# Limitation Of Agile Methodologies For Large And Complex Projects And Its Remedy


**Thesis Submitted to**

**Superior University Lahore**

In Partial Fulfillment of the

Requirements for the Degree of

**Master of Philosophy in Computer Science**

**by**

**Muhammad Waqas Tahir**

**Roll No. MSCS F15 012**

**Session: 2015 – 2017**

**Faculty of Computer Science & Information Technology**
**The Superior College Lahore**
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# DEDICATION

I would like to dedicate my work to my parents and my brother because without them I am nothing. This work is also dedicated to my great supervisor Ms. Sabah Arif, who not only acted as critical reviewer of my work but also a great motivator for me throughout the process. All those people who wants a critical review on choosing a process model, this work is also dedicated to them.

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I would like to express my gratitude to Allah Almighty Who is most Beneficial and most Merciful. I am blessed to have most wonderful parents who have grown me and nourished me with their best capacity. I can't thank enough to my parents for supporting me throughout my tough times, for sharing my sorrows and accepting my mistakes. My brother has always been a continuous source of support for me. I am extremely thankful to him for always being there for me and for helping me out in this research activity. I have a bucket full of countless thanks and good wishes for my supervisor, Ms. Sabah Arif, without whom it was not possible to achieve this milestone. This dissertation is a result of the collective support and good wishes of my family and my friends.

**Muhammad Waqas Tahir**

## Abstract

In today's competitive era organization wishes to produce products in quick time and wants to maintain quality. Quality aspect in developing software is always a big issue. Everyone wants to produce software that is of better quality. Quality is something that is not measureable. A lot of process models exists that help the organizations to achieve this task. Different companies use different processes to produce quality products. Traditional methods that are used to develop software are not efficient. They are not flexible enough to respond quick changes. Also they require a lot of planning. People are now attracting toward iterative incremental models as they cover the limitations that our traditional model have but these models also have their own limitations and issues. This paper describes the benefits of adopting agile and discusses the importance of scrum. This paper will also discuss the limitations associated with these methods and will also help the readers to overcome these limitations. A new method is also proposed in this paper which will be used to cover the limitation of agile.

**ACRNOYM**

| | |
|---|---|
| XP | Extreme Programing |
| ASD | Adaptive Software Development |
| LS | Lean Scrum |
| SMC | Scrum Master Controller |
| SDLC | Software Development Life Cycle |
| PMI | Progress Measuring Indicator |
| SD | Software Development |

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# INTRODUCTION

## 1.1 Overview:

Choosing a process model for an organization is very important aspect. This is always a challenging task for the organization as well. Companies wish to choose that type of process model that apart from managing things also helps them in producing a quality product. A lot of processes models exist and many are still evolving. With the increase in need of software on daily basis functionalities are getting complex and complex. Companies who are developing software's wishes to produce product with minimum resources and clients expectation towards product quality is also increasing day by day. Different process models exist and they have their own advantages and disadvantages. e.g. Water fall may be oldest SDLC but it has a big disadvantage that in this type of process testing can only be started after the completion of development.[1] Also it is very difficult to measure the performance in waterfall model because there are long cycles and in order to measure the progress you have to wait till end of the cycle. Now day's companies usually prefer to adopt agile model which is quick as compare to old one. It is basically an iterative- incremental technique that works in the form of small sprints helps the organization in producing a quality product with higher productivity.

Agile emphasis on the close coordination and communication among all the stake holders starting from customer till the development team. Agile usually welcome by the organization that works on the projects in which requirement changes quickly or in which companies plan to produce release on daily basis or may be 2 releases per day like Facebook does. Facebook produces 2 releases per day. But the organizations that work on large and complex projects are very shy about choosing agile as their process model. Because there are some limitations that are associated with the Agile. For instance agile is best suited for the projects that welcome change in requirement event at very late of development but consider companies that have complex architecture might not be able to handle that requirement. Another important factor in agile is that it shows the performance of the team but is does not helps in finding the performance of an individual.

Another important issue is that the companies in which people work on developing a product like (Leasing and Financial Product) the scope of that product is very complex also the due to huge number of teams people do not know about others task which creates dependencies because the product chunks are interlinked. Apart from these anomalies or limitation there are many issues

that are associated with the agile. We will try to cover these limitation and anomalies in this paper.

## 1.2 Problem Statement

In today's fast-paced world of software development, the time to deliver is decreasing rapidly. Organizations wants to create a product but with less cost and minimum resources. Client wants a product of high quality. In order to achieve above mentioned things it is very important that you have choose the best process model. Traditional methods are there but somehow they are not effective to meet the market standards. Agile seems to be very attractive and valuable process as compared to traditional ones. But sometimes it does not fit. Especially the companies that are working on large and complex projects they are shy in adopting the agile due to its limitation. So the purpose of this research is to first identify the issues / limitations that are associated with the agile for large and complex projects and try to find the remedy for that problems. At the end we will propose our own process model that will be the hybrid of both traditional and iterative-incremental model. It will satisfy the agile manifesto and will also be capable of working for large and complex projects.

## 1.3 Scope of the study

Research is an ongoing process, things get improvised day by based on the daily based experience and observations. As states above there is adherent need for a process that is suitable for large and complex projects and produces a quality product. There are wide variety of processes exists under the umbrella of agile, like scrum, XP etc.[2] but all have their limitations towards large and complex projects. In this report a new method has been devised which will be able to handle limitations that are associated with the existing agile methodologies, while satisfying the agile manifesto. Variety of roles have been designated in the process e.g. scrum master controller concept has been implemented in order to control the process for large and complex projects. This method will help the organizations to produce quality product with efficiency in less time.

## 1.4 Research Motivation

In past recent years many organization adopted agile but fail to continue with the newly adopted process model. There were various reasons behind that transition. E.g. agile wants change in

mindset. People who were used to with traditional methods were reluctant in choosing the newly process. Another important thing while adopting agile that must keep in mind is that agile required patience and hardworking. There might be a chance that you fail in some early iterations. This is also the common reason why organization fails to continue with agile. The don't want to get fail so fear of failure also change the mindset of the organization. Another possible reason could be teams are not efficient to work independently. So organization faces severe issues when they start working with the new methods due to above discussed reasons. So the main purpose of this research is to identify those issues and try to devise a new method that could help the organization to cater the discussed challenges. Hopefully the end product will be able to cover the limitation discussed above and organization might move towards the iterative-incremental models because they are more efficient and effective.

## 1.5 Significance of the study

Process is very necessary for any organization in order to work efficiently. As people use to say, it is possible to create a good product without a process but it is impossible to create a bad product having good process. Good process will not allow to pass the product to the customer. So the process has its significance. Now which process is to choose and which not that can vary from organization to organization. Now day's companies that are working on large and complex projects are leaving agile due to its limitations. Companies adopt agile (usually scrum) train their resources and when in practical they apply scrum they fails to work with Agile (scrum). This research will help the readers in multiple ways. Firstly it will help the organization to evaluate which process they should choose in order to produce quality product. Secondly it will help the organizations that work on complex projects to choose agile by using our devised method mentioned below. Thirdly it will help the audience to understand the limitation of the iterative-increment model.

## 1.6 Intended Audience

The research will benefits multiple people in multiple ways. It will help the readers in order to understand and learn the limitation of agile for large and complex projects and also its solution. So intended audience could be students who wants to do more work on agile. Also choosing a process model for an organization is very important aspect. This is always a challenging task for the organization as well. Stake holders evaluate several things before taking such decisions. This

report will also help the organization stake holders to choose the process that best suits them by providing analysis on different process also by providing remedies that the existing processes have.

## 1.7 Aims and Objectives of the study

As stated in purpose statement the core objectives of this research are

- Identify the limitation that are associated with agile for large and complex projects
- Try to provide remedy against these anomalies.
- Try to create a new process model that best solves these problems

# CHAPTER 2
# LITERATURE REVIEW

## 2. Overview

This chapter will discuss the various methods and techniques that have been developed to make agile better for large and complex projects. In this chapter we will also discuss various agile methods and also do there comparative studies so that we can understand why these methods are not sufficient for large and complex projects. We will also discuss about the limitations that have been described by various authors.

Let's first get the idea what is agile and what is agile manifesto? Understanding agile manifesto is important because if we wish to create a new method it should satisfy the agile manifesto.

### 2.1.1 What is Agile?

As discussed above companies wish to produce a good quality product with minimum resource utilization so in order to achieve this Agile comes into action. Agile is a light weight and fast software development process. It emphasis on People interaction and communication. Agile increases the efficiency of the resources. It is basically an iterative approach that has small timelines. Instead of giving large time lines in traditional method agile divide the projects into small chunks and it also increases the coordination and collaboration among the teams.

Agile is basically a shift left approach its manifesto is that we are uncovering better ways of developing software by doing it and helping others do it, Through this work we have come to value:

"Individuals and interactions over processes and tools Working software over comprehensive documentation Customer collaboration over contract negotiation Responding to change over following a plan That is, while there is value in the items on the right, we value the items on the left more." [3]

**AGILE PRINCIPLES**

"The Agile Manifesto is based on twelve principles. We will just discuss important one.

- Welcome changing requirements, even in late development
- Working software is delivered frequently (weeks rather than months)
- Close, daily cooperation between business people and developers

- Face-to-face conversation is the best form of communication (co-location)
- Working software is the principal measure of progress
- Best architectures, requirements, and designs emerge from self-organizing teams
- Regularly, the team reflects on how to become more effective, and adjusts accordingly" [4]

### 2.1.2 Agile Methods

There are various agile methods; some of them are listed below

- Lean Software Development
- Extreme Programming
- Dynamic System Development Methods
- Disciplined Agile
- Adaptive Software Development
- Scrum

Each method mentioned above has their own significance and importance. Companies analyze the advantages and disadvantages and see which process best suits to them. As stated above, the purpose of this research is to identify the limitation of Agile methodology and to provide the solution against these limitations. Let's discuss first scrum a little bit.

**Scrum**

Scrum is a process that mainly focuses on management of agile. "It is the famous method of introducing agility because it is flexible and simple" (Tore & Targier 2008) [4]. Scrum is a famous method used in developing software. Scrum starts with a spring meeting in which team itself chooses the task they want to do and decide their timelines. The time lines are not long enough usually they are 2 to 4 weeks long. How to achieve the task and how team meets the deadlines is solely a responsibility of a team. During that phase the scrum master is there to make sure that team focuses on the task. When the sprint ends the work is shippable and if not then spring fails and whole team is responsible for it. Due to short timelines the productivity of the resources increases.

**Scrum of Scrums**

In order to improve the scrum process a new thing "Scrum of Scrum" has been introduced. The purpose of this is to make agile possible for large and complex projects. In this meeting teams discuss their tasks with one another and get the knowledge of what is going on the project because in large projects it is very difficult to get inside knowledge of other team's work.

## 2.2 BACKGROUND STUDY

**Fernando Kamei and Gustavo Pinto2017 [5]** : Agile is helping industries in producing a quality product over the years, but in some cases it has its limitations. In order to get its full benefits for large and complex projects, several things need to be improved e.g. Projects monitoring should be improved, specialization in team should be increased, communication and interaction among teams should be increased.

**Wasim Alsaqaf 2017 [6]:** Todays era organizations are attracting towards agile methodology due to its rapidness however there is a serious concern of quality in the form of rework. This could be dangerous for the companies working on complex projects. Agile also have limitation in Requirement gathering phases. Still companies are attracting towards agile.

**Brian Hobbs, 2017 [7]:** agile software development gain very importance in software industries now a days. Firstly it was quite attractive for the industries working on small projects with small teams. Now it is gaining attraction for the companies working on large and complex projects. There is a lot contradiction regarding agile methods in industries but it an evolutionary process.

**Torgeir Dingsøy 2017 [8]:** emphasis on communication and coordination while working on large and complex projects. When working in large scale projects effective communication between teams is very important because may be 100 of people required to develop a product. Dingsoy also emphasis on Group node approach in order to effective use of Agile methodology.

**Changeable, 2016 [9]**: changeable in his research paper also tries to cover the limitations that are associated with the agile. Changeable also suggest introduction of automation testing system

in order to achieve results using agile methodologies. He also suggests hyper connectivity as in agile we tend to connect with each other so effective coordination will to get benefits from agile.

**L.S.Maurya 2015 [10]:** Maurya suggest that making development more convenient and efficient for large and complex project organizations are moving towards agile but somehow they hesitate it. While discussing the limitation of agile for large and complex projects Maurya says that there are a lot of roadblocks in adopting agile. That might be lack of budget, lack of planning or lack of documentation. Apart from above reasons Muarya suggests that possible reasons of people having fear in adopting agile could be its unpredictability or due to access of meetings.

**Fahad Almudarra, 2015 [11] :** Fahad try to cover the issues while adopting agile in Mobile cloud computing applications. Many networking applications like twitter, FB etc they are migrating to cloud based approach.

**Mc Hugh, Martin 2012 [12] :** suggest that people are attracting and adopting agile for the projects that are related to medical as well. Because they think agile is the one who solve these problems in low cost and will also help them in developing the product with quality and efficient but there are some limitations that are associated with the agile.

## 2.3 Research Questions

Process model provides easiness to the organizations to produce quality product in time. In this research work we will try to address below mentioned things through our proposed methodology.

1) How to choose process model that suits your organization
2) Comparative analysis of different Process Model
3) What are the limitation of Agile
4) How to make agile possible for large and complex projects.

Hopefully at the end of research we will be able to answer the said questions.

## 2.4 Research Gaps

As discussed above people wants to use iterative-incremental model but there are some limitations that are associated with the agile. Some of the limitations are discussed below.

### Limitation associated with Agile

- Fails for large projects, scrum assumes to work in a small team.

- Large enterprises have complex architecture and might not able to add requirements during development
- Individual performance cannot be extracted
- In Adequate experience with Agile
- Team does not able to collaborate
- Demands variable scope
- When shift to agile it demands significant shift in culture
- Lack of testing Strategy [13]

# CHAPTER 3 RESEARCH METHODOLOGY

# 3. Research Methodologies

This chapter shall discuss the way in which research was conducted. A research methodology leads the activity of research and directs the way through which data should be collected to produce or propose a solution for the problem under consideration.

## 3.1 Research Paradigm

I believe that my research type is “Pragmatist”, because choosing a process is always a debatable process. We should not restrict to one rule. Things happen and we should evaluate and see which methods suits to the condition.

## 3.2 Problem Investigation

As discussed above there are some limitations that are associated with agile which make him less attractive for the companies working on large and complex projects e.g. companies see there are some unnecessary meetings and documentations in the agile, so consider that it is impossible to judge the performance of an individual in agile as in agile team fails rather than individual. So a need is there that there should be a process that should facilitate for that kind of projects. In order to investigate our problem we will do literature review, surveys and we will evaluate our model on the basis of our results.

## 3.3 Data Collection

Software industries are using various process models in order to produce quality product. Some industries are moving towards the latest iterative-incremental model instead of Traditional development modes. Various methods were adopted in order to facilitate the research work. The first one was literature review in which several research papers were studied and tried to identify the pros and cons of various process models. the other thing that was done was a case study. In which we tries to learn the reasons why companies were shy while choosing iterative – incremental models like agile.

In order to get insight , which model companies prefer and what are the parameters to choose a process model several interviews have been conducted. The questions that were asked during the interview are stated below.

1) Is process model is necessary for producing quality product.
2) Do you have Insight of Agility
3) Do you think iterative-incremental is best for producing quality product?
4) Are you satisfied with the traditional method adopted in your organization?

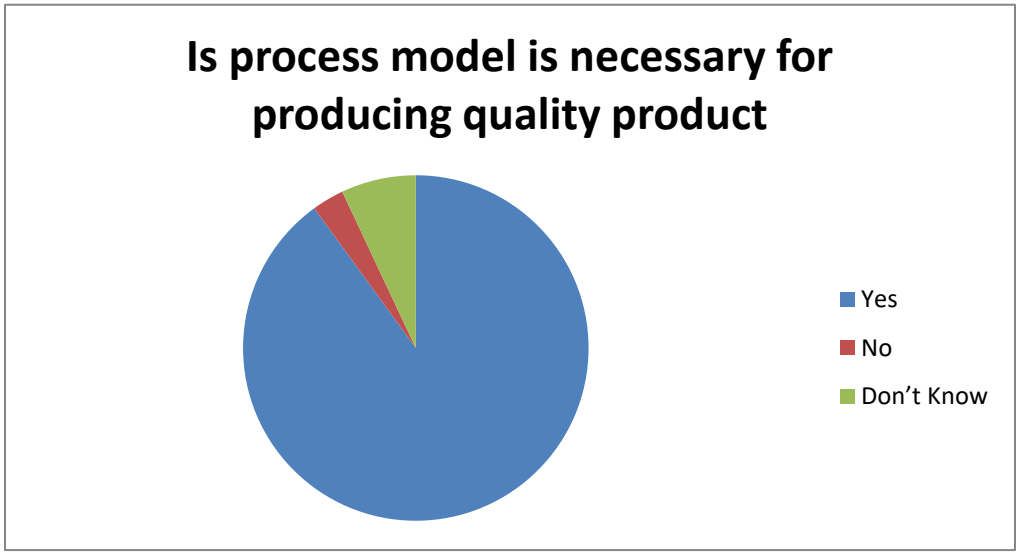



Figure 1: Question # 1

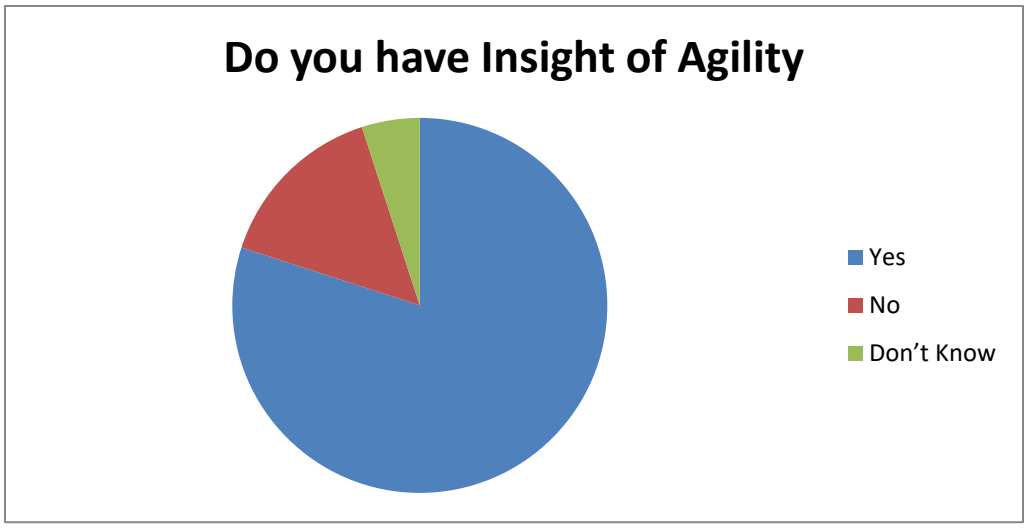



Figure 2: Question # 2

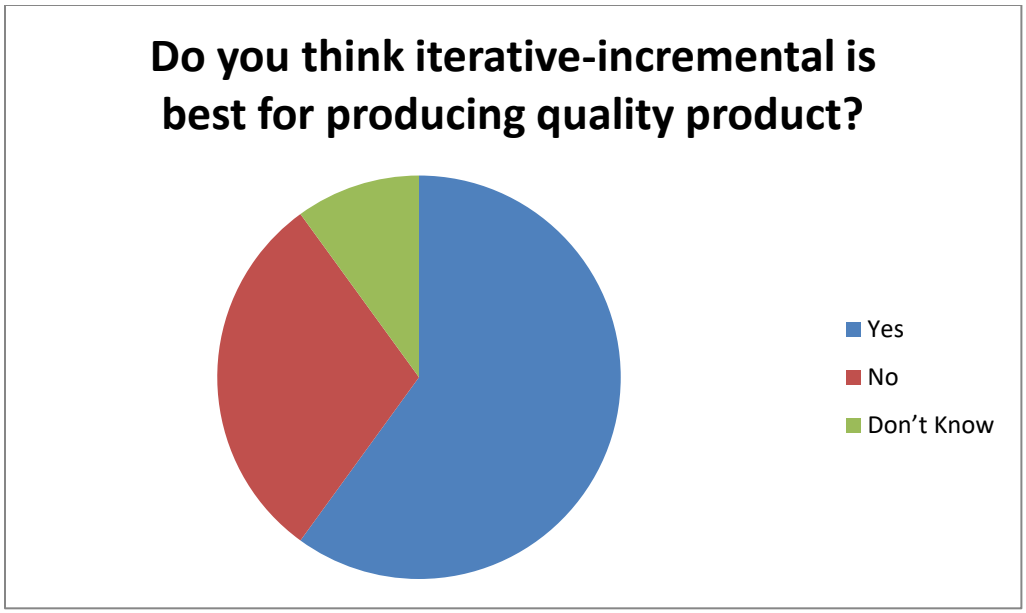



Figure 3: Question # 3

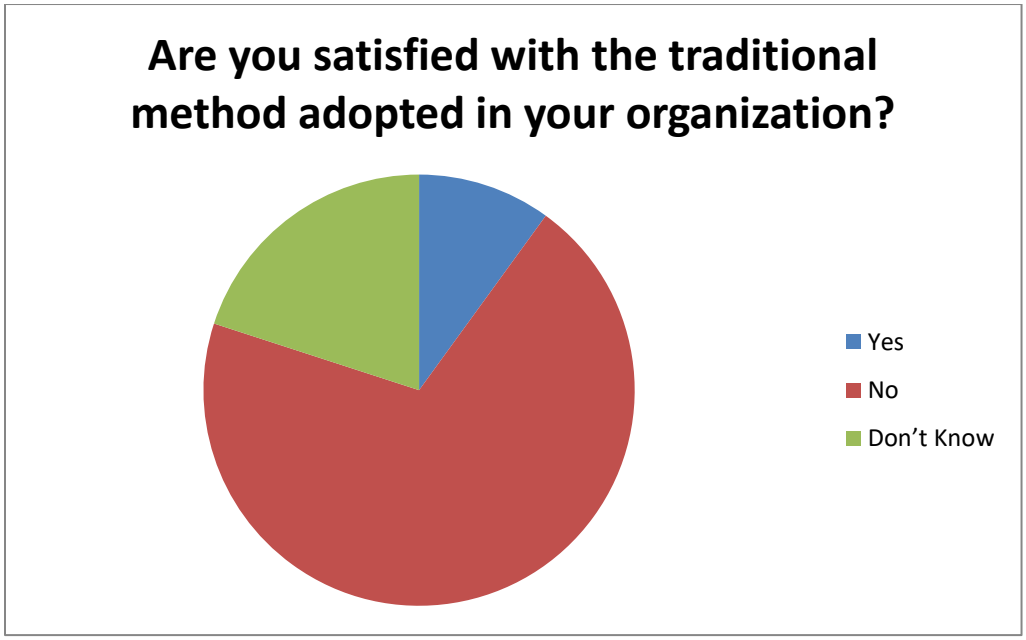



Figure 4: Question # 4

The results of the above mentioned questions are summarized in below table

| Questions | Yes | No | Don't Know |
|---|---|---|---|
| Question # 1 | 90% | 3% | 7% |
| Question # 2 | 80% | 15% | 5% |
| Question # 3 | 60% | 30% | 10% |
| Question # 4 | 10% | 70% | 20% |

Table 1: Consolidated Results

We can drive several results from the above mentioned stats. The first one is that everyone considers the importance of process model. People are no longer wants to work on the traditional method as it does not fulfills the market standards. People wants to adopt the iterative-incremental model but due to its limitation people are shy in choosing the process model so they want an enchantment that covers the gap in the incremental model.

## 3.4 Product quality and Agile Methods

The question that comes to in our mind is that why we need a process. Every one wishes to create a quality product. Organization who are developing the product wished that there product quality should be high. The client who is demanding the product will be attracted towards the product that is of high quality. So a narrative is there that in order to create a good quality product you should have a good process. As states above " it is possible to create a bad product without using a process, but it is impossible to create a bad product using a good process". A good process will not pass that product. Whenever a product is produced by an organization they evaluate the product quality using three paradigms. They are listed below.

- Structural Quality
- Functional Quality
- Process Quality

**Structural Quality**

Several things that must cater in this aspect of quality are "Code Maintainability", "Code Efficiency", "Code testability" etc. In simple words we can say that structural quality deals with that how much code is understandable? Proper architecture has been followed or not? Can anyone easily start working on the code?

**Functional Quality**

Conformance to the requirements specified in RS is mainly considered in Functional quality. Software must be developed with low defects. It must be easy for use i.e. it must be user friendly and its performance must be good.

**Process Quality**

Although Structural and functional quality are important but the most important aspect is of Process quality. Everyone wants to deliver project on time within the budget. If a company have a good process they will surely deliver a good product so choosing a process is directly proportional to the quality of the product. So companies try to adopt a process that helps them producing a good quality product on time. Traditional and iterative incremental model exists that helps the organizations in producing the quality product. Traditionally methods have its own limitation as they are slow and progress can be measured at the end of cycle. so Our emphasis is on agile methodologies.

Agile method life cycle is created below. This diagram tells the basic flow of agile methods.

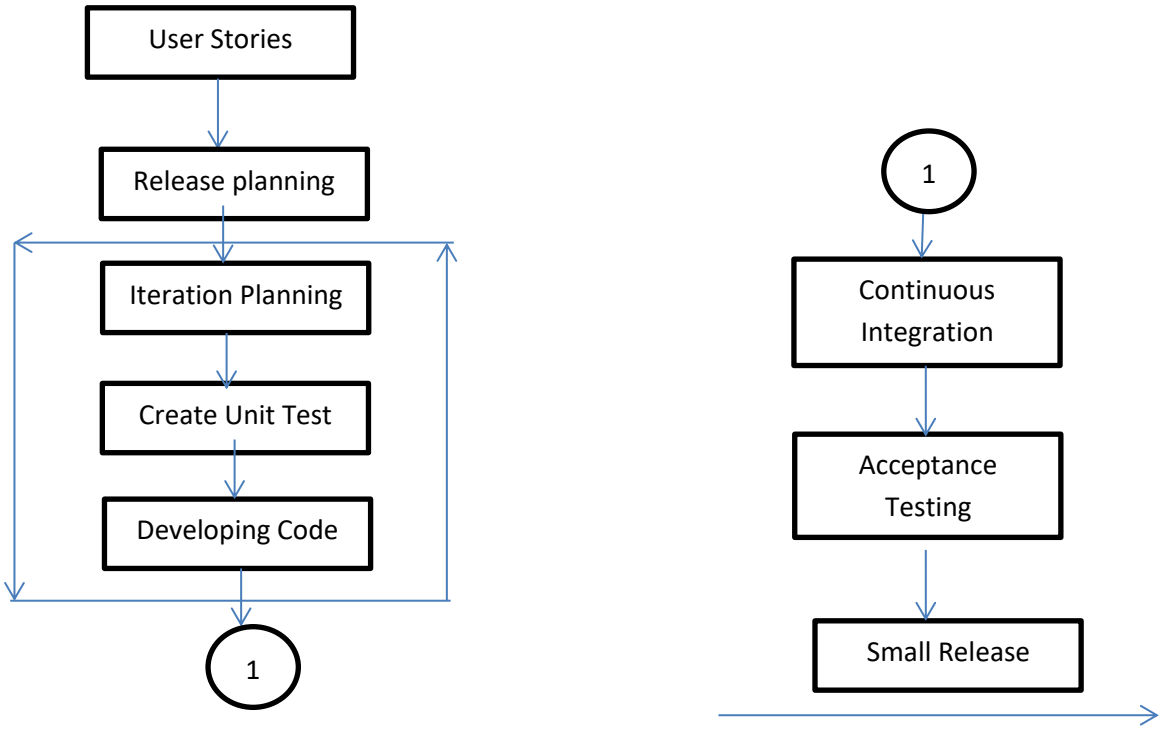



Figure 5: Simple agile methods life cycle

**Key Point: Iterative – incremental**

Whenever agile is discussed two things that came into mind are "Iterative" and "Incremental". Agile is basically iterative-incremental approach method. The iterative- incremental means a system that is developed through rapid iterative cycles (repeated cycles) and in small chunks (incremental). In each increment everything coded and tested completely. It is make sure that there must be minimum chance of revisiting once the iteration is completed.

**Scrum**

Scrum is also an Agile method that helps in producing quality product. Scrum team consists of 3 things. "The Scrum Master", "The Product owner", "The Development Team".

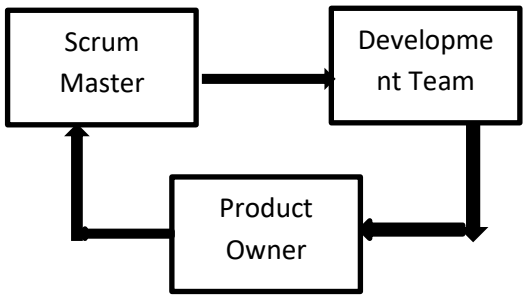



Figure 6: Scrum Process

The main responsibilities of scrum master are

- He makes sure that scrum rules are clear and understood
- If any issue occurs between product owner and the development team, it is the responsibility of scrum master to resolve it.
- He empowers the team
- He keeps himself up-to-date about the progress of the team.

The main responsibilities of Product owner are

- He is the "voice of customer"
- It is the responsibility of product owner to write down user stories
- Product owner writes the acceptance criteria
- Increasing the value of product is the responsibility of Product owner.

The responsibilities of development team are

- The team is responsible for creating the solution by developing
- The team is self-organizing

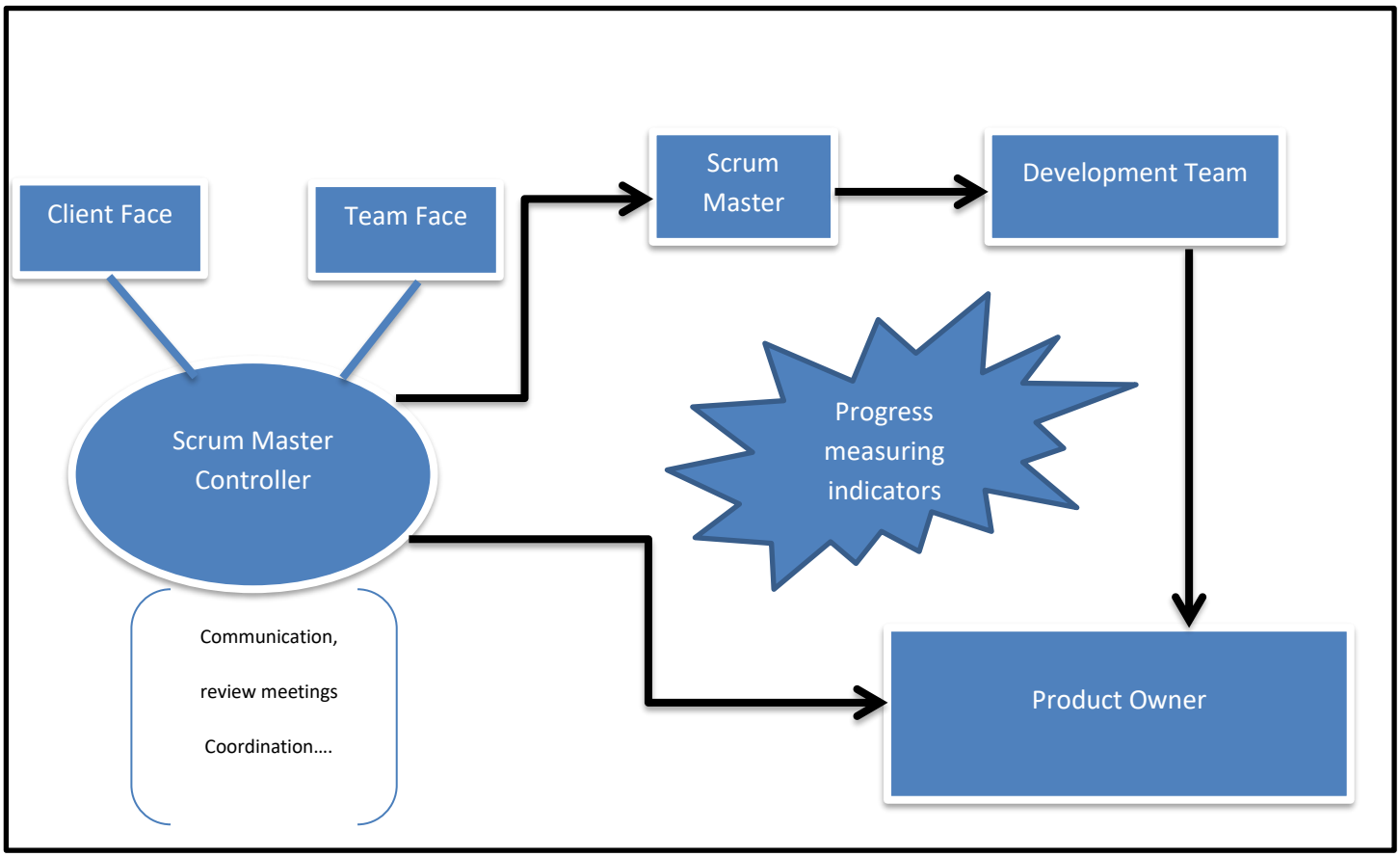
- At the end of every sprint team developed something that is shippable

## 3.5 Proposed Methodology

### 3.5.1 Lean Scrum

In order to cover the limitation discussed above, here presenting a new method which is the combination of both traditional and iterative method. This method will somehow cover the major limitations that are associated with the large and complex projects also help in improving the productivity and the quality of the product. This method has two words, Lean and Scrum.

As lean suggests that we should remove extra things i.e. “Eliminate waste”. So our newly created method uses lean principles and apply it on scrum, so that scrum could be made better for large projects as well. As discussed above in the limitation associated with agile, that agile is not suitable sometimes for larger or complex projects due to too many iterations or others thing, so our newly created process helps in this regard.



## Lean Scrum Components

Lean scrum consists of following components

1) Scrum Master
2) Product Owner
3) Development Team
4) Scrum Master Controller
    a. Team Face
    b. Client Face
5) Progress Measuring Indicators

**Scrum Master**

Scrum master plays vital role throughout the life cycle of the project.

- He is responsible to serve product owner and development team simultaneously.
- He facilitates the team if they are facing any issue or hurdle
- He facilitates the team if they have any understanding issue regarding backlog or other things
- He facilitates if there is any ambiguity regarding scope or product domain etc
- All type of requests and needs can be fulfilled by scrum master.

**Product Owner**

A product owner is basically the one who guides the team what to do or what not to do.

- He basically drives the product.
- He has the vison of the product
- He can consider a leader in scrum team.
- He manages the backlog
- He dictates the development team regarding their tasks
- The value of the product is increased by product owner

**Development Team**

The development team is basically the responsible for creating and developing the software. It may include architects, the developers, quality assurance, quality engineering team etc.

**Scrum Master Controller**

As discussed above in large and complex projects it is impossible that the single person have insight of all products. So a new role scrum master controller is introduced in our newly proposed methodology. It is basically a pool that consists of multiple scrum masters who are leading their own teams. The basic purpose of this scrum master controller is to facilitate the development team and client. Also they will help in creating good communication and

coordination between client and the development team. There are two main entities of scrum master controller.

- Team Face
- Client Face

**Team Face**

The people with the role of team face are responsible for any kind of queries from the development team. Either it is related to business or some strategic kind of query. They will facilitate the team.

**Client face**

The people with the role of client face are responsible for the interaction with client they are responsible for answering any kind of queries put by client.

**Progress measuring indicator (PMI)**

Mostly people criticize on agile because they think there is no mechanism available to measure progress in agile. That is why a progress measuring indicator mechanism is introduced in newly proposed methods. This could be a person who is acting as an evaluator or there could be set of defined rules on which progress and performance is measured.

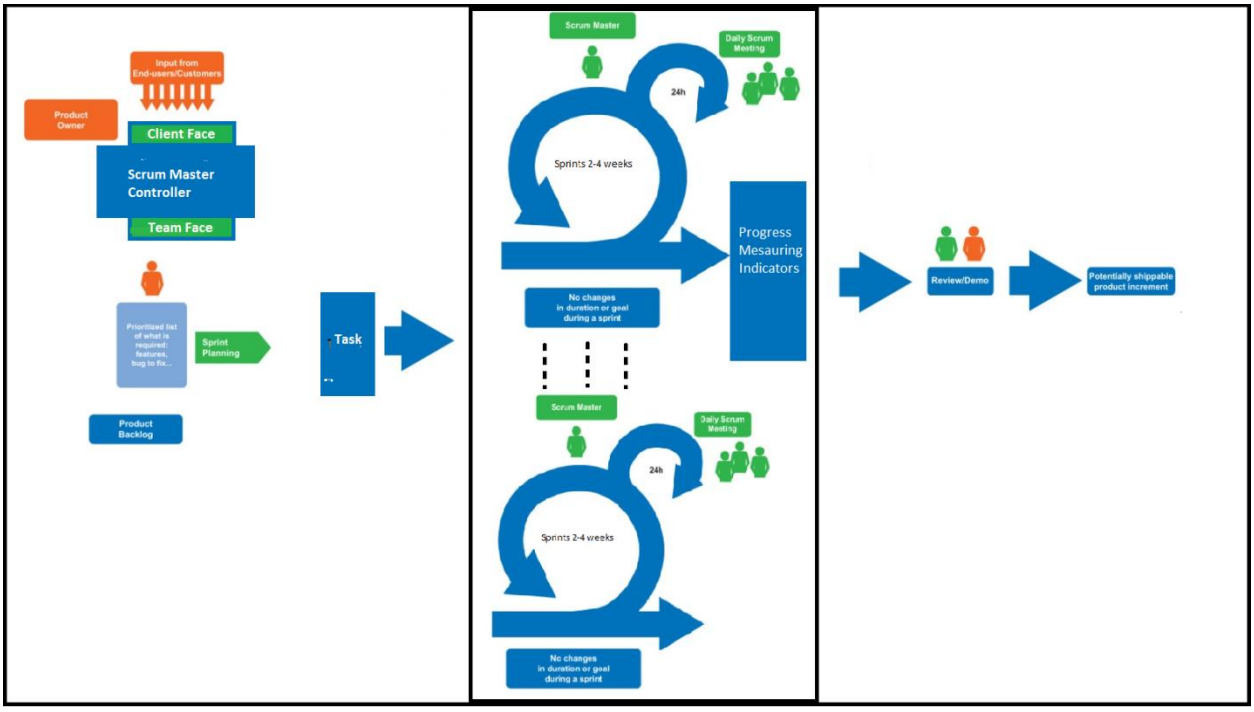



Figure 8: Lean Scrum Cycle

The above mentioned pictures describe the flow of the newly created scrum method.

- The client face team from the "Scrum master Controller" takes dictation from the client or any external stake holders.
- Then they sit together along with Team face team and create product backlog and tasks
- These tasks then given to Scrum master who is responsible for performing tasks from its team.
    - The scrum master discussed the tasks with his development team in scrum meeting and team start working
    - Usually 2 to 4 weeks iterations are there
    - For large and complex projects there could be "n" teams having scrum master with each team
    - Performance measuring indicator is there that could be set of rules or anybody who is evaluating the product on daily or weekly basis.
- At very end there is some shippable product is ready.

Key factor is that scrum master is responsible for performing coordination and communication among teams. They discuss these things in scrum master controller meeting.

## Lean Scrum Principles

- Eliminate Waste i.e. (Eliminate extra meetings, extra documentation)
- Increase the duration of sprint a little bit (from 3 week to 5)
- Instead of daily standup make it twice in a week
- A new role "Scrum Master Controller" must introduce. The purpose of this role is to increase collaboration within the scrum teams because usually the scrum teams have no idea what others are doing and what is happening on project.
- A "Progress measuring indicator" is there that could be a person who is acting as an evaluator or could be set of defined rules on which progress and performance is measured.

## Satisfying agile manifesto

The newly proposed method is not deviating from the basis of agile. It is satisfying the agile manifesto

The crux of this method is iterative-incremental model. As you can see in the above figure after getting input from the client (external stakeholders) by the Client face team, it will divide the tasks into sub tasks with the aid of Team Face team and the iterations starts. So it is satisfying the iterative-incremental basis.

The agile method does not welcome the extensive documentation; hence this method as name suggested stops with extra documentation. Only necessary documentation should be done.

This method not only covers the basis of agile but also covers the limitations that are associated with agile e.g. scrum master controller is there to improve coordination and communication within the team and with the client. Performance measuring indicators are there to check the progress throughout the iterations.

# CHAPTER 4 DATA ANALYSIS AND DISCUSSION

## 4. Online Survey

In order to get insight about how people think of agile, an online survey has been performed on which simple questions were asked from the audience. The audience was limited and only belongs to that industry which are using process model to deliver their products. The survey was done using google docs and results were auto generated so there is no chance of tempering the results. The screen shot of the survey is provided below

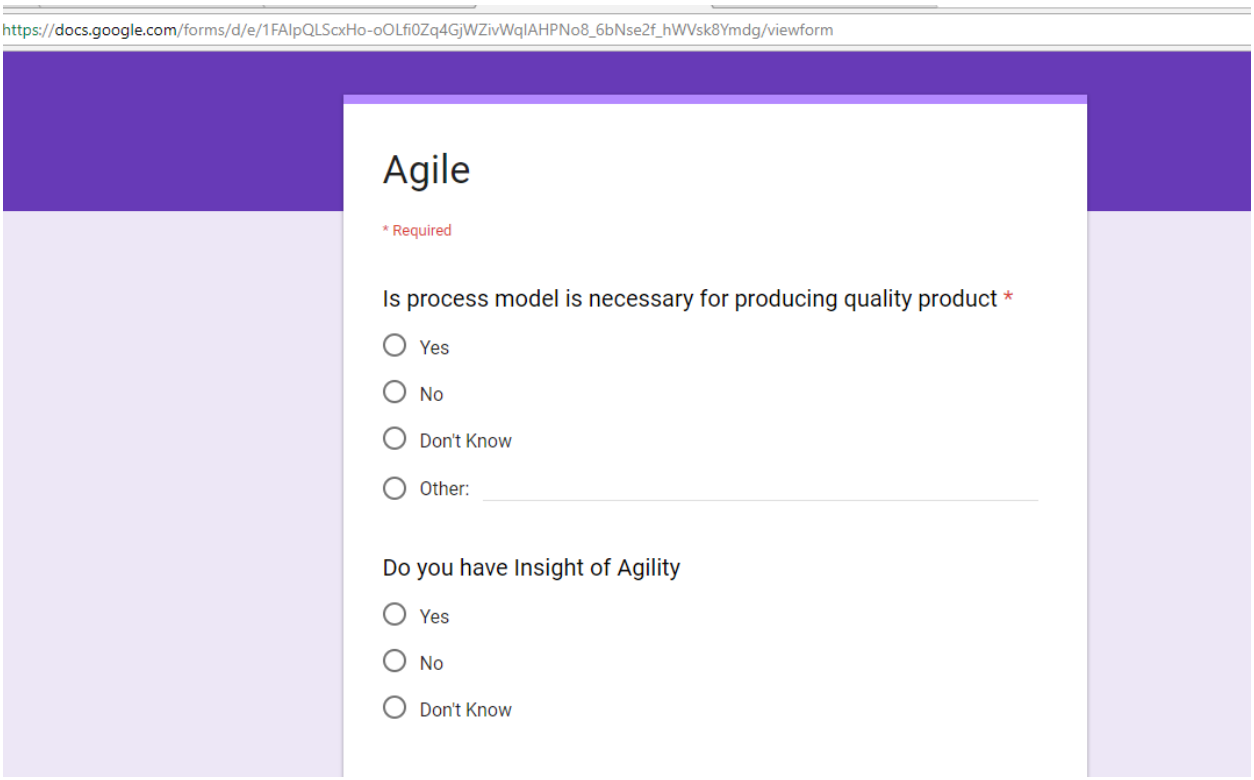



Figure 9: Online Survey

The results were auto generated through google. The result is available below

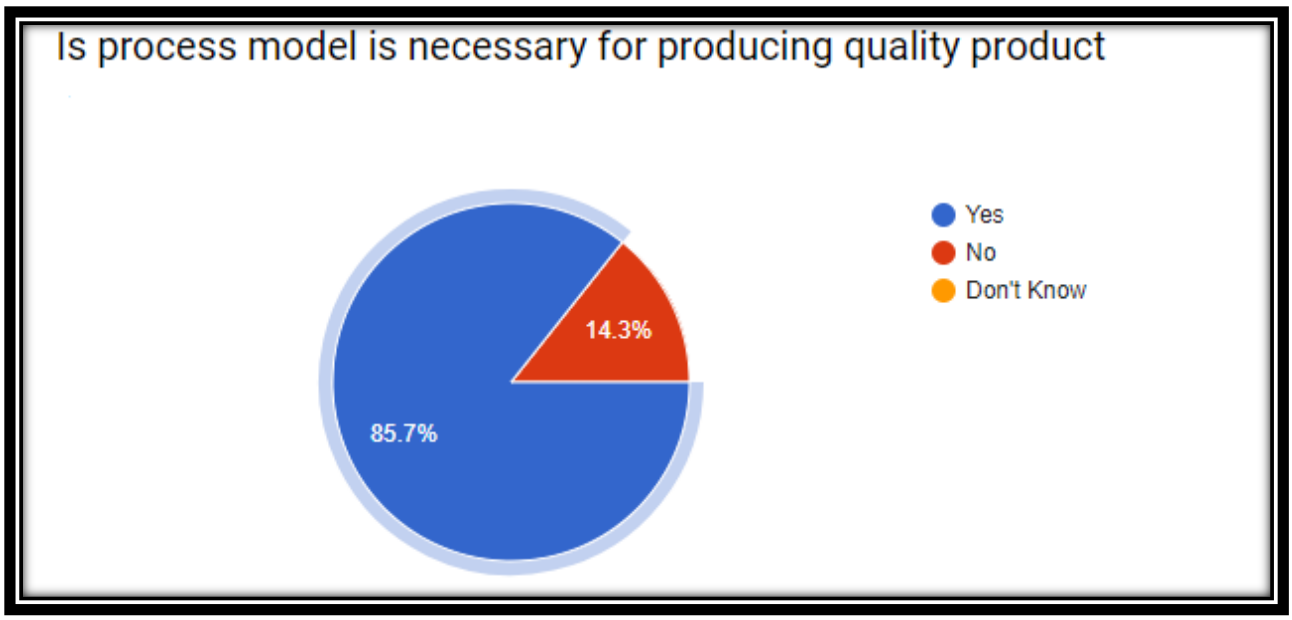



Figure 10: Survey Result 1

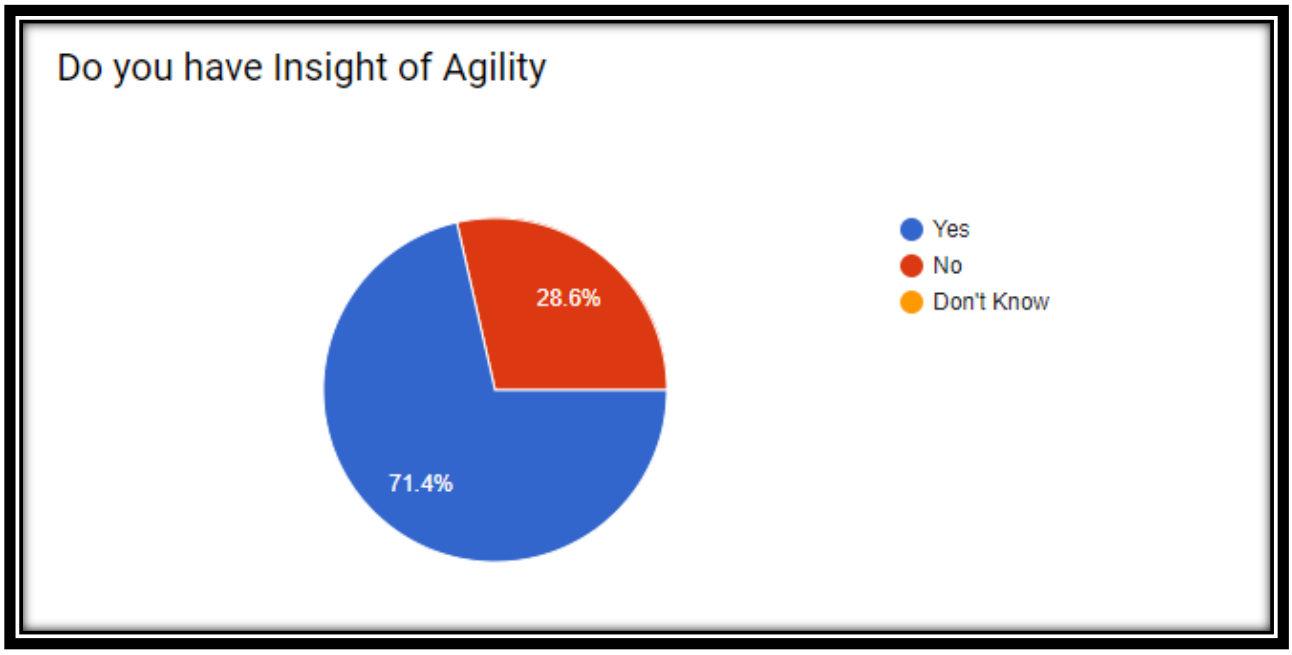



Figure 11: Survey Result 2

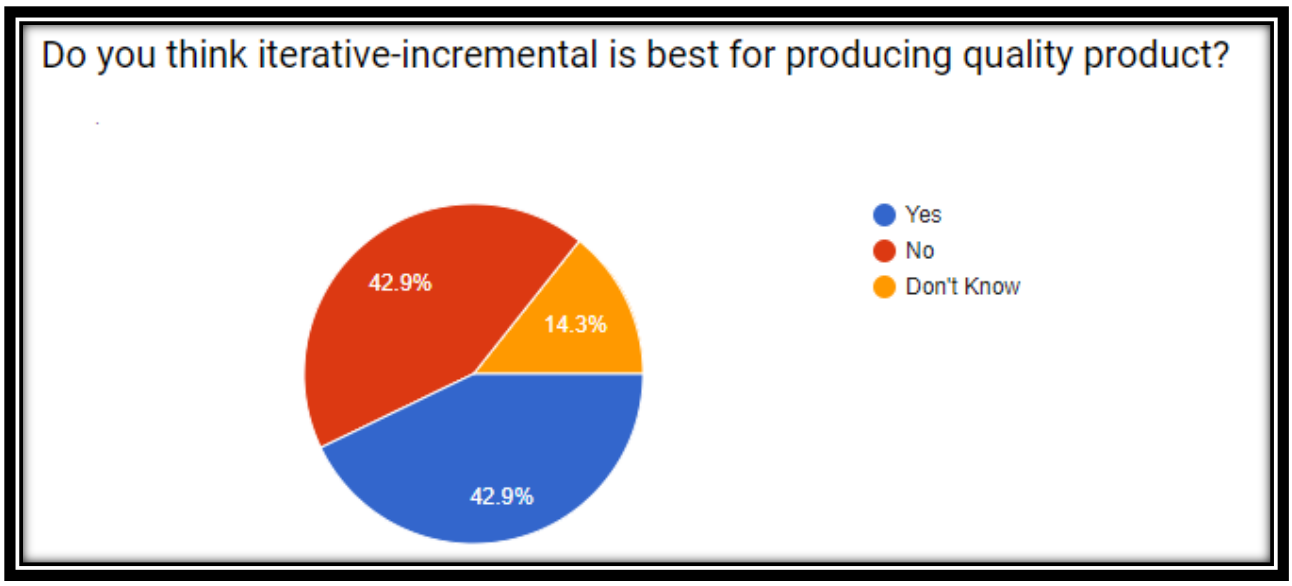



Figure 12: Survey Result 3

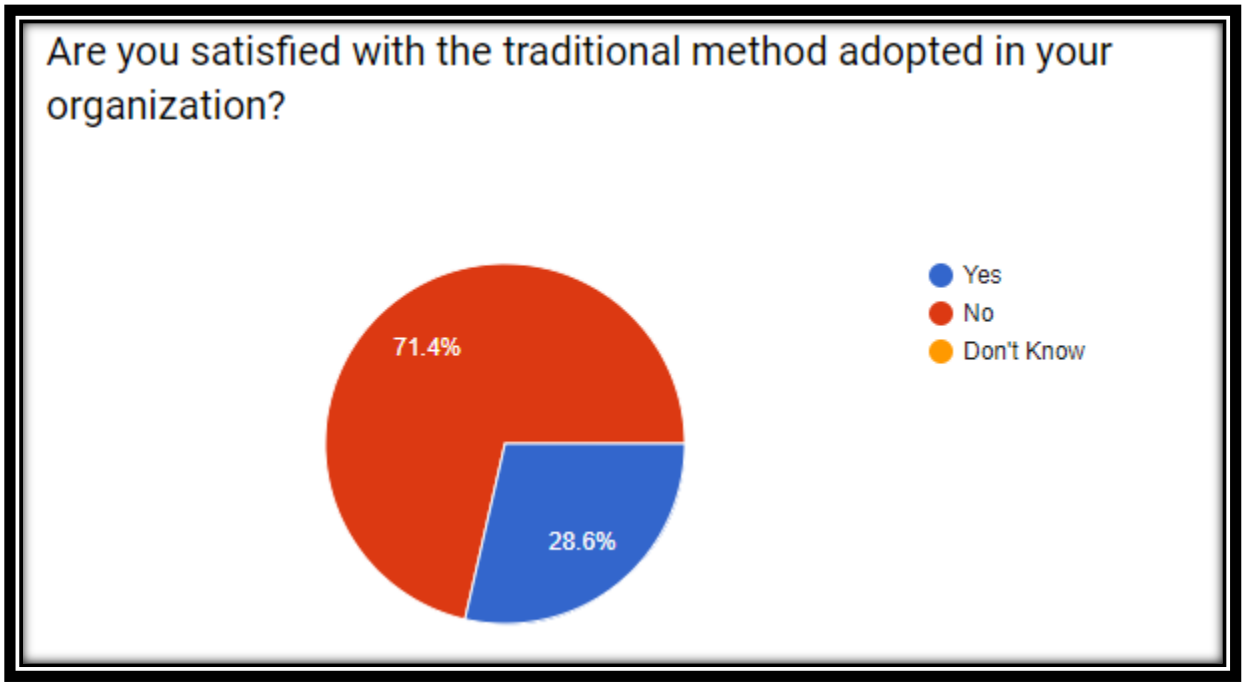



Figure 13: Survey Result 4

the results are genuine and not editable.

These results clearly indicate that people are not satisfied with their traditional methods. People wants to adopt agile methods.

## 4.1 Implementation of Newly Proposed Method

Although not an organization level yet on some small level the newly proposed method was experimented. The project was in bad situation before we applied this method. After the implementation of newly proposed method, the results were extra ordinary. The project was successfully “go live”. The list of the contribution of this method listed below.

- Team work in more coordinated fashion
- Extra documentations were avoided, so people not get over burdened
- The teams were divided in two categories
    - Client Face (Service Operations)
    - Team Face (Service Delivery)
- The service operation team was responsible for any type of communication and coordination with the client whereas service delivery team was responsible for performing the tasks.
- In the end the project was successfully “Go live”.

# CHAPTER 5
# CONCLUSIONS

## 5. Conclusion

Choosing a process model for an organization is very important aspect. This is always a challenging task for the organization as well. Every method has its own significance and can be opted depending upon the condition, situation , demand and need of the time. This research shows that people are now getting bored of traditional methods and they want new methods that help them in developing less cost quality product. Among all methods agile is considered as one of the best process but it has some limitation e.g. it does not suits for large and complex projects or large enterprises have complex architecture and might not be able to add requirements during development, or individual performance cannot be extracted etc. The new method that is described in this research paper will help to cover all these limitations and will be good to produce a less cost quality product. So if we overcome this limitation agile can become ideal for the organization that is working on a project with complex architectural and larger projects. As suggested earlier that is research type is pragmatics so we can tweak the defined method according to the situation.

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