

# ADAPTATIVE PROJECT FRAMEWORK AS A DEVELOPMENT PROJECT MANAGEMENT METHOD ON THE EXAMPLE OF THE KASHUBSKA OSTOJA PROJECT

**Jarosław Szreder, PhD**

*Faculty of Management,  
Pomeranian Academy in Słupsk  
e-mail: jszreder@apion.pl*

**Piotr Walentynowicz, prof. PhD**

*Institute of Organization and Management,  
Gdańsk University  
e-mail: piotr.walentynowicz@ug.edu.pl*

**Piotr Sycz, M.Sc.**

*Institute of Organization and Management,  
Gdańsk University  
e-mail: syczpiotr1@gmail.com*

## Abstract

The article focuses on a synthetic assessment of the validity of the application of certain methodologies in the management of development projects (including TPM, APF, APM)<sup>1</sup>. The authors, after discussing the basic assumptions of traditional methodologies and so-called "agile" ones, present the results of a development project implemented using the adaptive approach (Adaptative Project Framework). As the presented project was successful (full implementation of its assumptions ahead of time and with financial success), it was used as a basis on which the authors present the specificity of an adaptive approach in the management of development projects along with its critical analysis. The final result of the considerations is the presentation of the advantages and limitations of the application of such an approach to the management of development projects.

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**Key words:** *developer, construction developer process, investment project, adaptive project management.*

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## 1. Introduction

Managers often approach the realization of investment projects in property development in a

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<sup>1</sup> Traditional Project Management, Adaptative Project Framework, Agile Project Management.

determined, so-called traditional (Traditional Project Management) manner, behaving as if the surroundings and conditions in which they operate were stable. However, the volatility and uncertainty of modern economic conditions are also taken into consideration in this business sector. In response to imperfections of the traditional approach, which often does not work in new, difficult economic conditions (especially research and development, innovation or IT), at the beginning of the 21st century, so-called "project management" became widespread in the science and practice of the agile approach to project management—Its manifestations are, for example, Scrum, Kanban, or XP (Extreme Programming) methodologies (SZPITTER 2014). However, a "clean" agile approach in the management of development projects would be difficult to apply because the industry is characterized by specific conditions (including legal ones). Hence, solving the dilemmas of both approaches to development projects (traditional and agile), the authors recommend the so-called adaptive approach, which means taking advantage of and eliminating the disadvantages of the approaches mentioned above from the point of view of developer's realizing housing investments. The adaptive approach is not a new approach, as it is included in the group of agile methodologies (WYSOCKI, MCGARY 2005). According to the authors of the article, under specific conditions, it can be among the success factors of investments carried out by the developer. Therefore, the main goal of the article is to present the advantages and disadvantages of this approach in the development activity on the example of a critical analysis of one of the investment projects implemented in 2015 -2017 under the name Kaszubska Ostoja.

The main research methods were the analysis and synthesis of literature sources as well as a case study; the sources of information were Polish and foreign literature on the subject, the developer's project documentation and own experience resulting from observation of the project.

## 2. Traditional project management methodologies

Traditional project management (TPM) is a methodology for projects that proceeds according to a sequential (or cascading) cycle, which includes: initiation, planning, execution, monitoring and control, and termination. Each of these stages is dedicated to appropriate methods and techniques (project management tools), e.g. as defined in PMBOK® (2013) or, in other words, a book of good project management practices of the Project Management Institute (PMBOK 2013). Other traditional project management methodologies are PRINCE2, adopted by governmental institutions of Great Britain and in some other countries, but also private organizations such as Vodafone or Siemens (NEAGU 2013). The traditional project management methodologies also include the Project Life Cycle Management methodology applied in the management of EU funds, which includes such phases as programming, identification, development, financing, implementation and evaluation (EUROPEAN COMMISSION 2004). These methodologies use partially similar instruments, such as the goal tree or the Gantt chart, but focus on different aspects. The key issue in the PRINCE methodology is risk analysis, while in Project Cycle Management, the analysis of the problem and the resulting effects, as well as stakeholder analysis (ŁABUDA 2011). A logical matrix is also a specific PCM tool.

Traditional project management methodologies are effective for construction projects, where the whole project can be completed in one cycle, and the success is determined by achieving the assumed results in time and the project budget (NEAGU 2013). Traditional project management includes very thoughtful and disciplined planning and control. The individual phases of the project life cycle are easily recognizable here. Tasks are terminated one after the other in an ordered sequence, which requires a lot of planning before the project starts. This approach assumes that project events are predictable and tools and actions understandable. In addition, in the traditional approach, the conclusion of a given phase means that it is no longer exposed to any renewed analysis or change. The advantages of this approach are: demonstration of the project development path and a focus on requirements.

The main limitation, however, is the sequential flow of actions based on requirements, which customers are often not able to determine at the beginning, that is difficulties in real planning<sup>2</sup>. In

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<sup>2</sup> A certain attempt to improve project management in a traditional approach was the critical chain method proposed by E. Goldratt's (see E. GOLDRATT, *Critical Chain, Projects on Time*, Mint Books, Warsaw 2009). However, this method works well in classic conditions. In conditions where there is a need for agile methodology, the Goldratt concept does not work (see K. PUŁAWSKA, *Project management using the Critical*

computing, this model is often referred to as a waterfall model, i.e. going from the basic requirements phase, through system requirements, design, development, testing, delivery, and operation and maintenance. However, today's processes are often much more complex and interrelated, and traditional organizational structures are changing into network connections between different entities, which requires taking into account a variety of frequently changing demands during the project. This is enabled by agile methodologies (HASS 2007).

### 3. Agile approach to project management

As mentioned earlier, the traditional approach to project management is useful for projects with a well-defined scope, implemented in an environment without uncertainty and complexity. However, it is criticized for making unjustified assumptions about the possibility of predicting future events. The complexity of projects and the variability of the business environment make it difficult to predict project behaviors (ADJEL, RWAKAWIWANA 2009; NERUR, BALIJEPALLY 2007). According to Alleman, the weakness of the waterfall model used for traditional project management, in particular for software development projects, stems from the fact that actual planning is often a continuous process, changes in software result from customer observation, and the assumption of avoiding changes in the project, adopted in traditional methodologies, may cause the loss of many creative solutions (ALLEMAN, ESSAY 2008).

For decades, corporations have tried to change the traditional hierarchical approach to project management so that it would be more collaborative, which is a requirement of knowledge-based work. In the era of globalization, project management requires the flexibility of the design system to be able to adapt the project to constantly changing challenges and emerging opportunities. In the new economy, characterized by more complex and uncertain project situations, agile project management has proved to be a useful tool for knowledge workers and project managers (FERNANDEZ, FERNANDEZ 2008; CAMPANELLI, PARREIRA 2015). The main differences between agile and traditional project management methodologies are presented in the following principles (AWARD 2005):

- 1) People-oriented - agile methodology considers people (customers, production teams, stakeholders and end users) as the most important factor in a successful project. The most important implication for managers working in an agile way is that more emphasis is placed on such characteristics of people in the project as agreeableness, talent, cooperation skills, personal competences and communication. If the people involved in the project are good enough, they can use almost any manufacturing process and achieve their task. In turn, if the people involved are not good enough, no process will compensate for their ineptitude.
- 2) Adaptation - participants of an agile production process are not afraid of change. "Agility" welcomes changes at all stages of the project. Changes in requirements in the project are perceived as something good, because it means that the team had learned how the effects can better meet the market requirements. Today the challenge is not to prevent changes, but rather to determine how to better manage changes taking place in the whole project. Critical fluctuations caused by changes occurring in the external environment are not eliminable. Therefore, the only possible strategy is to reduce the costs corresponding to such situations.
- 3) Compliance with real results - the value in agile methodology is compliance with real results as opposed to compliance with a detailed plan, as is the case in traditional project management methodology. Projects are not agilely controlled by compliance of planning and implementation, but by compliance with the value of the business. Each iteration or development of the cycle increases the value of the product and thus the company. For those who are "agile" the decision about whether value for the company has been added or not does not come from the designers, but from end users and customers.
- 4) Balancing flexibility and planning - plans are important, but the problem is that innovative projects cannot be accurately predicted far into the future, because there are so many variables that need to be considered. A better strategy in the field of project planning is, therefore, the creation of detailed plans in the short term, i.e. for the next few weeks, very rough plans for the next few months and even more general ones in the long-term perspective. In this context, one of the main sources of problems related to planning is the irreversibility of decisions. If decision

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Chain method and the Open'er Festival organization, a master's dissertation written at the Institute of Organization and Management of the University of Gdańsk, Sopot 2016).

can easily be changed, it means that one does not have to try to stick to them exactly, making realization easier. In agile projects, one does not have to think about how to avoid the irreversibility of a decision - instead of making a final decision at a given moment, it can be postponed or formulated in such a way that it will be possible to change.

- 5) Empirical nature of the process - agile methods are based on empiricism, i.e. a non-linear, experimental process. In engineering sciences, most processes are defined, which means that they can be implemented according to a specific procedure and always give the same result. In the case of research and development projects or software development, processes are usually subject to multiple changes before the project is completed. Hence, they cannot be regarded as defined ones. Differences result from changes in requirements, technologies or changes in personnel implementing the projects.
- 6) Decentralized approach - decentralized management, as opposed to an autocratic style, is used in agile project management. This does not mean that subordinates become project managers. Management is always needed to remove obstacles in the path of project progress. However, it is recognized that the team members have sufficient knowledge to make operational decisions without the permission of the project managers.
- 7) Simplicity - agile teams always take actions leading to the achievement of goals in the simplest way. Simplicity is also due to the fact that it will be easy to change the project if necessary in the future. The rule is not to produce more than necessary, and not to produce documents that predict the future, because they may soon become obsolete. The more project documentation is collected, the more effort will be required to find the right information and update it.
- 8) Cooperation - agile methods include regular feedback from customers. Similarly, continuous cooperation between team members is necessary, requiring discussion and an exchange of knowledge.
- 9) Small, self-organizing teams - the agile team organizes itself. Tasks are communicated to the team as a whole and the team decides how to best execute them. The team discusses all aspects of the project. For this reason, it is easier to implement a project in small teams than in larger ones.

These are the principles guiding the adaptive approach. However, from the point of view of specific conditions, it is not possible to implement projects in a "purely" agile way in all sectors. In development activities, for example, this approach to project management is limited by legal conditions. At the same time, the agile approach to project management differs slightly from the Agile Organization concept (TRZCIELIŃSKI 2011). In this approach, this agility means: smartness, flexibility, intelligence and business cunning. Due to volume restrictions and the lack of application of three of the four above-mentioned elements of the agility concept of organization in the adaptive approach to project management, this thread will not be developed in the article.

The main difference between agile and traditional methodologies is the acceptance of the possibility of changing the design and the actual possibility of making this change at every stage of the project. Agile methodologies are therefore more adapted to the specifics of innovative processes (see WOJNICKA-SYCZ, SYCZ 2016; PYLAK, WOJNICKA-SYCZ 2017; WOJNICKA-SYCZ 2018). Simplifying a change is more effective than preventing it. The disadvantage of traditional project management methods is their complexity, whilst agile methodologies correspond to simplicity. It is easier to add something to the process during project implementation than to remove something during operation.

Traditional "heavy" methodologies are sequential: clients are included in the process at the end or at the beginning and end of the project. In agile methodologies - incremental (iterative) - feedback from customers is assumed at every stage. This approach develops prototype versions of the product that are not yet equipped with all functions and presents them to customers to identify areas of development. In traditional methodologies, documents presenting product functions are created.

The agile approach can often be described as "fluid", or incremental. An example of this is the Scrum methodology, in which the project team is assigned partial (incremental) objectives and realizes them in short sections of time. It is a kind of journey into the unknown because, knowing the main assumptions/goals of the project, they are modified together with the clients depending on the partial effects of the progress in the project.

However, this approach is not possible in real estate development in most cases. In order to get approval for the implementation of the project, the proposed solution must comply with the local spatial development plan and other legal acts, which requires the development of a detailed project plan. Customers also prefer to receive specific product proposals (even in several variants), which requires designing these variants taking into account the requirements of construction law. A bank will not provide financing without specific business plans of the project. Therefore, some, not even minimal but optimal level of planning before investing must be preserved in development. This is one of the main differences of the adaptive approach in relation to the "purely agile one". In addition, in development projects, the goals and ways of achieving them are known. Therefore, the use of "purely agile" methodologies in these projects is pointless (WYSOCKI 2009). However, the authors believe that the "closer" to customers and the market the company will be at the stage of project implementation, "listening" to their needs and responding flexibly to changing conditions, the higher the probability of such a venture succeeding. Therefore, it is at this stage of the development project, implemented in accordance with the adaptive approach, that as many agile elements as possible are used. The adaptive approach can therefore be characterized as containing elements of traditional and agile project management (CRAM, MARABELLI 2018). In conclusion: the adaptive approach is based on traditional planning and budgeting of the project, though with many implementation options depending on the market situation. It uses market research, taking into account the preferences of the surveyed clients, however its real strength is revealed during project implementation, where the real preferences of not only the surveyed but most of all the actual clients are foreseen in this phase (WYSOCKI, MCGARY 2005). In the further part of the article, details of this approach will be presented on the example of a project implemented in practice.

#### 4. The idea of the project

The assumption of the analyzed investment project was the construction of a modern, thematic holiday park<sup>3</sup>, consisting of 60 independent holiday houses and accompanying infrastructure. The project was carried out in the years 2015 - 2018 by a developer who specializes in the design and implementation of similar investments. The developer's experience made it possible to adopt realistic assumptions about the concept of the undertaking and allowed to avoid serious errors that could result in the lack of commercialization of the project. And so, the holiday houses were intended for sale as separate built-up properties with separate land and mortgage registers. The project also includes common areas with accompanying infrastructure, which includes, among others: a restaurant building; a recreational and sport complex - consisting of a volleyball court, an open swimming pool in the summer months and an outdoor fitness area, a playground for children, pavements, decorated greenery and lawns, as well as elements of small accompanying architecture (roofed bonfire sites, barbecue sheds, benches, garbage containers, lamps, plantings). Adding to the charm of the place is the fact that the developer uses natural terrain and spatial conditions, such as an existing natural lake, attractive terrain, and an existing dozen-or-so-year-old tree stand in the area where the whole complex was built.

In addition, in the project assumptions, the developer predicted the construction of a second artificial lake with an area of 2.2 hectares, along with an island where an exclusive residential building is intended for construction. The reservoir is to constitute a special fishery, which can be used by the people staying in the area of the resort. The entire resort, along with the plot on which the artificial lake was built, covers an area of over 7.5 ha. A plan of the center along with its implementation is shown in Figure 1.

The entire investment is a response to the needs of the real estate market in the holiday real estate sector. The sale of products is also intended for investors wishing to make direct investments in real

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<sup>3</sup> The architecture of the buildings is unified (the same character of the buildings from the outside) and clearly refers to regional and local Kashubian construction; the character of the leisure center gives it an organization based on tradition and regional culture (Kashubian, i.e. feasts and performances of folk groups, delivery of dishes and products by local hosts).

estate or wanting to diversify their investment portfolio. The developer guarantees a return rate of at least 7% per annum while being the later operator of the holiday park.

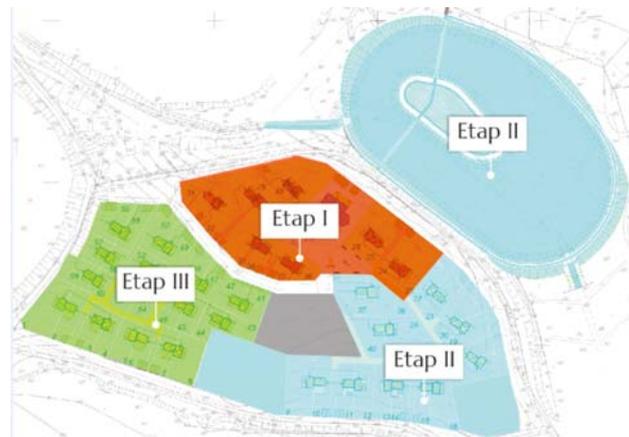


Fig. 1. Stages of the project. Source: Developer's documentation.

### 5. Elements of flexibility included in the Kashubian Ostoja project

For the needs of the project, a comprehensive technical design of the center was prepared, as well as a business plan in which a multi-criteria description of the basic spheres of the project, its surroundings, existing and potential competition and potential project risks were identified. The developer realized that due to the constant dynamic changes in the environment, changes in market trends and rapid changes in financial markets, it is necessary to apply a high degree of flexibility in the implementation phase. A manifestation of such an approach is adaptive management, which refers to making up-to-date decisions in response to the existing market situation. The elements of adaptive management during the implementation of the project are presented in Table 1.

Table 1

The elements of adaptive management in the implemented project

No.	The sphere of adaptation	The effect of adaptation
1.	Project implementation based on market demand.	The investment was divided into three stages with the possibility of completing the project after each of them in case of the absence of demand (three variants of the main plan). The reality turned out to be more favorable than the plan in the optimistic version predicted - the third (last) stage was completed before the planned date.
2.	Construction of additional facilities, i.e.: an artificial water reservoir, an artificial island, a restaurant and catering building. All of the above additional elements are covered by the building permit decision but their implementation by the developer is not obligatory.	Additional facilities that can be implemented in response to market signals flowing in during project implementation, in particular, in response to the development of the sales situation and the level of profitability obtained by the developer.
3.	Consideration of the customer's choice of the size of the property (it is important for customers who buy for themselves and their family, and do not treat the purchase as an investment) and the value of the	Matching the product to the preferences of the size and value of the property. Possible surface variants of the sold houses: 52 m <sup>2</sup> , 57 m <sup>2</sup> or 103 m <sup>2</sup> , with very different configurations of plot sizes in the range of 220 to 850 m <sup>2</sup> . The above configurations allowed a significant decomposition of the prices of

	property (which is most important for customers treating the purchase as an investment yielding a specific rate of return).	sold products in the range from 145 to 360 thousand PLN. The developer gave the client the opportunity to choose a particular home, taking into account the anticipated schedule of the investment.
4.	Consideration of preferences and wishes of customers regarding, among others: the distribution of rooms and installations inside the house, location relative to the direction of the world, proximity to the artificial lake, proximity to restaurants, playground, sports courts, and outdoor fitness equipment.	Full matching of the sold product to specific, individual needs of individual clients, taking into account the anticipated schedule of investment implementation.
5.	Considering the preferences of customers regarding the time of purchase of a particular house.	The customers have the option of booking a specific house well in advance, taking into account their financial capabilities and willingness to make investments in a strictly specified time.
6.	Admission, to a certain extent, of the individual character of contracts for the construction of individual clients' houses.	Planning activities in response to specific financial capabilities of clients during construction. In particular, the matching of contracts concerned payment deadlines for individual installments and securing clients' interests.

*Source:* own study based on the developer's documentation.

The smooth, ongoing implementation of all the activities listed in the table above, which are largely a response to customer preferences and needs, is binding for the developer and requires the proper organization of work. All operational activities of the developer are focused on providing customers with the maximum functionality of the purchased products, which is to be in line with their expectations.

As reality showed, it was not possible to predict all market conditions and preferences which are variable in time at the planning stage of the project. The ability of the developer to adapt to rapidly changing environmental conditions and market requirements was, in the end, the factor that caused the implementation of corrective actions that had not been planned at the planning stage. The effect of "listening to the market" (i.e. collecting and analyzing current information) is to make proper decisions based on them in subsequent stages of project implementation as well as in subsequent investment projects planned by the developer.

Implementation of the adaptive management model forced the developer to make far-reaching changes to the organization of his work, including changes of individual procedures and control techniques in the activities of individual employees. The requirements for the quality of work and responsibility for their decisions have clearly increased. This forced an increase in qualification requirements of employees and the necessity of conducting a series of trainings, among others in the field of effective interpersonal communication, conducting business talks, dispelling customer objections, handling complaints, etc.

#### **6. Advantages and limitations of using an adaptive approach to managing a development project**

The use of an adaptive approach in managing a development project by a developer brings both pros and cons. Undoubtedly, it is undisputed that most developers would like to concentrate on producing a uniform, standardized product and sell it on their terms with a satisfactory level of profit margin. Creating a standard product in large quantities (e.g. building repeatable houses in one location) allows the company to focus only on improving the repeatable construction process, which is a beneficial

solution for the developer. It also does not compel employees involved in its implementation to fulfill special requirements or develop competence. Such a situation can take place when the products produced in the development process sell well, when the developer's satisfactory margins are obtained. However, the real estate market is guided by its own rights. Each development project is implemented in a specific phase of the business cycle and in a specific segment of the real estate market. The developer must be able to determine in what market segment he is competing and what phase of the business cycle is ahead of him. In addition, it is known that there are no two identical properties, and customers are more and more demanding and can, under certain circumstances, set the terms for the developer. This is the case, for example, when, due to low sales and lack of interest in products, the implementation of a given development project becomes jeopardized. Table 2 presents the possibilities and requirements for the implementation of an adaptive approach in management by the developer.

**Table 2**

The developer's costs and benefits in applying the adaptive approach in managing development projects

Benefits	Requirements
Designing a product that will be economical to perform, attractive in appearance, functional and original in the eyes of customers, and thus effective marketing.	The need to invest time and resources in market research and active participation in project work in the preparation of project documentation (architect, constructor, installers, cost estimators).
Preparation of a business plan that will contain elements of possible adaptations in terms of schedule, financing, organizational and marketing solutions, and dealing with project risks.	The requirement to have factual and formal knowledge in the area of planning investment project skills. In order to maintain the reality of the assumptions, the authors suggest cooperation with independent specialists in this field.
Better matching of sold products to customer needs.	Ensuring proper organization of the developer's work, in particular in the field of customer service, and commissioning and control of construction works.
The possibility to offer a variety of properties in terms of space and prices.	Predicting product diversity at the stage of carrying out design works and developing an adaptive technical design of facilities.
The ability to create custom, original, individualized products.	Investing the time and resources spent on market research and anticipating product diversity at the stage of carrying out project work.
The possibility of individualizing the provisions of contracts with individual clients, in particular as regards the schedule of financing the purchase of real estate.	The requirement to provide financing and constant financial liquidity of the developer during the project.

*Source:* own study.

The main features of projects implemented in the agile manner include board support, taking into account the clients' wishes in the design process of the final version of the product and excellent

project management. These projects also try to use the individual and specific potential of individual team members and entire teams, rather than harmonizing them according to the organization's requirements. Agile projects are also based on direct communication, as this is perceived as a better channel of knowledge transfer and mutual inspiration than the written documentation characteristic of traditional methodologies. In traditional methodologies, projects are perceived to be successfully completed if they end within a certain time and within a specified budget. In agile methodologies, it is important that customers perceive that they have received a value that exceeds the cost of the project.

Despite the fact that agile methodologies have been used for about 30 years, they have limitations besides clear advantages. The basic limitation is the difficulty of their application in the case of the implementation of larger investment projects.

## 7. Conclusion

The project presented in this article and its implications related to the introduction of adaptive management elements prove that this approach is not easy to implement by the developer, but undoubtedly is one of the success factors of the presented project. This approach usually generates unforeseen situations. It creates, in the phase of the implementation of the project, a non-standard, unplanned and unforeseen task, requiring quick, sometimes risky and costly decisions, where communication between the project implementers and clients is one of the key success factors. However, in the final analysis, customer satisfaction is more significant than in the case of projects carried out in a traditional way, because at the end of the project the customers' needs are effectively taken into account. One of the basic goals of this approach is, therefore, to maximize customer satisfaction, which also lives up to the latest theory of marketing management.

The adaptive approach also brings positive effects for the developer himself in terms of extorting better and more efficient work organization, the necessity for professional development of employees, as well as a number of positive effects in the area of potential development possibilities of the developer's future products.

As presented on the example of the Kaszubska Ostoja project, the adaptive approach in managing development projects is, under specific conditions, connected with obtaining many benefits for various project partners (beneficiaries); the authors of the article, under the influence of the analyses and conclusions resulting from them, therefore recommend using the adaptive approach to managing investment projects in development activities whenever it is justified from the point of view of the specificity of the ongoing projects.

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