIDAR, A.D., WELLS, K.P. *Programme management in construction*. Westminster, London: ICE Publishing, 2015. ISBN 978-0-7277-6014-2.
3. ŘEHÁČEK, P. *P3M: řízení projektu, řízení programu, řízení portfolia.* Jesenice: Ekopress, 2019. ISBN 978-80-87865-49-1.
4. LYCETT, M., RASSAU, A., DANSON, J. Programme management: a critical review. *International Journal of Project Management.* 22(4)-2004, pp. 289-299. DOI: 10.1016/j.ijproman.2003.06.001. ISSN 02637863. Available online at: https://linkinghub.elsevier.com/retrieve/pii/S0263786303000863
5. MARTINSUO, M., HOVERFÄLT, P. Change program management: Toward a capability for managing value-oriented, integrated multi-project change in its context. *International Journal of Project Management*. 36(1)-2018, , pp. 134-146 DOI: 10.1016/j.ijproman.2017.04.018. ISSN 02637863. Available online at: https://linkinghub.elsevier.com/retrieve/pii/S0263786316304744
6. THIRY, M. Combining value and project management into an effective programme management model. *International Journal of Project Management*. 20(3)-2002, pp. 221-227. DOI: 10.1016/S0263-7863(01)00072-2. ISSN 02637863. Available online at: https://linkinghub.elsevier.com/retrieve/pii/S0263786301000722
7. KOZLOV, A., SHNYRENKOV, E., MURGUL, V. Portfolio management for investment projects in the construction industry. *MATEC Web of Conferences*. 2017, p. 106. DOI: 10.1051/matecconf/201710608006. ISSN 2261-236X. Available online at: http://www.matec-conferences.org/10.1051/matecconf/201710608006
8. EIGBE, A. P., SAUSER, B.J., FELDER, W. Systemic analysis of the critical dimensions of project management that impact test and evaluation program outcomes. *International Journal of Project Management*. 33(4)-2015, pp. 747-759. DOI: 10.1016/j.ijproman.2014.09.008. ISSN 02637863. Available online at: https://linkinghub.elsevier.com/retrieve/pii/S0263786314001458
9. GUSTAVSSON, T. K., BENGTSSON, S.H., ERIKSSON, P.E. A program perspective on partnering as supply chain integration. *Proceedings of the 9th Nordic Conference on Construction Economics and Organization*. Lyngby: Polyteknisk Forlag, 2017, p. 253-261. ISBN 9788750211259.
10. ROSTIYANTI, S., BINTANG, A., et al. Identification of design-build project risk factors: contractor’s perspective. *MATEC Web of Conferences*. 2019, p. 276. DOI: 10.1051/matecconf/201927602017. ISSN 2261-236X. Available online at: https://www.matec-conferences.org/10.1051/matecconf/201927602017
11. ARASZKIEWICZ, K. Application of Critical Chain Management in Construction Projects Schedules in a Multi-Project Environment: A Case Study. *Procedia Engineering.* 182-2017, pp. 33-41. DOI: 10.1016/j.proeng.2017.03.108. ISSN 18777058. Available online at: https://linkinghub.elsevier.com/retrieve/pii/S1877705817312444
12. LYTVYNCHENKO, G. Financial Mechanism as a Part of Programme Management. *Procedia - Social and Behavioral Sciences*. 230-2016, pp. 198-203. DOI: 10.1016/j.sbspro.2016.09.025. ISSN 18770428. Available online at: https://linkinghub.elsevier.com/retrieve/pii/S1877042816311260