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## Adaptive management approach to an infrastructure project

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### Abstract

The paper presents an adaptive approach to project management, illustrated by the description of a case study, i.e., of a project whose aim was to develop the means and prepare the documentation for the revitalization of a railway line. The project itself was a major challenge for the implementers due to a novel and innovative subject thereof, including the construction of a railway line which takes place in a difficult terrain and within the constraints of urban planning. Because of the situation, among other things, or the number of unknowns regarding the result of the project and the principles of its operation, adaptive approach was used to obtain proper results. This approach is mainly applied in IT environments, but the current project attempts to utilize the same principles to an infrastructure project. The paper characterizes the adaptive approach and based on the use thereof, illustrates the preparation of project documentation for the construction of an urban railway line.

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*Keywords:* adaptive project management, adaptation, project success

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### 1. Introduction

Project delivery has recently started to require a flexible approach. This need results from the fact that projects are delivered in a changing, and therefore more unpredictable, environment, which translates directly to the way a project is conducted and the interested parties' expectations towards its outcome. Such a situation makes it complicated to plan the course a project might take as well as subsequently deliver the project according to the accepted flow. The need for a flexible approach is apparent in IT projects within the field of software engineering and in innovative projects covering various branches but always including a big measure of research and development activity. However, because of the abovementioned changes in the environment, the need for a flexible

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approach is becoming apparent in projects that used to be considered as predetermined and predictable in their process of execution. The author of this article analyzed an infrastructure project whose very name was being developed when the project was already running and which is currently referred to as Pomeranian Metropolitan Railway, PKM in Gdańsk, Poland. The aim of the project was to develop the functional and documentation aspects of constructing innovative communication infrastructure. Within the scope of the project, the flexible approach took the form of adaptive methods.

## 2. Classic methods versus adaptive approach

In classic methodology or TPM – Traditional Project Management – a three-stage, or sometimes a five-stage if referencing the PMBOK® Guide (2013), model of project delivery is quoted. It consists of the following stages:

- Initiation (defining);
- Planning;
- Performance (the actual delivery);
- Progress monitoring and control;
- Closing the project.

The core idea of the traditional approach to project execution is the fact that the sponsor / customer defines, at the initiation stage of the project, or sometimes even before this point, what they want the project to achieve and when the achievement is to be completed, as well as what the cost of the project delivery will be. In traditional methods, the planning stage provides the detailing and definitions to a number of factors that are crucial for the proper course of project performance. At the beginning of the performance stage, the result of the project has therefore already been properly defined. The projects are executed according to a detailed plan, which is approved before the project proceeds to the performance stage, and the individual task groups receive precisely-stated goals and tasks to be carried out. During project delivery, no or only limited deviations from the original design are assumed.

A situation in which at the beginning of project delivery its outcome is clearly and completely defined is rather uncommon in economical practice. Currently, one may more often find projects where only the goal is defined, in general terms, and the maximum budget may be assumed, but neither the precise product nor the way of reaching the stated general goals are known.

Such conditioning forces the project responsables to search for more flexible rules of conduct than those assumed in classical methods. This has led to the development of the first project management rules taking into account the external conditioning on an ongoing basis and the intermittent milestones, primarily in IT projects, in the 1990s. Such methods are referred to as agile methods because they follow the rules introduced in The Agile Manifesto.

Adaptive project management (APM) is one of the fundamental agile methods – a group that also encompasses SCRUM of software development (Schwaber, 2005), Adaptive Software Development ASD (Wysocki & McGary, 2005; Wirkus & Węsierski, 2011). and the like.

The essential differences between the classical project management methods and the adaptive ones are presented in Fig. 1.

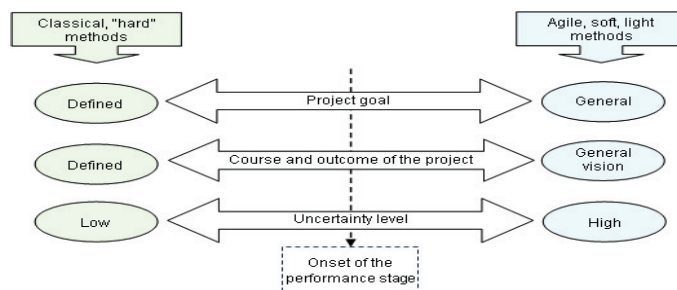


Fig. 1. Fundamental differences between classical and agile methods.

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