

Exploring the opportunity for a hybrid methodology in project management: a focus group approach

N Bagiu¹, S Avasilcăi¹, L Alexa¹

¹ Gheorghe Asachi Technical University of Iasi-Romania, Engineering and Management Department, Blvd. Dimitrie Mangeron, No. 28, 700050, Iasi, Romania

neculai.bagiu@tuiasi.ro

Abstract. Nowadays, project-based work is no longer a challenge for a today company. Optimizing the workforce, better managing the results, delivering in time, quality and budget (the triple constraints [1]) are just a few of the advantages. Still, to re-organize an entire company into a project-based organization requires a lot of efforts and energy across its departments and teams. However, some companies step forward and change the project management methodologies multiple times. That brings another wave of changes, stress and reorganizations combined with a complex organizational phenomenon, which requires far more effort than just to replace the current tools and technologies with new ones [2]. Thus, the main purpose of this paper is to reflect and present the results of the workshop called "Going Agile – the journey", which was held on Project Management Forum 2019, a Conference organized inside of Continental Automotive Romania for all project managers working in the company. Based on the focus group technique there was identified the main struggles associated with the adoption of Agile methodology within Automotive Industry, the similarities with the plan-driven methodologies and willingness to advance the agility in company's daily working life.

1. Introduction

The main concern in adopting Agile methods adoption within software companies has increased due to their promise for higher customer satisfaction, lower defect rates, faster development times and openness to change [1]. The Collabnet and Versionone reported, in their latest State of Agile Report [2], that there are 13 reasons to adopt Agile methodologies (based a yearly survey with professionals from the industry) like: Accelerate software (74% of the respondents), Enhance ability to manage to change priorities (62%) or Increase the productivity (51%) and also there are 13 benefits like Ability to manage to change priorities (69%), Project visibility (65%) or Business/ It alignment (64%) equal with Team morale (64%). Due to the different philosophies and scopes, a 1:1 mapping between Agile methods and practices and the standards is not easy. The specific requirements of the standards e.g. with respect to scheduling, linking information (traceability), independence of quality assurance, reviews, etc. makes it necessary to adapt the existing Agile working methods in order to satisfy these requirements. As a consequence, this may lead to reducing Agility within a company [3]

The most used development model in automotive industry is V-cycle model – that was derived from the waterfall model [4]. This practice is rooted into the very origin of the industry where an increased number of activities have mechanical parts to be produced and assembled [5]. By developing electronic and then software parts in automotive industry, the major players in the industry opened a new chapter in applying the traditional methodology or seeking to find new methods to update the current one. This

led to the fact that "the life cycle of products does not respect anymore the profile of the classic curve, this curve turned in the profile of a saw tooth. Before ending the phase of introducing the product on the market, the product is considered already outdated" [6]. The automotive industry is no longer about producing and assembling mechanical components only, but also producing, testing and integrating some other parts, such as sensors, electric motors, software and, more important, algorithms. Therefore, it seems to be a real challenge to select and apply a project management methodology that fit all needs. Another big constrain came from the fact that this industry deals with humans life, the responsibility to implement an efficient break system based on robust algorithm transposed into a software component requires high quality standards in developing, testing and validating the results which do not dependent on time of development, openness to changes or customer satisfaction at that time. The V-cycle model development was recently adopted as the reference model that can be used for ISO26262 [7] for functional safety critical systems [8]. On the other hand, the automotive industry proposes a new paradigm of transportation where every actor – cars, infrastructure, Vulnerable Road Users (VRU) – produce and exchange an enormous quantity of data computed into cloud computing and artificial intelligence clusters to predict the behavioral model, which further will be used in order to decrease the number of accidents and lives lost. This exert an enormous pressure on the industry to open up to innovation, even co-innovation or open innovation, to the fast-delivery methodology, in a reliable manner and customer-oriented products.

2. The context of the research

Continental AG it's a German company that develops intelligent technologies for transporting people and their goods. Founded in 1871 in Hanover [9] as joint stock Company, the main area was manufacturing soft rubber products rubberized fabrics and solid tires for carriages and bicycles. In 1892 Continental was the first German company to manufacture pneumatic tires for bicycles and in 1898 start the production of pneumatic tires for automobiles, in 1943 the patent application for tubeless tires was filled, in 1974 start producing different rubber automobile parts like gaiters, conveyor belt, hydro mounts—special bearing element, etc. in 2007 acquires Siemens VDO and become one of top five suppliers in the automotive industry worldwide. "As a company that is 145 years old history, Continental has lived through a number of changes and has shaped many of them itself. History teaches us that only companies with deeply rooted origins and values can confidently shape their future successfully," declared Dr. Elmar Degenhart [10], chairman of the Continental Executive Board, at the start of the project aimed to reviving the History and Tradition of Continental AG. For Continental AG the seven strategic dimensions are [11]: 1). Value creation; 2). Regional sales balance; 3). Top market position; 4). In the market, for the market; 5). Balanced customer portfolio; 6). Technological balance; 7). Great people culture. In 2019 the corporation registered the following financial numbers in sales of €44.5 billion [12] in five divisions: Chassis & Safety, Interior, Powertrain, Tires, and ContiTech. In 2020 Continental started a new reorganizational project where the Powertrain division was listed as an innovative Continental's spin off company – Vitesco Technologies and the other four divisions were organized into two groups [13] Automotive Technologies, with Autonomus Mobility and Safety and Vehicle Networking and Information business units and Rubber technologies with Tires and ContiTech business units. Continental count 433 location in 59 countries across the world and nine of them in Romania, with more than 241.000 employees in production and also in R&D areas.

The business of the company is mostly project-based structured and with the main concern for its customers. The typical project comprises more than three large mixed teams from minimum two different locations. Therefore, there is a large number of project management professionals structured into different levels (junior/ senior, team leader/ group leader, etc.) and areas of expertise (Software PM, System PM, Tester Manager, Software Project Quality Manager, Integration manager, etc.).

Romania have almost 1000 project managers across all locations and the main methodology implemented in the company's project is waterfall – V cycle - wide used into automotive industry. In 2012 there were some initiative to adopt Agile – SRUM method in some business units as a request from customers, and to minimize the risk of changing the requirements. Starting from there, the initiative

grew and going Agile became a big topic in the company. Still there are a lot of business units and projects using V-cycle, that is producing results and is covered by quality process which are well-known in company world-wide. However, the change is slow and for some business areas it's not started yet.

3. Methodology

The Focus group technique emerged as a qualitative data collection approach and a bridging strategy for scientific research and local knowledge [14]. Focus group discussion is perceived to be a "cost-effective" and "promising alternative" in participatory research [15] and it offers a platform for differing paradigms or worldviews [16] [17]. Sociologists and psychologists have used the method since the 1940s (e.g. Merton & Kendall, 1946 [18]; Merton, Fiske & Kendall 1956 [19]).

Focus group discussion consist of four major step process [20]:

3.1 Research design

The traditional Project Management model defines the tasks to be performed along with the desired outcomes of each project phase and assigns the roles to individuals who will perform. This model produces a large amount of documentation, the communication in project is formal, the customer plays an important role in describing the specifications, mostly. In a different way Agile method deals with unpredictability by relaying on people and their creativity rather than on processes [21]. While the standard model focuses on the product, processes and projects Agile relies on the team and the human factor [3]. "A Hybrid approach will increase the end results, improve the delivery of customer requirements and help the organization realize its strategic imperatives" [22].

The main purpose of the research was to collect structured information about the challenges that the project managers face in applying existing project management methodologies, good practices and suggestions for improvements. The structure of research was built on three components common to every project management methodology: roles, tools and processes. Also, it was relevant to understand their dynamics during project phases – four phases in the case of traditional project management approach and three for Agile approach. Completing the structure, if necessary, is another output of this research.

3.2 Data collection

The focus groups sessions were organized in the workshop that was presented during the PM Forum 2019 – a Continental internal conference focused on project management tools, techniques and best practices. The conference brought together almost 100 Project Managers, Team leaders and Managers from all Continental's Romanian offices. Going Agile – the journey workshop had 32 member who participated and were splatted for two hours in 4 small focus groups and presented their results at the end of each iteration of the workshop. The challenge of the workshop was How to craft a path that lead a project/ portfolio/ company from plan-driven methodology (usual known as traditional methodology or waterfall methodology) to a people centric approach (the case of Agile, usually SCRUM but for larger organizations - SAFe)

It was structured in four iterations with different themes/ questions addressed to the focus groups: In iteration one we use a general presentation and the focus was to create a space where all participants could express their feelings about the MP methodologies used, there could be identified the expectations from the focus groups and clarified the used terms. All the experiences and specific cases were welcomed into discussion with the purpose to prepare the audience for the next steps. The participants did recognize the importance of a robust project management methodology – V-cycle – however they did not exclude also the need to be more flexible with client's requests, continuous delivering and integrating the sprint results, better team organization which could be brought by SCRUM methodology. The structured way to capture the inputs was agreed by audience.

For iteration number two the participants were splatted into four groups (2 groups with participants working in waterfall methodology and 2 groups with participants working in Agile environment). Based on overall presentation and their valuable work experience in the area the participants were asked to list

the most used tools, processes and roles in their daily work as project managers. It was easy to see the multitude of the roles (11), tools (11) and processes (15) listed by teams analyzed the traditional methodology versus less for those analyzed agile: roles (4), tools (6) and processes (13). Those findings were briefly presented by each team at the end of the iteration.

In iteration number three the participants were asked to analyses and write down on flipchart paper, for each phases of the projects, the three advantages and three disadvantages of using each of methodologies roles/ processes/ tools. This was a time for huge debate in groups to find-out and refine those. Some of the mentioned advantages were: "sprints retrospective have de opportunity to collect lesson learned in very that moment", "in Agile work frame we can see a clear prioritization", "clear and structured quality process" and disadvantages: "to complicate and time consuming development process", "too many meetings", etc. Those findings were briefly presented by each team at the end of the iteration.

For iteration number four the participants were re-organized into two big teams: one team with all participants using Agile and second one with all participants using Waterfall methodology. The challenge was to imagine a brand-new methodology (a hybrid one), which combined the roles/ tools/ processes from both – Agile and Waterfall – and which fitted their current needs in order to deliver robust projects in time, budget and quality. Even the task wasn't complete in given time slot, the teams struggled to combine the best elements of both methodologies in order to create a hybrid one. One proposal used the clarity and structured approach to initiate, define and closure traditional phases in relation with incremental agility of execution phase in project development cycle. The findings were presented by each team at the end of the iteration.

3.3 Analysis and reporting of results

Some of the findings resulted from discussions:

- There is no "absolute" and "infallible" methodology, something that fit to all
- None of the methodologies used (Waterfall or Agile/ SCRUM) perfect fit the need
- Even both provide enough tools to work with, not all these tools are used
- There is a lot of need of clarification regarding knowledge from both areas: waterfall / agile
- Even changing the paradigm it's painful; it's hard to identify what are strong/ week points of each -> to minimize the impact;
- The participants demonstrated a strong knowledge about the topic. They were able to engage deep technical debate at debrief time.
- The debates showed the strong commitment of participants toward the project's goals, teams, quality, etc.
- The participants involvement in entire workshop make a huge contribution in understanding the current situation and prepare a real approach regarding a paradigm's change
- Not the methodology is the problem, but how to make decision in applying this into a project, how to transfer the knowledge and involve the team members into changing process, how this change affect the entire business, are some of the "powerful" questions
- Easy to observe what is missing but hard to craft a new approach that fits the need. It's needed to think twice when you need to change

3.4 Reporting of results

The full report was released and sent to organizers. This was uploaded in the workshop's materials space and distributed to all participants.

4. Conclusions

A better understanding of the new approach, Agile or Hybrid one, can improve the awareness toward project's scope and objective, inside the project team. To reach an acceptable understanding level, is needed more effort in formal training and coaching, in a customized and optimized manner.

For the company it's important to understand the not all projects are similar. The main concern should be manifested especially in analyzing stage and deciding which project needs a different approach and then create space for "special" projects with "special approach/ needs". Thus, by supporting in multiple ways e.g. methodologies, tools, role, those projects will be able to deliver faster, and maybe easier, the expected results.

Another hot topic is standardization of project management methodology. Where standardization didn't add value, we need to consider to blend/ combine/ hybrid the methodology to bring better results. It's important to prepare the organization for these new approaches with knowledge and proper resources even the preparations are never finish or enough.

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