

Software Engineering - UE19CS302

Assignment-1: A case study about AGILE-SCRUM methodology

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Section: H

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- 1) a) *The areas where Service Inc. did not meet the intent of Agile Manifesto are:*
- There is no mention of Service Inc. showcasing a working software or a working prototype frequently to their clients. Rather they just delivered the final product, which deviates from the agile manifesto.
 - There is a mention that it took the help of online platforms to discuss the task list between the scrum master and the team and feedback. Whereas, agile manifesto strongly believes face-to-face meetings and discussions to be more effective.
 - There is also a mention that even though product owners worked on products of the customers for a very long time, they actually never met a customer, which supports the above two conclusions made. They neither showed them their working progress nor had face-to-face meetings.
 - Agile manifesto is designed in such a way that it is flexible with change of requirements, even if the product development phase was well underway. But according to Product Inc.'s SVP, "Service Inc operates on building air tight requirement, tends to freeze it before committing their resources" and there is no evidence that this culture has been rectified in the report by Mr. Stan.
 - Senior Inc.'s most of the teams had to stall and had been upto pace only after 1st week, as it clearly mentioned that the first task list was only finalized after 1st week of sprint. This suggests that maintaining constant pace with regards to all teams working on the project, which is one of the principles of agile manifesto, was not maintained right from the word go.
 - The scrum master doesn't determine what will be done, how it will be done and when it will be done. Instead the scrum master helps everyone to use scrum effectively and increase transparency. But it is clear from the tasks done by scrum masters in Service Inc. in the report provided by Mr. Stan that it majorly violates the said principles.
 - Considering the previous point, the description of Service Inc. in the initial stages of the case study that Service Inc. had a culture of maintaining hierarchy between employees, under their roof was not rectified after all(at least not completely) to meet the agile manifesto.
 - Service Inc. had dedicated testers, developers etc. But it could have been lacking cross-functional teams. These teams deliver products iteratively and incrementally, maximizing opportunities for feedback and ensuring a potentially useful version of making product is always available.
 - It is mentioned that after the sprint planning meeting, the task list which was only a draft was again separately discussed with the center manager and

changes were made based on his feedback in the absence of the team. But the agile manifesto clearly suggests that all drafts and backlogs be made and finalized in the presence of all the team members because eventually they will be the ones working on it.

- The agenda of the sprint meetings as mentioned did not include discussion of possible ways of being more productive in the future, keeping in mind how things had been working out in the past on this particular project. This has to be done on a regular basis, but the given description suggests that the meeting concluded after discussing the past i.e. the recently concluded sprint and collecting feedback about it.
- There is a mention that Service Inc. tried its best to coach its employees beforehand. Adding to the previous point, regular and frequent feedback from the team would have supported the agile manifesto more instead of just pre-training/coaching of its employees.

1) b) *The areas where Service Inc. did not meet the intent of SCRUM Manifesto are:*

- Scrum Master and Product owners were rotated across sprints which are not ideal according to scrum methodology.
- The scrum master assigned tasks and made decisions on behalf of the team and made commitment on behalf of the team which also violates scrum methodology. Every decision made has to be made in correspondence to the team requirements and capabilities rather than what the scrum master feels fit for the team. As pointed out before, scrum master only helps everyone to use scrum effectively and increase transparency.
- On an average, stand-up meetings should only take around a quarter of an hour, but Service Inc. had stand-up meetings for more than an hour. The difference in the duration which is more than three quarters of an hour could have led to some actual productive work rather than just discussing the work, which isn't the case in Service Inc.
- The testing team seems to have written the test cases at the end of 3rd week, which means in the initial weeks, the testing team was idle. But scrum methodology says that test-cases have to be written parallelly with the design and development team whenever they complete a new feature or an add-on to the existing feature.
- Teams were encouraged to pursue ambitious targets in the beginning, when compared to average velocities of scrum teams. This might have led to various changes later-on or might have led to some failure due to stress of coping up with the expectations.
- It is mentioned that after a few discussions between team members and scrum master, the task list was finalized. But scrum encourages changes in the deliverables rather than freezing requirements.

- After the discussion in the sprint meeting with the team, center managers were approached for his/her feedback about the discussed matters. But scrum methodology restricts the team to take the feedback only in the scrum review meetings dedicated for this purpose.
- The agenda used for the sprint review meeting included a detailed presentation which is overwhelming to follow for a review meeting which usually lasts for an hour on average. Also in these meetings, feedbacks were collected only within the roof of the organization, but not clients, other stakeholders, end-users etc.
- Team members, along with their specialized jobs were also responsible for emergency products issues. But scrum methodology strictly specifies that the entire focus should be on the current sprint backlog.
- It is mentioned that quality engineers of the company rotated among teams which is not ideal for scrum methodology. Scrum enables incremental and iterative software development life cycles, rather than say, a waterfall model. In case of Service Inc., quality engineers switching projects suggests that they finish their job in a specific part of the lifecycle of a project and switch to others which leans more towards the waterfall model.

1) c) The contribution of each key finding(KF) mentioned by the report of Mr.Stan is discussed below:

- KF#1: NO GO
 - Daily scrum meetings and sprint review meetings happening without fail is a positive.
 - Stand-up meeting lasting for more than an hour is not ideal as these happen on a daily basis and should last for about 15 mins on average.
 - This may lead to productivity decrease in terms of their jobs as some time is wasted, other than what's really required.
 - Rotation of scrum master and product owner is not ideal as well in terms of scrum methodology as it may also lead to ambiguity in the role definitions due to frequent switches.
 - The overall team description is fine. Although a cross-functional team would have added more value to a project, even though not a compulsion.
- KF#2: NO GO
 - Quality engineers in Services Inc. could switch among projects showing a strong violation of agile-scrum methods.
 - Each project has to have dedicated members for specific jobs/tasks, otherwise the various phases of SDLC cannot be done in parallel and hence the project lifecycle leans more towards principles of waterfall model.

- Testing team was idle for the first two weeks which isn't ideal in agile-scrum methodology. The development team also had no progress, which was testable, until that point.
- But the ideal agile-scrum methodology enables incremental and iterative methods where progress has to be made in such a way that teams should be able to work in parallel.
- Keeping these points in mind, the verdict is obviously a strong NO GO decision.
- KF#3: NO GO
 - The person who was previously employed as project manager was then trained to be a scrum master. But some of his methods still highlights the habits of a typical project manager.
 - For instance, in an agile-scrum framework, decision and assignment of tasks happens based on the team that will work on it in that specific domain. But in Service Inc, the scrum master was seen to do it.
 - Also, commitments on behalf were taken by the scrum master which violates the agile-scrum framework.
 - The positives from this key finding were that the scrum master motivates the team members to do their job and also that he/she kept track of the sprint progress, which is well expected from the role of scrum master.
 - But all-in-all, the negatives outshadow the positives and since, it's a NO GO decision.
- KF#4: NO GO
 - The backlog was edited until 3rd week and the length of the sprint is 4 weeks. This violates the scrum principle that the backlog shouldn't be touched for any reason with a sprint in progress.
 - This usually means that the sprint wasn't well planned or the teams are overambitious and are way ahead of the schedule.
 - Either way, this contributes as a negative as the backlog should be edited only before or after a sprint, not in between.
 - Editing in between the sprint will lead the teams working on the current sprint to have ambiguity in deliverables expected at the end of the sprint and could lead to reduction in productivity.
 - The entire focus of the team should be on the current sprint, but in Service Inc, team members were also responsible for emergency product issues and that tends to majorly upset the sprint deliverable.
- KF#5: NO GO
 - There are some flaws in both the agendas of the sprint review meetings.

- The sprint review meetings need not have a detailed presentation about the concluded sprint. Rather it just reviews the work done in short, analyses the work left and discusses how to push towards the goal by not repeating the mistakes made in the past.
- Feedback was collected from all the members, but not from others like clients, end-users, other stakeholders etc. which is valued under the umbrella of agile-scrum framework a lot.
- The positive is that the things that were being done were properly and routinely done except the above mentioned flaws.
- All in all, it can still be counted as a NO GO as the flaws in the process are substantial and hinders the proper working of the agile-scrum framework.
- KF#6: NO GO
 - The point that the task list was at first only a draft is a positive as requirement changes are welcomed as the project progresses.
 - The fact that some of the teams had to be idle at the end of 1st week is a negative. But if the domain that has to be studied to plan the project isn't a cinch, then 1 week could be acceptable.
 - The product manager approached the center manager, took his suggestions and made changes to the draft in the absence of the team. Even Though the scrum master and the team were brought into discussion later, every decision made should be in the presence of the team.
 - The discussions happened online, which isn't really a favourite thing under the agile-scrum methodology. Face-to-face meetings are preferred.
 - Although it was a draft at first, later it was frozen at the end of week 1. But agile-scrum methods welcome changes in between a project.
- KF#7: NO GO
 - The targets set were really ambitious and seem to have not respected the team members' needs.
 - This meant they had to work at a faster rate than normal agile-scrum velocities, which implies reduced productivity due to reasons like high error rate etc.
 - The pressure and stress of not coping with the expectations in the middle of the sprint could also hurt the minimum deliverables expected at the end of the sprint.
 - The fact that they were also encouraged to do so is not at all an agile-scrum principle.
 - Also it suggests that the hierarchy that existed among the employees in the past of Service Inc. may not have vanished completely.

- KF#8: NO GO
 - Agile-scrum framework points out that customers, end-users and other stakeholders have to be frequently involved in the process of project development.
 - In the case of Service Inc. however, has never met its customers.
 - It is also mentioned that the company worked on products from long back when the centers were set up. This implies that clients or customers or stakeholders were never a part of the development roadmap.
 - Specifically, the agile-scrum framework strongly recommends face to face interaction. It is a huge negative that it never met its customers.
 - Hence this key finding undoubtedly contributes as NO GO to Stan's final result.

2) *These are some of the ways by which Service Inc can achieve 40% growth in margin while achieving only a 25% growth in revenue:*

[In general, margin is the percentage of actual profit usable from the revenue as a company fund:

i.e margin = (revenue - expenses)/revenue where expenses may be for maintenance tasks, salary etc. Revenue - Expenses is the actual profitability of the business. It is quite clear that a company has to lower the expenses or increase the revenue should increase the margin. But the target is more on reducing the expenditure in the given scenario.]

- Resources have to be cleverly utilized to reduce the expenses. But Service Inc. took up customer support, sustaining discontinued products, or near end of life or planned to be discontinued EOL products onto which most of the companies weren't eager to utilize and waste their resources on.
- Also customer support, testing and fixing bugs needs tremendous manual labour which increases expenditures of the company. Instead of this clever testing techniques like automated testing etc has to be practised. This can be achieved by modern agile and DevOps as they include such testing methods from inception.
- Hire a fresh set of people who are experts in the domain or a SDLC stage or management or any requirement of the company rather than retaining existing employees and making them work out their comfort zone just because the situation calls for it.
- Service Inc. has to look for new potential partners and clients across the globe and build a healthy relationship with them so that they can know more and more about the competition they are up against in the outside world.

- Product companies should be involved at all phases of the SDLC rather than starting and ending phases. Building a good relationship with product companies is crucial as it is a win-win situation to both the companies. Both companies will now be open to negotiation for either reducing the billing rate or paying premium prices for the services which will increase the revenue.
- Good relationships with product companies indirectly helps in not losing clients as quality of services would have been improved.
- Choose a right SDLC such as agile-scrum methodology, incremental model, iterative model etc, and also consider new-comers such as devOps etc before selection. This is prominent because when a right SDLC is chosen according to the project, it ensures minimal failures, losses and it ensures that the resources are well used hence reducing the expenditure.
- A flat hierarchy has to be maintained in the organization with no hierarchy. A flexible, dynamic and sustainable environment where it is open to changes has to be maintained where the employees feel welcomed. This may in turn increase productivity and hence unwanted expenditures.
- Presence of cross-functional teams also can reduce unwanted expenditures.
- Have frequent meetings(face to face recommended) with the product companies, stakeholders etc and take constant feedback from the clients. Have frequent brainstorming sessions with the members of the company. Having the company and its employees technologically updated never hurts.

3) *The cultural differences between Service Inc and Product Inc that could possibly be a challenge for successful scrum implementation that would satisfy Product Inc are:*

- Service Inc. did not maintain a very healthy relationship with its client or its partners whereas Product Inc. was really open minded in helping Service Inc. when they needed its help.
- Product Inc. follows the agile-scrum framework seriously. Service Inc. relied heavily on documentations which is infeasible to maintain in a large scale project. Although changes were proposed, the company didn't transition completely to agile-scrum principles which could lead to loss of time, resources, finance etc.
- Service Inc. had hierarchy and bureaucracy under their roof which isn't ideal for a scrum implementation. But Product Inc. had a flat hierarchy where all the employees are heard equally.
- Mr. Stan's(representing Product Inc.) methods were not liked by the Service Inc.'s senior general managers for interrogating the engineers

in their absence. He believed that this would lead to honest feedbacks. This is a proof that Service Inc.'s hierarchy was impacting them badly and Product Inc. was aware of it and Service Inc. wasn't.

- Meetings which are held frequently like the stand-up meetings, going on for more than an hour isn't ideal at all most of the times unless it is absolutely necessary like Stan's presentation which lasted for 90 mins as it had to summarize his findings of the 8 weeks he had spent in Service Inc.
 - Service Inc's general managers have 22 years of experience. But Mr. Stan rose through the ranks in just 12 years in Product Inc. This is not possible in a system like in Service Inc.
 - There exists a communication gap between different employees as in Service Inc., the employees have to communicate via the general manager who has hundreds of employees reporting to him directly or indirectly. This may lead the communication to be stuck at the middle-man and not reach the end-person. But in Product Inc., it is said that Mr. Stan can directly communicate with someone who is at the top of the food chain as well, like with SVPs.
 - Agile-scrum methodology is open to changes, even in between the development phase. But Service Inc. seems to be eager to freeze them before development which leans more towards a waterfall model and doesn't resemble the principles of Product Inc. at all.
 - Service Inc. seems to be overambitious and it doesn't always believe in the process, but only on the results. This violates agile-scrum methodology and it was clear that Product Inc. always trusted in the process.
 - Service Inc. were used to plan out for years together in the future. But scrum methodology requires the teams and the company to focus on a specific spent of a project and nothing else.
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