AGREEMENT - An Approach for Agile Rationale Management

Michaela Gluchow

Fakultät für Informatik (TU München) | Cassini Consulting
michaela@gluchow.de

Abstract: Agile methods affected IT project management in many ways. This also applies for the area of decision making processes. In agile projects it is more common to spread the responsibilities equally among the project roles, instead of distributing it along hierarchies. Further groups are now more often in charge than before. This led to an increased importance of information sharing and transparency.

Coming from this situation, we assume that agile methods would benefit from the utilization of Rationale Management (RM). As none of the existing RM approaches seem to do the job right away, we propose our own approach called AGREEMENT, that specifically copes with the needs of agile methods. AGREEMENT is currently in the state of a rough draft, but early case studies already strengthened our hypothesis. This paper describes the current status of AGREEMENT as well as which actions are planned to reach a refined, mature version of it.

1   Motivation

Agile methods changed the way of managing IT projects drastically. This also includes the way of decision making. Decisions are no longer made hierarchically, but are distributed across the different project roles. Further it is more usual that a group of people rather than a single person is in charge of making decisions [MB09]. Therefore information sharing and transparency across all stakeholders is more crucial than ever before [Hal07].

The idea of Rationale Management (RM) is to support this subject area [DMMP06]. Since Kunz and Rittel started with IBIS in 1970 [KR78] a variety of approaches[1] was developed. Although a lot of attempts were undertaken, none of these approaches made its way into IT project management (PM). Prevented was this amongst others by the widespread opinion that RM is time-consuming, disruptive and too inflexible [DMMP06].

This leads to the hypothesis on which the herein described thesis is based on. The hypothesis is, that agile methods would greatly benefit from RM. But unfortunately there seems to be no existing approach that would do the job. As they were even too heavyweight for classical IT PM approaches, they are not considered to fulfill the needs of agile methods. Therefore this thesis develops AGREEMENT[2], the first specifically agile RM approach.

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[1]Examples: Procedural Hierarchy of Issues (PHI); Questions, Options, and Criteria (QOC); Decision Representation Language (DRL); Design Recommendation and Intent Model (DRIM). [DMMP06]

[2]AGREEMENT is an acronym for **AG**ile **R**ational**E M**anagem**ENT**

In our opinion AGREEMENT will only be successful if it provides a good usability [Rou07]. Further it has to blend seamlessly into existing management processes in order to be accepted by the users as integral and important part of PM. But AGREEMENT should not reinvent the wheel. Instead it should combine existing solutions, that fit to the circumstances, with new ideas, that fill the remaining gaps.

The following sections describe the current draft of AGREEMENT including two case studies and give an overview of the further course of action.

2 Early Results

The idea for AGREEMENT arose in the context of the large[3] project courses we conduct each semester at the chair for Applied Software Engineering (TU München). As project managers we realized, that it is hard to keep an overview of which decisions are made, by whom and why. Further we noticed that students often struggle with decision making processes. If they at all apply an structured approach, they often tend to loose track within it.

In the winter term 2012/2013 we therefore started with the integration of RM aspects into our courses. As model we used an adapted version of the RM model introduced in [BD09]. It is based on issues as root elements and further consists of proposals, criteria, and resolutions (Figure 1).
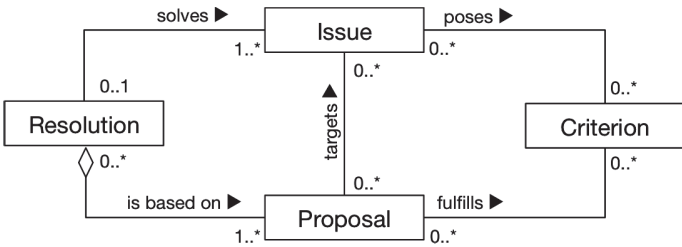

Figure 1: Model used in the first version of AGREEMENT

One of our goals was to blend RM seamlessly into our PM. As meetings were one of our central organizational elements, we made it part of them. Our meetings consist of a status report (similar to the daily Scrum) and a discussion part. In the status report issues replaced blockers/impediments. Further they were used to report on important decisions, that were made since the last meeting. In the discussion part, issues build the basis in form of agenda items.

To support the tracking of work, requirements as well as of rationale we used the project tracker Atlassian JIRA [Atl13] as tool. Each AGREEMENT model element was mapped

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[3]From 40 to 90 students organized in different projects and teams with 4 to 8 members.

to an individual JIRA element. These could be linked amongst each other with labeled links according to the model. Also linking to all other elements like requirements or action items was possible, so that AGREEMENT could be used to track open issues to basically everything done in the project.

Overall the general idea of integrating RM into the course went well, accept that we had big usability problems. Having one JIRA element for each model element caused too much work in creating and linking, as well as it led to an unclear representation. Further the opportunity of linking elements of different decisions (e.g. linking one resolution to more than one issue) amongst each other was under-utilized.

In the follow up case study we therefore tried to improve the usability by combining all model elements in one JIRA element. We further advanced the support of Scrum specific practices by integrating AGREEMENT into the requirements elicitation process. Open questions on user stories were formulated as issues. Only if all issues linked to an user story were resolved, this story was considered as fully understood by the team and therefore detailed enough to be taken over into the sprint backlog.

Both studies showed with anecdotic evidence, that it is possible and useful to integrate RM into agile projects. But they also made clear, that seamless integration into the processes as well as good usability are crucial elements for its acceptance. This is the starting point for the further development of AGREEMENT, which is described in the following.

3   Course of Action

The early versions of AGREEMENT were developed from a very pragmatic point of view and therefore mainly considered project specific needs. Now AGREEMENT has to be enhanced in order to support various agile methods. The first step to reach this is to formulate appropriate requirements. The following sources will be taken into account.

– **Agile methods**
 Decision making processes of two to four well-established agile methods will be analysed. Questions that should answered here are: Which processes exist? How are the decision making responsibilities handled? Where can these agile methods benefit from RM? The so found requirements will be enriched by general guidelines retrieved from the agile mindset.

– **Rationale management**
 Similar to the agile methods, the area of RM will be examined. This includes on the one hand a general overview of RM and its usage scenarios. On the other hand concrete RM approaches will be analysed regarding their benefits and deficiencies as well as their reusable elements. Special attention will be turned to mentioned usability issues of the approaches.

– **Tool support**
 Good tool support seems to be another crucial element of an RM approach. If possible, AGREEMENT should be integrated into already used tools, as we hope to

reach a better integration into existing processes. The tool solution should be easy-to-learn, easy-to-use but powerful [Rou07]. Another goal is to automate AGREE-MENT as far as possible in order to reduce the workload associated with RM.

– **Social factors**
Besides RM's reputation of being too heavyweight, social factors are assumed as another reason for not being successful. Therefore these also have to be taken into account. Possible phenomena to look on are social networks, active discourse, culture of blame, or group thinking.

The so elicited requirements will then be implemented in the current version of AGREE-MENT. The goal is to provide a full-fledged RM approach that suites different agile methods. AGREEMENT should further include proposals for tool support for capturing, formalizing and accessing rationale [DMMP06].

To ensure that AGREEMENT at the end fulfills the given requirements, it should be evaluated frequently during the development. But this poses a big issue as we are not sure how to acquire testing grounds that produce scientifically valuable results. Case studies seem in theory to be the best way. But to find appropriate participants and setups is very complex. Another idea is to conduct surveys, which introduce AGREEMENT and then retrieve opinions of practitioners.

In summary one can say, that first promising steps towards an agile RM approach are made with AGREEMENT. Two case studies showed anecdotally, that agile projects benefit from RM integration. But they also identified factors like usability, adaptability and seamless integration, that have to be present in order to be successful in the long run.

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