

A Study on Adapting and using Scrum in Financial Sectors

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Abstract— Scrum is a piece of the agile development. Agile programming advancement has picked up significance in light of its methodology and quantifiable profit. Agile is a reaction to the disappointment of the prevailing programming. It is advancement to the traditional software development project management methods (including waterfall) and gets numerous standards from incline fabricating. In 2001, 17 pioneers of comparative techniques met at the Snowbird Ski Resort in Utah and composed the Agile Manifesto, a statement of four qualities and twelve standards. These qualities and standards conspicuous difference a distinct difference to the customary Project Manager's Body of Knowledge (PMBOK). The Agile Manifesto set another accentuation on correspondence and joint effort, working programming group, self-association, and the adaptability to adjust to rising business substances. This paper demonstrates how agile scrum is being adjusted by the money related segments.

Key words— Agile, Scrum, scrum adaption, Scrum Development.

I. INTRODUCTION

Scrum is a standout amongst the most well known systems for implementing agile. So well known, truth be told, that numerous individuals think scrum and agile are the same thing. There are numerous structures that can be utilized to actualize agile, however scrum has an interesting flavor. It's likewise an incredible begin for the groups to work with agile. Scrum is an agile philosophy that can be connected to about any undertaking; notwithstanding, the Scrum strategy is most normally utilized as a part of programming advancement. The Scrum procedure is suited for undertakings with quickly changing or profoundly rising prerequisites. Scrum programming advancement advances by means of a progression of cycles called sprints, which last from one to four weeks. The Scrum model proposes every sprint starts with a brief arranging meeting and finishes up with a survey.

1.1 Overview of Scrum

Scrum is an administration process, first actualized by Ken Schwaber in 1996 that can be consolidated with existing designing procedures, for example, programming building. It is connected with Agile Software Development and has been utilized as a part of conjunction with Extreme Programming. Scrum depends on the reason that intricate exercises, for example, programming advancement, are difficult to

completely foresee. Change, hence, is unavoidable and must be managed. Scrum manages change by building programming in augmentations versus an at the same time approach. Scrum additionally makes persistent evaluation all through the building process. At last, Scrum surveys the finished addition and rolls out the proper improvements for the following augmentation building process. Scrum starts with the Scrum Team, a little, cross useful group comprising of around seven programming engineers. The group is self-ruling and self-sorting out. The administration agent on the group is the Scrum Master. The essential obligations of the Scrum Master are to uproot obstructions to the group and to guarantee that Scrum practices are taken after [17].

Every venture has a Product Backlog, which is an organized rundown of all prerequisites to accomplish. It is a steadily changing archive in light of evolving prerequisites, changing comprehension of the issue, and evolving situations.

Just the Product Owner has the power to organize the Product Backlog [17]. The administration of the Product Backlog can now and then be alluded to as "preparing." Rubin [18] defines prepping as the procedure of creating so as to deal with the Product Backlog and refining Product Backlog Items (PBIs), assessing the measure of work to achieve a PBI, and organizing the PBIs in the Product Backlog. The preparing process keeps the Product Backlog as an important arranging report. Scrum breaks an undertaking into augmentations called Sprints. A Sprint is a solitary, as a rule 30-day, cycle amid which the Scrum Team adds new usefulness to the Product. The process of Sprint starts with a Sprint Planning and Meeting where the Product Owner, Scrum Master, and Scrum group figure out what segment of the Product Backlog ought to be created. This segment of the Product Backlog is deciphered into a goal called the Sprint Goal. At that point, the Scrum Team meets inside and utilizes the Sprint Goal to determine a rundown of prerequisites important to fulfill the target. These prerequisites are put into the Sprint Backlog. Accomplishment of the Sprint is reliant on whether the Sprint Goal has been accomplished [17].

Amid the Sprint, the Scrum Master holds day by day 15minute meeting with the Scrum Team. The Purpose of this

meeting, called the Daily Scrum, is to survey progress. Every individual from the group answers three inquiries:

_ "What has been refined subsequent to the last meeting?"

_ "What will be done before the following meeting?"

_ "What hindrances are standing out?"

1.2 Examination of Scrum

The primary qualities of the Scrum are its iterative procedure and consistent criticism. Li et al. reviewed an organization that transitioned from an arrangement driven programming strategy to Scrum. Their overview found that the constant day by day criticism notwithstanding the input got amid the

sprint review gatherings brought about a more noteworthy spotlight on programming quality. Additionally, the day by day scrum gatherings encouraged designer correspondence and connection bringing about more group collaboration. Sutherland et al. , moreover saw comparative positive parts of Scrum from his involvement with Systematic. Steady correspondence with the customer and iterative programming discharges straightforwardly prompted the early disclosure of deformities and innovative issues bringing about decreased expenses and booking issues. Consumer loyalty additionally expanded due to the straightforward procedure including input and iterative discharges.

A test in Scrum is the introductory arranging and identification of prerequisites. Cao and Ramesh refer to the disregard of nonfunctional prerequisites, for example, adaptability and viability, as a test of the iterative necessities designing procedure found in dexterous programming advancement. They found this test especially valid amid the starting phases of venture improvement as these nonfunctional necessities were not all around defined. Overhage and Schlauderer refer to the absence of starting arranging that makes it more difficult for Scrum groups to start an undertaking. The group must execute a few sprints before the general design and long-extend arranging starts to be set up. Another test in Scrum can be the Product Owner, i.e., programming customer agent. The customer may not commit the most learned individual to the advancement group since that individual's mastery is additionally required by the customer. This outcomes in diminished responsiveness as the Product Owner needs to reach back to find answers to the group's inquiries.

A third test in Scrum, firmly identified with the first, is the absence of spotlight on configuration. Drury et al. report that a significant number of the choices made amid Scrum arranging were more strategic in nature versus key. Almost no examination is on the configuration of the framework as outline seems to be "emanant" in view of the advancement

II. SCRUM ROLES

The Scrum team has three roles: Product Owner, Scrum Master, and Team.

Product Owner: The Product Owner is a person with vision, authority, and availability. The Product Owner is responsible for continuously communicating the objectives and priorities to the development team. It's sometimes hard for Product Owners to strike the right balance of work. Because Scrum values make the team self-organized. A Product Owner must fight the urge to micro-manage. At the same time, Product Owners are responsible to handle the questions from the team.

Scrum Master: The Scrum Master acts as a co-coordinator for the Product Owner and the team. The Scrum Master does not manage the team. The Scrum Master works to remove the stumbling blocks that are obstructing the team from achieving its sprint goals. This helps the team remain ingenious and constructive while making sure its successes are visible to the Product Owner. The Scrum Master also takes care and ensures about how to maximize ROI for the team.

Team: According to Scrum's founder, "the team is utterly self-managing." The development team is responsible for self-administering to complete work. The development team in a scrum contains about seven fully dedicated members (officially 3-9), ideally in one team room protected from outside distractions. For software projects, a typical team has a mix of software engineers, architects, programmers, analysts, QA experts, testers, and UI designers. Each sprint, the team is responsible for determining how it will accomplish the task. The team has autonomy and obligation to meet the goals of the sprint.

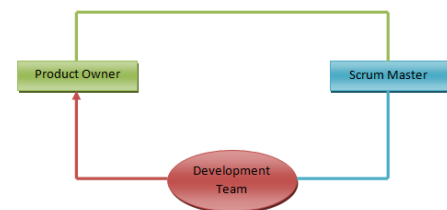


Figure 1: Scrum Team

III. SCRUM PROCESS

3.1 The Scrum process includes the following steps:

- **Backlog refinement**
This process allows all team members to share their views and opinions and properly understand the workflow.
- **Sprint planning**
Every iteration starts with a sprint planning meeting. The product owner holds a meeting with the team and decides which stories are highest in priority, and which are to be taken care of by them first. Stories are

added to the sprint backlog, and the team then breaks down the stories and turn them into tasks.

- **Daily Scrum**

The conduct of daily scrum is also known as the daily stand-up meeting. This serves to narrow communication and ensure that the entire team is on the same page. Each member goes through what they have done since the last stand-up, what they plan to work on before the next one, and outline any obstacles.

- **Sprint review meeting**

During the sprint conclusion, the team presents their work to the product owner. The product owner goes through the sprint backlog and either accepts or rejects the work. All uncompleted stories are rejected by the product owner.

- **Sprint retrospective meeting**

Finally, after a sprint, the scrum master meets with the team for a pensive meeting. They go through what went on well, what did not, and what can be improved in the next sprint. The product owner also attends the meeting and will listen to the team lay out the good and bad aspects of the sprint. This process allows the entire team to focus on its overall achievement and identify strategies for improvement. It is crucial as the Scrum Master can observe common impediments and work to resolve them.

3.2 CHARACTERISTICS OF SCRUM METHODOLOGY

- The starting and ending phases (Planning and Closure) of the scrum consist of defined processes, where all processes, inputs and outputs are well defined. The knowledge of developing these Processes is explicit. The flow is linear, with some iteration in the planning phase.
- The Sprint phase is an experimental process. Many of the processes in the sprint phase are unidentified or uncontrolled. It is treated as a black box technique that requires external Controls. Accordingly, controls, including risk management, are put on each iteration of the sprint phase to avoid chaos while maximizing flexibility.
- Sprints are intermittent and flexible. Where available, explicit process knowledge is used; otherwise tacit knowledge and trial and error is used to build process knowledge. Sprints are used to evolve the final product.
- The project is open to the environment until the Closure phase. The deliverable can be changed at any time during the Planning and Sprint phases of the project. The Project remains open to environmental complexity, including competitive, time, quality, and financial pressures, throughout these phases.

IV. SCRUM ADAPTATION

Scrum is an iterative and incremental system. It might be utilized with various procedures and systems functioning

admirably in a domain of steady change. The undertaking extension is looked into at every sprint arranging so that the group can devote itself to the most elevated need errands. At every audit, the customer is allowed to alter and survey the need of every capacity. Action arranging is done in a gathering room. More often than not, action arranging incorporates all colleagues and slightest near eight hours, being separated in three sections. The principal part is the minute when colleagues choose what will be finished. The second part is to level headed discussion how the exercises will be produced and for the advancement group to List the essential assignments to actualize the arranged exercises. The third part is to gauge every undertaking length, in view of a group accord on qualities somewhere around 1 and 24 hours for every current workload.

Amidst advancement the group meet every day and every designer reports what he did and how he plans to do the following assignment. On the off chance that a designer reports on an obstacle, specialized issues are talked about quickly after the day by day meeting. The thought is to guide the designer with the obstacle towards a conceivable arrangement. The spot of the every day meeting is in the improvement environment itself, where the data on venture advancement is adhered to the dividers, for example, burn to the ground, item overabundance, sprint build-up and blunder report. This plain sight administration means to make accessible all fundamental data in a basic and straightforward way.

Along these lines, work turns out to be less strenuous and the nature of the product made expansions. Day by day gatherings don't happen at a settled time, rotating in the middle of mornings and evenings. The time is an agreement between engineers that have adaptable work hours so as to have all individuals in all gatherings.

Taking everything into account, we can express that the adjustments we performed were adaptable calendar for the day by day meeting and the indispensable vicinity of a colleague (the item proprietor) in the customer, as a result of having an agent of the customer included in the undertaking.

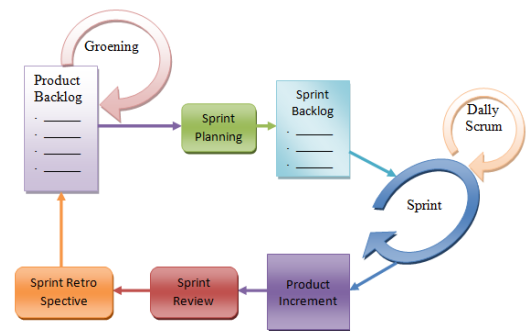


Figure 2: Scrum Adoption Process

V. AGILE SCRUM

Agile Adoption by the Financial Services Industry Seeing a Greater Return on IT Investment. Today's financial institutions are facing huge changes and challenges in technology platforms, payments processing systems, financial systems, asset and risk management systems, while attempting to provide services in the way customers demand.

The trend to agile adoption by other business sectors has been forced by the need to deliver high value, create software that actually meets end user goals, and to reduce risk in developing business applications.

Agile Scrum is a fast moving, management intensive software development methodology. It makes the process of software development more focussed and manageable, while developing a product which is cutting edge and completely bespoke can only be a good thing. On the flip side, inexperienced resources or lack of firm direction can mean that projects which utilise Agile Scrum run a far higher risk of not completing or simply failing.

VI. ADVANTAGES OF AGILE SCRUM

- Adapting and implementing scrum helps the company in saving time and money.
- Scrum methodology facilitates projects where the business requirements documentation is hard to quantify to be successfully developed.
- Accelerated, cutting edge developments can be quickly coded and tested using this method, and errors can be easily rectified.
- It is a controlled method which insists on frequent updating of the progress in work, through regular meetings. Thus there is clear visibility of the project development.
- Agile methodology, this is also repetitious in nature. It requires continuous feedback from the user.
- Due to short sprints and constant feedback, it becomes easier to cope up with the changes.
- Individual productivity can be easily measured with the help of Daily meetings. This leads to the improvement in the productivity of each of the team members.
- Issues are diagnosed well in advance through the daily meetings and hence can be resolved in speedily
- Delivery of a quality product in a scheduled time is possible.
- Agile Scrum can be used with any technology/programming language but is particularly useful for fast moving web 2.0 or new media projects.
- The overhead cost in terms of process and management is minimal thus leading to a quicker, cheaper result.

VII. CHALLENGES OF AGILE SCRUM IN FINANCIAL SECTOR

The challenges faced by adopting Agile methodology by financial institutions is often greatest within the largest firms, which must coordinate development between separated teams that work independently on one component of the software, such as design, analysis, development, or testing. The teams may be scattered across different time zones or even continents. Another reason for the unwillingness to adopt Agile is the fact that in financial services applications, even the smallest error can cause the loss of thousands or millions, especially when account sweeps and trades must be timed with extreme accuracy. The technology cannot fail, or the risk exposure is unacceptable. The requirements for due diligence have caused many financial services firms to stay with waterfall development, where the documentation is extremely extensive, for compliance with auditory and other regulations. Because of this regulation, the financial services industry has traditionally utilized very formal enterprise change control procedures, and created extensive documentation for auditing purposes. In an industry where "risk management" is the order of the day, any development methodology that has a perceived lack of outcome predictability is not quickly embraced. Another challenge is the nature of financial software systems, which may interface with multiple peripheral systems and interfaces, requiring careful definition of these interfaces ahead of time.

VIII. DISADVANTAGES OF AGILE SCRUM

- Agile Scrum is one of the leading causes of scope creep because in not there is a definite target date, the project management stakeholders will be tempted to keep demanding new functionality is delivered.
 - If a task is not well defined, estimating project costs and time will not be accurate. In such a case, the task can be spread over several sprints.
 - If the team members are not committed, the project will either never complete or fail.
 - It is suggested for small, fast moving projects as it works well only with small team.
- Only experienced people can be employed. If the team consists of people who are novices, the project cannot be completed in time.
- Scrum works well, only when the Scrum Master trusts the team they are managing. If they practice too strict control over the team members, it can be extremely depressing for them, leading to demoralisation and the failure of the project.
- If any of the team members leave during a development it can have a huge inverse effect on the project development
- Project quality management is hard to implement and quantify unless the test team are able to conduct regression testing after each sprint.

IX. FINAL THOUGHTS

Software development using agile methodologies is becoming a bigger reality in the daily life of software development companies. Agility brings quality to the software development and management process. In order to add value to the final software, one must have a well structures team that follows the methodology and uses correct strategies. Based on the analysis of the implantation of Scrum for project development, we could see palpable change in software projects management and development, allowing for easier perception of progress. The involvement and commitment of members of the team with the results increased, allow for more collaborative work.

X. FUTURE SCOPE

With this research analysis it is believed Agile Cloud Development is the fate of programming advancement for worldwide associations of all shapes and sizes in all commercial ventures. For those looking for enhanced business spryness, lower expenses and eventually better client encounters – the Agile Cloud Development arrangement is composed. The main test with Scrum is that it is to some degree prohibitive in regards to the sorts of work that is recorded and reported upon. Scrum does not suit dull or calendared exercises. Luckily, Berteig Consulting has created Open Agile as another agile strategy that takes into consideration the following and reporting of all the Scrum work exercises in addition to these new classifications. I discover Open Agile more comprehensive and illustrative of the Financial Services workplace. The open agile spotlights on key and strategic objectives to work systematically.

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