



## **WHY HYBRID PROJECTS FAIL - DEVELOPMENT OF A RETROSPECTIVE ASSESSMENT METHOD FOR HYBRID PROJECTS**

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### **Abstract**

The project business in the IT sector is constantly growing and the budgets of IT departments are getting bigger and bigger, even though according to studies only 16,2% of all projects are successful. (Standish Group, 2015) There is a trend that tries to mix the classic and agile project methods. The target of this approach is to apply best practices of those two methods (e.g. faster “time to market” and flexibility) while trying to keep the organizational structures and -processes (Komus et al., 2015). A difficulty is that there is no exact definition of how a hybrid project should be executed. Another problem is that the role of project manager does not exist in the agile approach.

The other challenge is that projects are normally measured based on key performance indicators. But there is no clear definition on what is a key performance indicator and what is not. Therefore, projects are not comparable with the use of key performance indicators. (Parmenter 2015). Do to this lack of measuring; project risks are increasing threatening project success (Csiszarik-Kocsir et al 2017)

According to studies there are eight reasons why projects fail and by means of expert interviews those eight reasons have been confirmed and the list was expanded, including four additional reasons (Coolman A. 2016).

This paper presents a review system for hybrid projects with which it is possible to check if projects have failed due to known obstacles. In addition, two possible definition models for hybrid projects are presented in detail, as well as the possible results of each individual phase (start, execution and close-down) that every project passes through. By means of literature research and interviews, stumbling blocks were identified as to why projects could fail. Based on these stumbling blocks, questions were developed for a retrospective assessment method. Based on these questions, an expert can evaluate whether the failure of the project coincides with one of the identified obstacles/reasons. In an excurs, possible key figures for hybrid projects are presented.

**Key words:** *hybrid project, projects fail, key performance indicators,*

**JEL code:** H43 (project evaluation)

### **Introduction**

The 2015 Chaos Report found that only 16.2 percent of all projects could be considered successful. An additional 52.7 percent has come to an end, but at least one of the aspects was outside the magic triangle (quality, time and cost). The remaining projects were never completed and stopped in between. (Standish Group, 2015)

When the study published by the German Project Management Association (GPM) is used, 39 percent of the projects in the surveyed companies are executed with using a hybrid approach. In 25 percent of the projects, a situational approach is selected (classic, agile or hybrid). If one assumes that the 25 percent can be split linearly, one recognizes that more than 47 percent of the projects in the surveyed companies are handled with a hybrid approach. (Komus et al., 2015)



The challenge of hybrid projects is that they try to do the splits between two mythologies. On the one side, there are the existing structures and organizations of a company, on the other side one tries to use the advantages of the agile approach. For this purpose, an attempt by Mr. Habermann was published, in which the interaction between an agile approach and a classical approach in a laboratory simulation was recreated. (Habermann 2013) The result of this simulation containing 26 teams and showed, that a hybrid approach was superior to full agile or full classical project approaches. Based on this conclusion, it seems that hybrid models can become more common in the future.

## **Definition of different project approaches**

### **Generic definition of a project**

In our day and age, the term project is used more and more often. Almost every activity or venture is now defined as a project. For projects, there is a very clear definition. It is a project when most of the below points is fulfilled: (Patzak et al., 2014)

- New
- Goal-oriented
- Demarcated
- Complex
- Dynamic
- Interdisciplinary

At the beginning of a project the fundamental decision must be made as to which approach one wishes to use in the project. There is a classic, agile or hybrid approach to choose from. Below a few forms of approaches are presented

### **Classic approach**

The best-known methods in the classical approach are the waterfall model and the V-model. Both models were created in the 1950s and are still used repeatedly. (Timmingier et al., 2016)

There has also been a definition of standards in project management. World widely known standards are the PMI (Project Management Institute), the IPMA (International Project Management Association) and PRINCE2 (Axelos).

### **Agile approach**

In 2001 there was a meeting of various representatives of the agile movement. During the meeting, they agreed on a catalog of 12 principles and four values, that must be adhered to. (Beedle et al., 2015)

The best known of the agile project management methods is SCRUM. During the article, the SCRUM model of Gloger is discussed, which differs from the conventional SCRUM method. The first difference is that the roles are not just the following: (Gloger 2011)

- SCRUM master
- SCRUM team
- product owner

But also, the roles:



- customer
- user
- manger

The customer is the person of the client, this is usually a manager who commissions the project. The user is the user who works directly with the solution. The manager is the resource manager in charge of the SCRUM team members and releases the resources, furthermore he / she supports the SCRUM master if there are problems outside of the team. The second difference is the number of artefacts. (Gloger 2011)

The agile standard approach has the following artifacts:

- vision
- product backlog
- sprint backlog
- impediment backlog
- product increment

With Gloger's adapted approach, the artifacts have been extended to the following:

- sprint goal
- selected product backlog
- tasks
- release plan

The sprint goal defines the goal of the sprint. The Selected Product Backlog is a list of all functions that are to be implemented as part of a sprint. In the tasks, the individual steps are defined, which should be implemented during a sprint. The Release Plan is an information element and not a planning tool in the classical sense. It indicates when which backlog item should be delivered. (Gloger 2011)

### **Hybrid approach**

There is no definition or standard that can be used comparatively for the hybrid approach. The most important feature that must be present is that elements from the agile and classical method are used. The relationship between the approaches to each other does not matter. Helpful in defining which approach should be the main method is the Timinger and Seel model. Based on this, a decision graphic was created with which it can be ascertained whether a project should be carried out in a more classical or agile way. (Timminger et al., 2016)

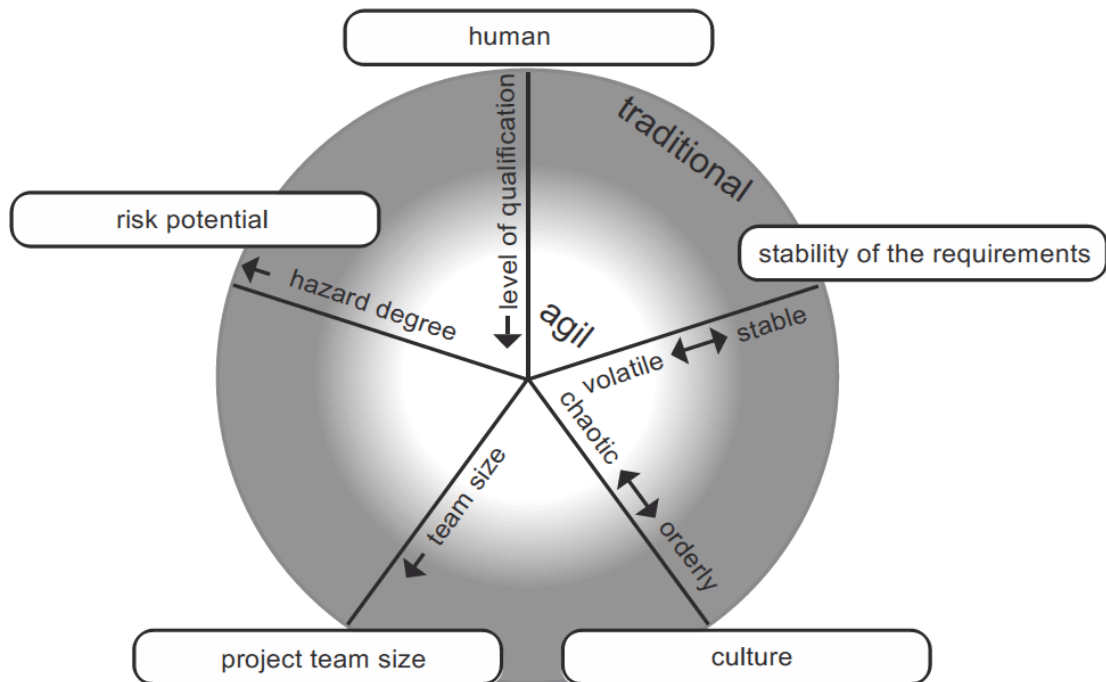


Figure 1. *Agile vs. classic approach according to Timminger*

A possible project case presented in the hybrid context could be: The projects starts with an agile approach. This is because the scope of the project could not be defined exactly at the beginning. With the progress of the project, the scope can only be defined more precisely and it is possible to switch to a classic model later. (Timminger et al., 2016)

### Phases of a project

No matter which approach is followed in a project. A project always goes through the same three phases: start, execution and conclude.

The focus of the start phase is the project setup. During this phase, the following documents may arise: (Patzak et al., 2014)

- project application
- project environment analysis
- project definition and contract (including objectives and not objectives)
- profitability calculation
- project calculation

During the implementation phase, the actual implementation of the project takes place. Here are the following documents: (Patzak et al., 2014)

- work breakdown structure
- object structure concept
- work package definition
- GANTT chart
- milestone plan
- controlling
- status reports



- user acceptance test

When completing a project, most of the following documents are used: (Patzak et al., 2014)

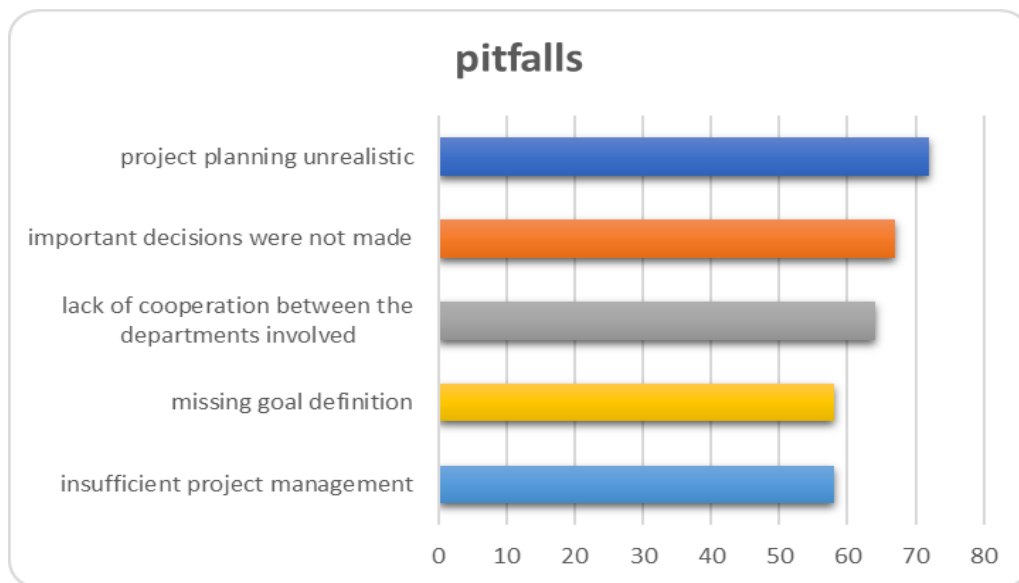
- lessons learned
- after project calculation
- open issues
- final report

### **Pitfalls**

Based on an understanding on project approaches and phases a literature research is used to identify most common project challenges.

#### **Reasons for failure (literature)**

According to the study by Hays, about 15 percent of all projects fail. As the top five reasons why projects fail, the following were named: (Schabel 2015)



*Figure 2: Pitfalls according to Hays study*

Ashley Coolman has named the following top five reasons: (Coolman A. 2016).

- poor communication:  
This point aims at the missing or incorrect communication between essential stakeholders.
- underestimate deadlines:  
Incorrect or non-existent risk management or project planning may cause problems or situations not to be properly addressed or the necessary buffers not considered.
- inability to recognize the essential details:  
In most cases, project managers have the big picture of the project in mind, but they like to forget the detail points that can have a major impact on the project.



- not helpful teams and technologies that just make everything more complicated: Often you must work with teams and the technical support or software that you get. In some situations, this can lead to problems that significantly endanger a project.
- Inattentive management  
 Even if a project is going well, there should never be a situation where the project is no longer being reviewed by the project manager or project manager. As a result, you run the risk of not recognizing changes in the project in time and losing a successful project

The reasons for the other points are summarized as follows:

Phase	Pitfalls according to study	Pitfalls summary
<b>Start</b>	Inattentive management	Inadequate project management
	Insufficient project management	
	Poor communication	Side by side instead of together
	Lack of cooperation between the departments involved	
	not helpful teams and technologies that just make everything more complicated	Wrong team composition or software in the project
	Important decisions were not made	Decisions are postponed
	Missing goal definition	No clear goals defined
<b>Execution</b>	Underestimate deadlines	Unrealistic and wrong planning
	Project planning unrealistic	
	Inattentive management	Inadequate project management
	Insufficient project management	
	Inability to recognize the essential details	Project details are ignored
	Important decisions were not made	Decisions are postponed
<b>Conclude</b>	none	none

Figure 3: Pitfalls according to literate

### Reasons for failure (expert interviews)

The main question of this research is, about collecting pitfalls and challenges of especially hybrid models. Therefore, industry experts, managing hybrid IT projects have been interviewed according the following focal points:

- 1) Do the collected pitfalls of classic projects also count in hybrid projects?
- 2) Which additional or special pitfalls can be named in hybrid project approaches?

The interview was conducted with several experts. All experts have a working experience of at least 15 years in project management and are thus able to provide competent and representative information. In the interviews, the following stumbling blocks were uncovered:

The following results can be mentioned:



- 1) All pitfalls detailed in the literature research are also very present in hybrid project approaches. Even more, due to high interaction in agile teams, the pitfalls are even more sensible and need more care by project managers.
- 2) In addition to this, the bellows additional pitfalls have been mentioned and crosschecked by all experts:

Phase	Pitfalls
<b>Start</b>	Schedule time reserves for financial reserves
<b>Execution</b>	Communication in the project
	Goals and non-goals are softened
	Insufficient qualifications in the team
<b>Conclude</b>	none

Figure 4: Pitfalls according to expert interviews

### Conclusions, proposals, recommendations

The following tables present the most common challenges in hybrid projects and therefore can be used as an retrospective assessment method of failed projects. An expert who deals with a hybrid IT project can use these lists to examine critical project areas in a targeted manner and to identify weaknesses in the project. The third column (possible source of knowledge) also helps an appraiser with the analysis.

#### Phase Start

Pitfall	Question for detection	possible source of knowledge
<b>Inadequate project management</b>	Was a plausibility check made for the theoretical scope of the project? Can the project theoretically be based on time and with the known scope?	charts / graphs
	Was the project leader included in the agile part of the implementation and, if so, in what role?	charts / graphs
<b>Side by side instead of together</b>	We have created an understanding of the project among all stakeholders?	minutes and contract
<b>Wrong team composition or software in the project</b>	Has it been agreed who will take over what role in the implementation and how the tasks will be distributed?	minutes and charts / graphs
<b>Schedule time reserves for financial reserves</b>	Has the project plan been created and compared with the business case or checked to see if the result matches?	contract and charts / graphs
<b>Decisions are postponed</b>	Has it been defined which agile approach is used?	charts / graphs
<b>No clear goals defined</b>	Did the meetings in which the first rough product backlog is defined took place? Prerequisite for the plausibility check.	minutes and charts / graphs



### Phase Execution

<b>Pitfall</b>	<b>Question for detection</b>	<b>possible source of knowledge</b>
<b>Unrealistic and wrong planning</b>	Was the planning adapted to the actual circumstances during the project?	reports and charts / graphs
<b>Inadequate project management</b>	Was Controlling set up and executed at a reasonable interval?	reports
<b>Goals and non-goals are softened</b>	Was there a change management and was the impact of changes on the whole project considered?	reports and charts / graphs
<b>Project details are ignored</b>	Did the meetings and ceremonies that match the approach take place?	minutes and charts / graphs
	Have all participants fulfilled their tasks and roles?	minutes and reports
<b>Insufficient qualifications in the team</b>	Do all project participants have the necessary qualifications for their position?	CV and project structure
<b>Communication in the project</b>	Did the meetings and ceremonies that match the approach take place?	minutes and charts / graphs
<b>Decisions are postponed</b>	What was the speed at the escalation of problems by the responsible person? Has there been a timely response and solutions or has it been postponed?	minutes and reports

### Phase Conclude

In the conclude phase no stumbling blocks were named by the experts or in the literature. However, in the opinion of the author, it is important that a project also has an end, as this is often forgotten in practice. For this reason, the author includes the following stumbling blocks in the method.

<b>Pitfall</b>	<b>Question for detection</b>	<b>possible source of knowledge</b>
<b>Project not closed</b>	Were all project participants sorted out of the project?	minutes and lessons learned
<b>Help desk cannot support the solution</b>	Did an orderly transfer from the project team to the support take place?	minutes and documentation

With the three tables above, the assessment system for hybrid projects has been completed.





## Conclusions

Realizing, that hybrid approaches increase the amount of pitfalls, as well as the sensibility of them, raise the question, whether hybrid models are really worth doing. Do the positive effects in flexibility and speed outweigh the negative effects of pitfalls? This question could be part of future research.

Furthermore, a weakness of this research is the low amount of experts interviewed. A quantitative interview with a high number of project managers, done internationally would be needed to really gain reliability.

Therefore, this research shall be seen as a starting point in a rapidly developing field of project management approaches.

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