

THE IMPACT OF ČSN ISO 21500 STANDARD ON PROJECT MANAGEMENT OF CONSTRUCTIONS IN THE CZECH REPUBLIC

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Abstract

The ČSN ISO 21500 standard titled “Návod k managementu projektu” is the Czech translation of the first edition of the international standard ISO 21500:2012 “Guidance on Project Management” issued in September 2012. It provides guidance on project management, which may be used by both private and public organizations regardless of the type of project, its complexity and duration. The standard contains descriptions of terms and processes that occur most frequently in projects and it also lists well-trying and tested methods of project management. The authors of this paper compare the generally formulated content and scope of the standard with the conventions and processes of project management in the Czech Republic. The conclusion contains an evaluation of the standard and recommendations concerning the ways of using this standard in the Czech Republic during the construction process to achieve higher efficiency of projects. The authors of paper aspires standards not in its content (everything has already been written before), but in the formulation and adoption of the principles of project management as an international standard, which will contribute to the further spread of this effective methodology.

Keywords

Project management; ISO 21500; construction projects; Czech construction legislation

To cite this paper: Nový, M., Nováková, J., Waldhans, M. (2014). *The impact of ČSN ISO 21500 Standard on project management of constructions in the Czech Republic, In conference proceedings of People, Buildings and Environment 2014, an international scientific conference, Kroměříž, Czech Republic, pp. 349-355, ISSN: 1805-6784.*

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1 INTRODUCTION

A characteristic feature of today is globalization, which leads to greater interconnectedness in politics, economics and culture. An essential condition for its emergence was the acceleration of world-wide transportation of goods and information in the second half of the 20th century, which almost eliminated the former limitations given by the places of origin and consumption. Globalization is now also typical of the area of project preparation and execution. To increase the probability of a successful completion of international projects, it is necessary for the participants from all the countries of the world to use the same professional language, that is, to use the same terminology and methodology so that they understand each other. A well-established way to achieve global understanding is represented by the international standards prepared and issued by the International Organization for Standardization (ISO). [1]

During international project cooperation, it is not only different cultures and languages that meet, but also different methodologies of project management. The aim of the ISO 21500:2012 standard [2] was to create an internationally valid and recognized norm to harmonise the principles, terminology and processes of project management on a global level. The importance of this standard was acknowledged in the Czech Republic as well. The standard was included into the system of Czech standards (ČSN) in May 2013 (effective as from 1 June 2013) in its Czech translation [3] provided by the Czech Office for Standards, Metrology and Testing (ÚNMZ). This office ensures the execution of state administration in the field of technical normalization, metrology and state testing.

This paper considers the importance of the standard for project management in the Czech construction industry and compares the terminology and processes described in this standard with those used during the construction of projects performed under the Czech legislation.

2 BEGINNING OF PROJECT MANAGEMENT

The use of project management methods during construction has a long-standing tradition in the Czech Republic, even though in the specific conditions of planned management of the national economy in the second half of the 20th century. The development of the construction industry in the 1990s after the reintroduction of market economy was therefore not as steep as in other fields. It was mostly based on adapting to new conditions: legislative (laws, decrees, state authorities), economic (new businesses and business relationships), technological (new materials and processes) and technical (computer equipment, software, communication). In the field of preparation and management of construction projects, Czech managers – with the help of their colleagues from abroad – began to familiarize themselves with the terminology, knowledge and processes used elsewhere in the world. Unfortunately, there were some differences even there that still persist today. Due to the historical development and different conditions, several approaches to project management were established on the global scale; they are now represented and promoted by international organizations and their national branches.

In the USA, the Project Management Institute (PMI®) organisation was founded in 1969. It is represented in more than 185 countries of the world and has more than half a million members. This organization created an internationally recognized standard which provides basic information about project management – Project Management Body of Knowledge (PMBOK®). [4] In 2011, a regular Czech Chapter of Project Management Institute PMI was established.

Another organization in the field of project management is the International Management Association (IPMA®). It was founded in 1965 and today it unites 50 national organizations in various parts of the world. [5] A national organization was created in our territory in February 1990. After the establishment of an independent Czech Republic, a new organization called Organization for Project Management, o. s. (SPŘ) was accepted into IPMA®. [6] Its main publication is the National Competency Standard for Project Management, which is based on the international IPMA® Competence Baseline (ICB) standard.

The third methodology of project management – and the one most wide-spread in Europe – is the PRINCE2® methodology (abbreviated from PProjects IN Controlled Environment), which is owned by the British Office of Government Commerce (OGC). This methodology emerged in 1989 and it was last innovated in 2009. In many European countries, it is required as a condition for participating in government contracts. The main source of information is the publication *Managing Successful Projects with PRINCE2®*. [7]

In the Czech Republic, the ICB standard is most often used and certified, due to the long-term and effective activities of SPŘ.

3 ORIGIN AND CONTENT OF THE STANDARD

The opening session of the Project Committee ISO/PC 236 on a new standard took place in the British Standards Institution (BSI) in November 2007. Further work was performed by three groups led by the American National Standards Institute (ANSI) from the USA, the Deutsches Institut für Normung (DIN) from Germany and the BSI from Great Britain. In view of the extensive scope of project management, an independent ISO Technical Committee with the number 258 (ISO/TC2 258 Project, Programme and Portfolio Management) was founded in 2011 to prepare the 21500 standard. The Czech Republic was neither among the 36 Participating Countries nor among the 10 Observing Countries. A group of Czech specialists from the SPŘ took part in commenting the standard through the ÚNMZ as a member of the ISO. Their main objections to the standard included insufficient interconnectedness with the existing ISO standards, excessively narrow conception and insufficient intersection with all the well-established standards of project management. In the final version of the standard, only formal comments and some terminological remarks were taken into account. No conceptual comments were accepted. The standard was approved by voting of the ISO members and published on 1 September 2012.

ISO 21500 is the first standard from a planned family of project management standards. Two other standards are being prepared – 21502: Project and Programme Portfolio Management and 21503: Guidance on Governance of Projects, Programmes and Portfolios. The standard was designed to align with other related international standards such as ISO 10006:2003 Quality Management Systems – Guidelines for Quality Management in Projects, ISO 10007:2003, Quality Management Systems – Guidelines for Configuration Management, ISO 31000:2009, Risk management – Principles and Guidelines.

The activities of the ISO are explained in the Preface to the standard. In the Introduction, the target readership is described – leaders, project contractors, project managers and members of project teams as well as authors of national standards for project management. Clause 1 (Scope) delineates the content of the standard. It consists of guidelines for project management regardless of the type of organization and the type and complexity of the project. Clause 2 lists 16 basic terms and definitions. Clause 3 describes key terms (e.g. project, project management, project leadership, competences of workers, project life cycle) which can be used in the majority of projects. Clause 4 discusses 39 processes of project

management. These processes are divided into process groups and subject groups. Each process is categorised into the respective groups and described in detail together with its main inputs and outputs. At the end of the standard, there is an Annex containing graphic representation of the processes and their sequence in the process groups according to the subject groups. [2]

The list of processes and their descriptions clearly shows that the PMBOK® Guide was used as the underlying standard. Most of its 42 processes were used directly, some of them were shifted within the structure, some were merged and only two processes were not included. Three new processes were integrated into the standard.

4 LEGISLATION AND CONSTRUCTION INDUSTRY

The basic legislative framework for the construction industry in the Czech Republic is the Act No. 183/2006 Coll. on spatial planning and construction code (the Construction Act) [8]. This Act regulates spatial planning, especially the issuance of permits for constructions and their changes, the use and removal of constructions, the role and competences of authorized inspectors, the system of construction authorities and the responsibilities of individuals during the preparation and execution of constructions. The Act also regulates the conditions for project activities and execution of constructions, the general requirements for constructions and the protection of public interests. This Act was amended 13 times since its release in March 2006 until April 2014. Other decrees and government regulations were issued for the implementation of this Act and the text of the Act also references other laws. In 2013 alone, 15 important legal regulations were issued in the Collection of Laws of the Czech Republic that apply directly to entrepreneurs in the construction industry. This illustrates the complexity and instability of the Czech legislation.

The Construction Act mentions project engineers, project activities and project documentation in many places, but only in connection with the responsible person, his/her actions and the result of these actions, which is the construction documentation for the execution of the construction. Such understanding of the word *project* comes from its use in the second half of the 20th century in the Czech Republic. The word is therefore not understood and used as a technical term from the theory of project management.

The Czech managers of preparation and execution of construction – in other words, the project managers – have to fulfil all the necessary legislative requirements first and only then they can devote their time to the superstructure provided by project management. It is obvious that project managers perform a number of activities required by law without necessarily being aware that these activities are a part of project management.

Considering the situation described above, the position of project managers in the Czech construction industry – especially of those who are new to the position – is very demanding.

5 USE OF THE STANDARD IN THE CZECH CONSTRUCTION INDUSTRY

The core of the whole standard is presented in Table 1, where the names of project management processes are placed in the points of intersection of the respective lines of subject groups and columns of process groups. The individual groups and each process are described and explained in respective clauses of the standard. The texts are readable and comprehensible and only basic preliminary knowledge of project management is necessary for their understanding. They are supplemented with several charts which illustrate the texts.

Tab. 1: Project Management Processes (simplified according to [9])

Subject groups	Process groups				
	Initiation	Planning	Execution	Control and Validation	Completion
Integration	x	x	x	x x	x x
Involvement	x		x		
Scope		x x x		x	
Resources	x	x x	x	x x	
Time		x x x		x	
Cost		x x		x	
Risks		x x	x	x	
Quality		x	x	x	
Procurement		x	x	x	
Communication		x	x	x	

x – a process listed in the standard

For readers interested in the project management in the Czech Republic, Table 2 illustrates the life cycle of a common construction project (execution of a construction work) carried out in the Czech Republic. It is divided into three basic phases – definition (A), planning (B) and execution (C). Table 2 lists the necessary public proceedings according to the Construction Act, the usual tenders for project participants and contracts with them, studies and documentation, public decision and other milestones. Each phase contains determination of the parties involved in the processes of that phase (tenders for contractors and public proceedings) (1), preparation of contracts for process execution (2), execution of process outputs (3) and decision on process results (4).

Tab. 2: Life Cycle of Construction Project

Phases	Process groups and their outputs			
	Tender = T Procedure = P (1)	Contract = C (2)	Study = S Documentation = Doc (3)	Decision = Dec (4)
Definition = Def (A)	1-T for studies 2-T for architect	1-C for studies 2-C with architect	1-S of needs 2-S of feasibility 3-architectural S 4-Doc of survey	1-Investment Dec 2-Appointing of project manager
Planning (B)	1-T for engineering 2-T for project engineer 3-Planning P 4-Building permit proceedings	1-C for premises 2-C for engineering 3-C for documentation	1-Doc for planning P 2-Doc for building permit	1-Dec on the location of the construction 2-Building permit
Execution (C)	1-T for contractor 2-Building permit proceedings	1-C for execution	1-Tender Doc 2-Execution Doc 3-Construction-technological Doc 4-Execution 5-Doc of the actual execution	1-Occupancy permit issuance 2-Entry of a record in the Land Register 3-Entry into service

Each process has its selected contractor with whom a contract for securing a process of a specified scope and quality (specification) is concluded. The process is divided into activities with assigned costs (establishing a budget), time and sources necessary for their execution. Risks are considered in each process. The course of the processes is planned and mutually coordinated (creating a schedule), managed and changed; outputs are accepted by the project

managers and paid to the contractors. The course of the project is monitored and the information is processed and provided by means of communication channels. At the end, the project is closed, evaluated and archived.

In comparison with Table 1, Table 2 is briefer, does not need further explanation and most importantly, it is more comprehensible for a Czech civil engineer, as it contains terms which are clear to him/her and which are commonly used. Table 2 and its description contain all the subject groups from Table 1. Moreover, Table 2 provides an idea about the time schedule of the project, as it is divided into phases.

The standard can be recommended for study as a source of general information on project management regardless of the field, scope and place of execution of the project. To overcome the language barrier, it is better to use the Czech translation [9] supplemented with a number of comments.

6 CONTRIBUTION OF THE STANDARD

The ISO 21500 standard is not designed for the certification of persons or companies. Therefore, it should not appear in the criteria of tenders for public contracts. If its performance is not required, it is very likely that its principles and recommendations will not be generally known and so they will not be fully used and executed. Projects using methods of project management will continue to follow them in the future, while projects using other methods (e.g. trial-and-error method) will continue to apply these as well. The new standard will only affect projects marginally, if at all. There will certainly be companies claiming that their projects follow the ISO 21500 standard, but only a minority of such claims will be true. The ISO 21500 standard is new, but its contents are not. Everything that it contains has already been written elsewhere, even if in different words and in different order. The lack seems to be the dominant source of knowledge, which is the PMBOK® of PMI® [4]. Other major companies project management [5] [7] with their different models can thus be deterred from further international cooperation.

The standard and its comments will definitely become an important aid used at universities and in further education. Its contribution lies in its psychological impact on the expert public which is assured by the issuance of an ISO standard with such content that the use of project management is both necessary and important. Issuing an international standard may thus lead to increased importance of project management and to the development of international cooperation due to uniform terminology.

ACKNOWLEDGMENT

The contribution was written thanks to the support of the “Středoevropské centrum pro vytváření a realizaci inovovaných technicko-ekonomických studijních programů” project, registration number CZ.1.07/2.2.00/28.0301, which is in progress at the Faculty of Civil Engineering of the University of Technology in Brno.

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