

Risk Estimation and Improvement Strategies In Agile For Traditional Development

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ABSTRACT: Agile development method which is gradually more adopted by internationally and also many more software houses because of its flexibility in changes during the process of development. Due to its flexibility in the process of development causes the increasing number of risks in agile methodology. The vital objective of this research to inspect or to be examined the risk for developers or traditional developers during the transition in agile practice. The research project, which is to be considers the comprehensive review of literature to identify the problems in agile methodology. This project conducts the mixed approach for traditional developers to identify the risk in agile. The fundamental data for this type of research to collect data from the online questionnaire and also conduct interviews for both stakeholders e.g. project managers and project team members. The finding, which are obtained from investigation and analysis from both type research primary and also secondary which one help to adopt agile methodologies for traditional developers. In the last, it will help the software industry and project managers to implement the agile methodology successfully and also help to minimize risk.

Keywords: Agile Methodology, Traditional Development, Risk Estimation, Quality Improvement, Lightweight Procedure, Minimize Risk, Improvement Strategies

1. INTRODUCTION

THIS new research in programming, designing it assessed what work or project gives many new results as access the by and the work which perform in the congregation. In Coordinated programming advancement group is likewise performed superior to the customary technique, despite the fact that the ASD group additionally has a few issues while deciding. Software improvement is loaded with chancy, expensive pre-arranged strategy. There is more probability of a programming crash so utilizes new system which has less risk of dissatisfaction in traditional programming advancement strategy. There are a number of the possibilities of failures in traditional procedures, for example, in the rear timetable item release, defective items, cost and so forth [1].

An Agile method of software development is useful while emergent an intricate task of multi-participant software. When a group usable agile approach it affects the organization's makeup, civilization, human resources, improves the method through communicates the project, customer, enhance the way through discuss the system quality, it also recovers the software deliver method. Agile approach is also augmenting both technical and social practices [2].

Agile Software projects are disgraceful and always controversial for choosing the right methodology because of changing in initial planning and specifications. The possibility of this anticipate was at first created subsequent to working in both traditional and agile programming advancement strategies. Software advancement organizations and groups

basically work in the middle of these two methods of insight of improvements. The point behind this research is to explore the risk for traditional software designers who likewise need to work in an Agile (rapid advancement). Agile model is more lightweight and adaptable, entrepreneurs can incorporate new organizations with existing business. Because of element business and successive changes in business, software advancement groups are currently transitioning from traditional strategies to Agile (rapid improvement). In coordinated it is less demanding to connect with advancement group and project manager and roll out improvements during the improvement procedure.

The criticism circles inside the item development turned out to be longer and more. This increasingly prompted having fewer and fewer individuals with an expansive framework, understanding which thusly backed off both the hierarchical capacity to handle wide specialized difficulties and the individual chances to learn and expand the contribution [3].

There are two sides of the coin one is traditional and the other is agile approach. Now-a day's software is complex, so the probability of software failure is increasing as well as chance of risk in operational software going to be well. For the assessment of risk in complex systems, it's important to combine both traditional and agile approaches, by the combination of these methods try to apply traditional model or techniques of risk measurement into agile method [4]

2 RELATED WORK

2.1 Small Comparison Of Agiel With Other Models

1. Waterfall v's agile
2. Incremental v's agile
3. V model v's agile

2.1.1 Waterfall Model

The traditional programming advancement model take behind the upgraded rendition of the waterfall change representation. The considerable waterfall show, each methodology model (prerequisite, outline, accomplishment, maintained and confirmation) streams exceptionally tumble down the following period Not at all like to assemble projects, the normal traditional programming projects does not reasonable necessity close at an immaculate time in the endeavor to furthest point this model. Which was the advancement and amassing business undertakings which was its roots in the collecting and improvement organizations. With a waterfall technique, the notification was in the game plan the necessities, the dates and the end date. Amazingly, variability was at the heart of for all arrangements and purposes everything, meander. The lithe blunders, confirmation chops down, incredible continues on and the attempt changes into a passing wag. Thusly, issues as frequently as would be prudent create the prerequisite stage, then that causes issues in the structure stage, which then result in clashes and entries in the execution stage. As necessities are, prerequisites stage takes longer than anticipated, and to an early rush, inadequate conclusion, which impacts of the task then oppositely whatever is left. There are obvious surrenders yet, then the practice price the utilizing waterfall course of action for most programming change [5].

V- Model Life Cycle

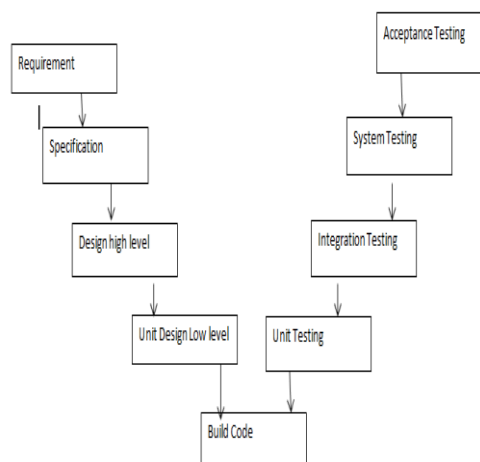


Figure 1 V-Model life cycle

The V model (Verification and Validation) instead of the waterfall methodology is a changed version of the waterfall procedure, this one was not formed in a direct rather the stages backtrack upwards after the coding stage is done, see fig 1.5. At the point when coding is done, unit, coordination and system testing happen in the gathering. In V model, in perspective of the necessity the framework test cases are organized, and considering the HLD (High level document) the Integration test cases are masterminded, and in light of the LLD (Low-level archive) the Integration test cases set. This developed method is balanced and relies on upon the check from the past paces before current forward. The thing from every state ought to be checked and affirmed before solid kick. What's more, next the coding is finished In V model engineer and analyzer works parallel [6].

2.1.2 Incremental Model

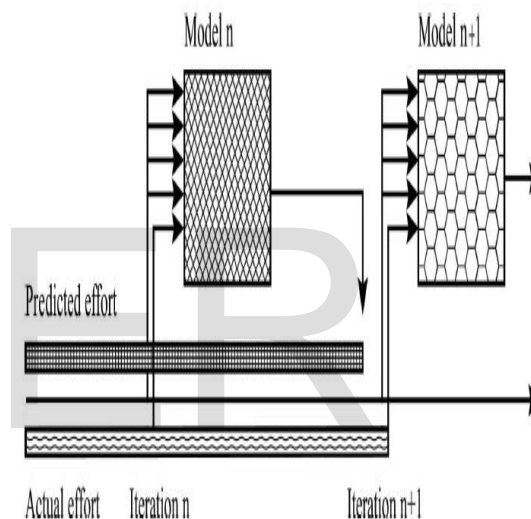


Figure 2 Iterative prediction Incremental model

This model is continually familiar among improvement and also include the obligation; thusly, it can much better suit to any changes in advance, in the midst of assignment advancement prerequisite, work power, or other occurrence. An incremental model could choose the best parts for each emphasis; from this time forward, it must give more correct and tried and true estimations. The relative impact of different marker variations on advancement activity was to change in the midst of endeavor improvement. The incremental model is important and applicable right from second accentuation of change. In particular, this is extremely productive in profoundly irregular territories where it is difficult to find altered and general models. There is no prerequisite for imperative data, moreover, no danger that the model is out of date [7].

Life Cycle of Agile Model

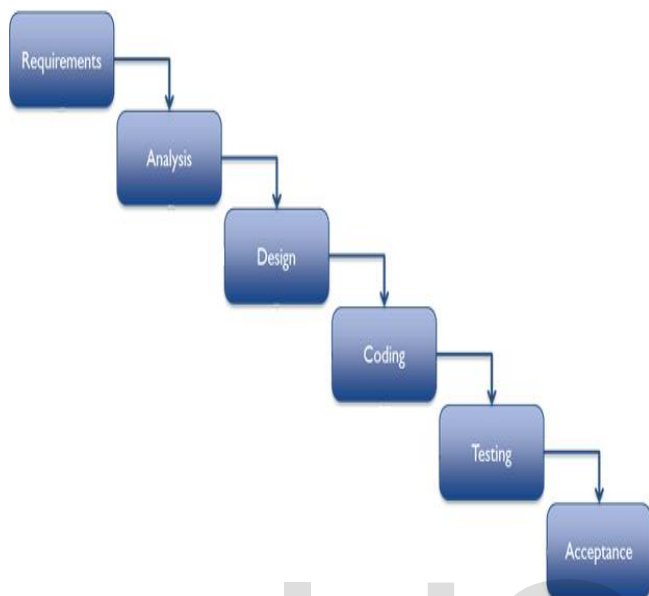


Figure 3 Working Model of Agile Development

2.2.1 Agile model Pros and cons

Pros	Cons
Agile capacity to react to change the prerequisite more vital things.	For Agile advancement and better position to improve the outcome. Simply senior designers are in the best position and take choice.
No ambiguity between advancement group and client and having the yield.	In littler project agile model is gainful yet in vast activities, it is difficult to figure the exertion and time required for programming improvement

2.3 TIME, COST AND QUALITY

An effective task culmination relies on upon three imperative components called Time, Cost, Scope. These three imperatives sway on the finishing and the challenges confronts any I.T project. On the off chance that undertakings come up short or don't reach to its

target any of these elements affect moderately. Time, expense, and degree are the possibilities, variables of any task which empower an undertaking to be seen such as a win. On the off chance that the task is postponed, it impacts the notoriety of the organization furthermore brings about expanding the aggregate expense of the project.



Figure 4 iron triangle

2.4 Research Flow process

Selection of Software Houses

Choose the software houses for accumulation of data concerning agile advancement 50 plus software houses chosen and send the survey via online. The software houses situated in Multan Lahore and Faisalabad in Pakistan.

Collection of Information

Overview reactions are gathered very nearly 40 or more reactions are recorded and uses to conclude the outcome.

Analysis of Data

After collection of responses, analyze that the data according to requirements or not.

Examine for the Best

To decipher outcomes and discover the appropriate system. Find the best strategy apply the SPSS statistical tool to examine the information.

2.5 METHODOLOGY AND TOOLS INTRODUCTION

Research review connected statics in the system inspecting strategy of the people from the populace concentrated on and affiliation information gathering method. Questionnaire development is a strategy to enhance the exactness and reactions to overview. In my research I have developed very nearly 20 or more inquiries to gather the data. These inquiries being sent to close around 40 Pakistan software houses. These

overviews found Lahore, Faisalabad and Multan. These products comprise 25 to 120 plus workers and a few of software houses are confirmed and some are definitely not from software house. To take care of the issue, this research required the review so pick the overview, strategy. Overview, it is utilized to gather the qualitative information philosophy is an experimental field.

From the online review in two and half months and got 40 responses to go back and afterward to investigations the data picked the SPSS tool to get outcomes. Following accumulation of the required data and had put the information in SPSS tool and then create the investigation via this apparatus. Picked this instrument since its easy to understand and the effortlessly accessible.

2.6 CUSTOMER PRECEPTION ON AGILE METHODS

A few parts of customer association are analyzed in the composition on agile enhancement. How satisfied customers are with agile procedures, others demonstrate the customer part, and some consideration on the planned exertion between a customer and the headway bunch. Besides, on the impact of Scrum on extra time and customer faithfulness, that customers assumed that the step by step social occasions stay up the most recent and the orchestrating get together to reduce the perplexity about what must to be delivered are valuable ".One of inside close to getting the chance to be incorporated" Then behavior of the customers was found to change. Concerning purchaser dependability's with deft change procedures. Focused on the presentation of a coordinated method considering XP and the individual programming procedure. They communicate that the customer was dependable manage over the advancement technique t, which "extremely lauded via customer at the project shut down". Notwithstanding, they will understand the new goals that the designers will hold of their customers will hold be set up the Scrum strategy with the objective. The customers communicated that their satisfaction with the project that relied on upon XP was more conspicuous than with past projects at the association [7].

3 PROPOSED WORK

3.1 RESEARCH

Throughout the review of literature agile is a strategy which is utilized for the improvement and make it adaptable dissimilar to the traditional programming projects and past couple of decades work on risk administration framework which is disseminated in agile improvement and I got experience from my most recent couple of years study that there is particular changes in agile advancement procedure furthermore numerous more most recent strategies likewise utilized which I learnt from my study as IT understudy. Classification or

arrangement is finished by analysts will empower me anticipate supervisors furthermore engineers that the work is completed. I will have the capacity to manufacture some sort of systems a few philosophies furthermore characterize the same sort of risk free structure. These things would make sense of the hypothesis furthermore some exploratory work for both models. The methodology which would be utilized this sort of system known as deductive methodology. I trusted that this one is a better approach it is a stage for examining the outcomes which will be made by test explore and built up hypothesis. It is additionally conceivable to direct this hypothesis, we accumulate issues identified with risk from engineers group, furthermore lead meeting by this illuminate the issues.

The hypothesis built up by a review of literature, furthermore by my own particular handy involvement in an agile work will gather test information from the worlds best and top programming organizations report with me. At that point, by utilizing agile and waterfall models to perform investigation on the report information. A technique which is utilized to build up another system with the examination of traditional models and waterfall model, from the investigation and exploration industry report on the non unpredictable and procedure will give by recorded information. Achievement and disappointment of both models are an imperative part of the analysis. To acquire without risk technique for a traditional engineer to participate with agile strategy, it's must choose your underlying risk all through strategy item. It is an adequate methodology for this research.

Appropriateness: it is truly reasonable for test plan which will endeavor to break down or decide introductory risk which required for traditional designer moves in agile improvement. To examine risk in educated both models. Feasibility: Because of having some involvement in quick agency and waterfall model it is a possible experimental design or outline.

3.2 RESEARCH STRATEGIES

The utilization of reasonable research procedure empowers specialist to arrange of the research inquiry and issues guarantees with the purpose of the discovery results are suitable, fitting and accomplished the target. The Immensity of the section to provide a thorough indication of the research techniques which has been received which is to be assemble information in both research (primary and secondary). The part will likewise give avocation the picking strategy, they are applicable and appropriate for the implementation of the bit of research. A small amount of different techniques rejected approaches likewise archived legitimize that those strategies for accumulation which was not considered appropriate with the end goal of the sort of examination. The next segment of the section earlier than moving into

gathered information will be broken down and ascertained.

3.3 RESEARCH METHODS

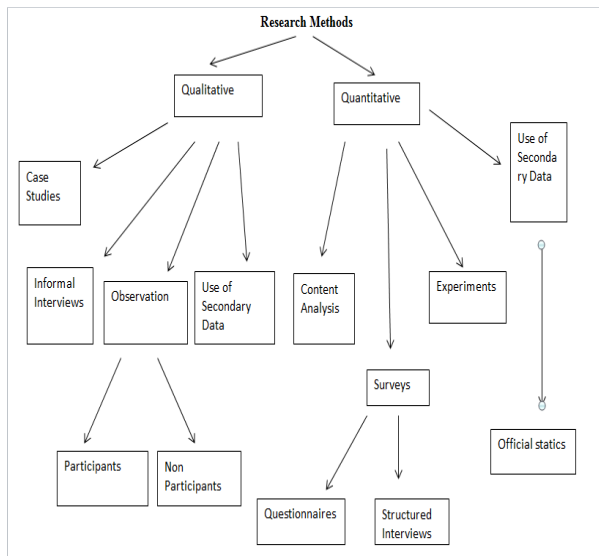


Figure 5 Methods of Research

3.4 RESEARCH APPROACHES

There are two types of research approach system that practiced most regularly.

- 1) Qualitative research
- 2) Quantitative research

3.4.1 Qualitative Research

Qualitative concentrated on obtaining of individual perspectives and give quality information that support the exploration question. Qualitative examination depends on an assumption instead of numbered information. It is exceptionally valuable in distinguishing patterns in various conclusions and extremely accommodating in testing and developing further theory. Qualitative strategy is explored in light of the fact that it reflects point of views of representatives of specific area. Qualitative examination less accentuation set at regular causes and impact state of mind while more the experience included in this [8].

Ordinary meetings which are utilized for the information gathering poll information additionally utilized for picking up individual views.

3.4.2 Quantitative Research

Quantitative exploration concern about "judgment" taking into account insights while qualitative research is 'judgment taking into account words' [9].

In quantitative exploration the strategies utilized for gathering information are: online study, interviews, and online survey. The strategies utilized as a part of quantitative are more organized then utilized as a part of qualitative techniques the upside of quantitative exploration it is more goal since conclusion which is

based on evidence, in this manner minimizing one-sided perspectives.

The basic one disadvantage of this technique, it is conceivable information gathered the client not precise and they don't represent genuine answer.

3.4.3 Mixed Method Research

The third research advance utilized for data gathering alongside both research approaches which is called "mixed" methodology. 'Mixed techniques, investigate take even minded approach which gathers both quantitative and qualitative information all the while successively'

Both of these research information consolidated on one study mixed methodology. The examination practiced by these individuals is a mixed methodology which is appropriate for the region of exploration. Triangulation strategy which one is utilized to gather information from both source information to dissect. "Triangulation is when two or more wellsprings of information, for example, identifying with two diverse exploration strategies are utilized to gather information and utilize together to investigate a topic" [10].

The deduction methodology regularly called "Top down" exploration approach. While it does not concur with that and said this technique" involves the improvement of a calculated and hypothetical structure preceding its testing through experimental perception. It is unmistakably expressed that finding inquire about firstly accompanies a hypothesis and afterward later hypothesis are being tried and watched which demonstrate or refute a given speculation. Along this lines projects administrators and undertaking group assess a speculation in view of the hypothesis which is regularly taking into account issue found being developed life cycle then. The following phase to test that hypothesis which one in the various path and finally outcome either the affirms the given theory or failed which in light of the result. For a moment it is other components of suggestion is adjusted [11].

Theory > Hypothesis > Observation > Confirmation > accepted or rejected

The actuation exploration which is an opposite request of the deductive examination. This kind of the examination, begins with the particular perception and completed with the specific hypothesis.

Observation > pattern > Hypothesis > Theory

A case with regards to agile advancement procedure, with the theory is that it is more reasonable for little and medium size task. Keeping in mind the end goal to build up a hypothesis, to build up a hypothesis, hypothesis could be drawn from the perception and the examination will base on those theories. Individual perspectives being essential in this sort of the system.

3.5 Justification of selected method

The area discusses about selected philosophy, strategies, method alongside justification and advantages.

There are different strategies and methods accessible for this kind region of examination yet bended methodology is reasonable and also fitting for this specific environment of exploration. Prior to talking about the reasonableness of picking exploration procedure and the philosophy of the phrase characterize by research method the practices and instrument utilized the stage of research assignments such as perception and also a data dispensation [12].

The advantage of this technique is it will give a multi dimensional method for gathering information, the examination point of view which are changed after information had been gathered from this investigation diverse ways which yield best disclosures [13].

Mixed strategy explores "class of the exploration where the examination mixed or consolidates above both research (qualitative and quantitative) examination procedure, strategies, methodologies, ideas, or dialect into single study" in the mixed techniques for information gathering the examination inquiries is most vital and major part in this way, the utilization of examination strategies ought to be most suitable all together accomplish valuable results. The quality and shortcoming of two exploration approaches permit the analyst to consolidate techniques and procedures to accomplish the best result. Allude it as "crucial standard of blended exploration"[14]. The examination approach has been executed in this exploration venture is mixed methodology. It is evidently blended methodology is most fitting for this territory of examination, which permits you to explore all the more unique and bigger number of perspectives to deliver best results. So as to give the complete perspective of issues information from both exploration which gathered.

3.6 Survey Research

The survey is research which includes choosing an agent based and fair-minded example, gathered from gathering you wish to study or concentrate on. The analyst will focus on the right individuals the subject picked in this exploration. The normal strategies utilized for that are up close and personal, interviews, phone. Survey type research would permit the analyst to gather a high measure of information in an extremely financially manner. There are a few online devices used to lead overview like survey monkey, Google structures and a couple of more online sites. Google structure or forms are utilized to make review question which is ideal and metal reasonable decision for this region of exploration. The review is led in two critical partners of programming improvement project. The survey is made independently for these two partners and sent to various programming houses. There are two kinds of overviews elucidating and systematic study. Descriptive study concerned with identifying the recurrence of a specific reaction of review

gathering while explanatory study, research and examinations the relationship between various components in test groups.

Advantage	Disadvantage
Practical	Individuals may not feel urged and agreeable to give genuine answers
No questioner, respondents are additionally ready to share data	Individuals may not be completely mindful of their explanations behind any given answer because of absence of learning.
More adaptability and dependability	Simpler to disregard
The wide scope of information be gathered	Problems with legality

3.7 Interviews

An Interview a correspondence, inquiries being asked and reactions are specified. With a restricted stream of data, for occasion, a discussion or location. One can isolate a meeting which consolidates bidirectional correspondence. In basic talk, "meeting" recommends a one-on-one exchange with one individual acting in the part of the inspector and the other in the part of the interviewee. Meets if all else fails fuses an exchange of data from the interviewee to the inspector, which is customarily the real part of the meeting, ignoring the way that data moves can happen in both heading in the meantime. The inspector makes a solicitation, the interviewee reacts, with people turning talking.

4 RESULTS

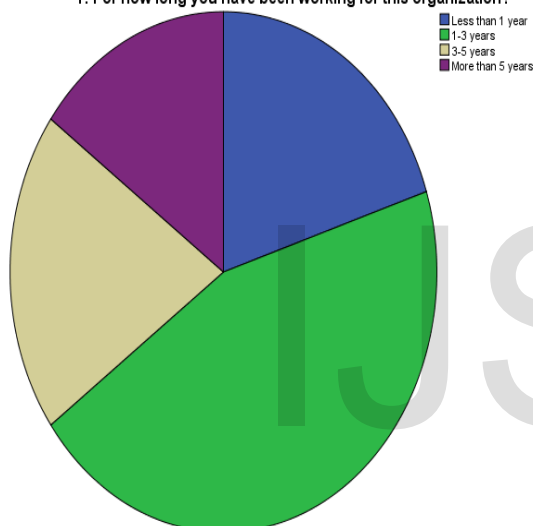
The chapter, about results and discussion which provides a thorough review of data gathered for the duration of the data gathering segment of the research. There was semi structured meetings and online questionnaire respectively, on the behalf of online questionnaire first was dispersed in project managers and the second one distributed to project team members. The data gathered from two sources which are the important areas. Any of the software projects these two are considered the major stakeholders. The main goal was to collect information from project managers and from the project team members because throughout the development process theses two stakeholders have to interact with each other.

1: For how long you have been working for this organization?

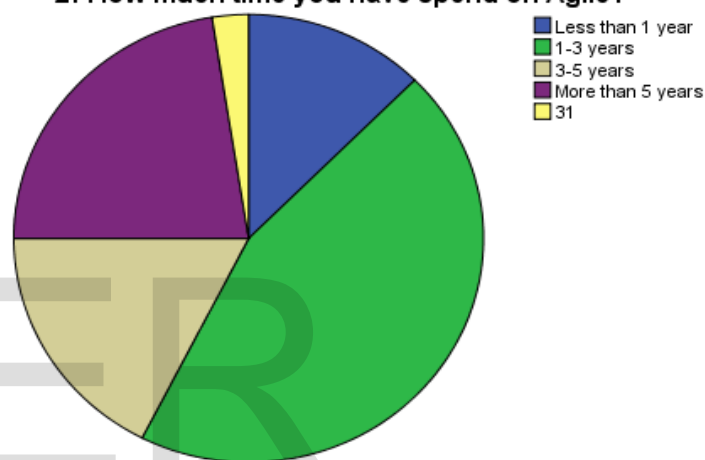
	Frequency	Percentage	Valid Percentage	Cumulative Percent
Valid Less than 1 year	8	16.0	20.0	20.0
1-3 years	18	36.0	45.0	65.0
3-5 years	8	16.0	20.0	85.0
More than 5 years	6	12.0	15.0	100.0
Total	40	80.0	100.0	
Missing System	10	20.0		
Total	50	100.0		

Valid Less than 1 year	5	10.0	12.5	12.5
1-3 years	18	36.0	45.0	57.5
3-5 years	7	14.0	17.5	75.0
More than 5 years	9	18.0	22.5	97.5
31	1	2.0	2.5	100.0
Total	40	80.0	100.0	
Missing System	10	20.0		
Total	50	100.0		

1: For how long you have been working for this organization?



2: How much time you have spend on Agile?



The primary question is taken to determine the experience of participant in agile methodology. Although agile is a modern style of the development so the question gives the idea of their personal experience. It can be seen that the 25 peoples responds who had familiarity in agile on this question. The participants who had experience of less than 1 year had 40% and the people which working in between one to three years had a ratio of 36% also. The statistics, which shows 24% participants are working in an agile from three to five years while no one had more than 5 years working experience in Agile.

Primary query for the project managers collect data which is based on their experience in the organization. This query was simple and straightforward and its goal was to know that the time they consumed on organization. which is 44% is a huge portion, while 40% respondents experience is less than one year. The experience of developers who had worked indevelopinindustry in between three to five years or more than five years both had a ratio of 4%.

The concluding data gathering methodology was semi-structured interviews which were considered in research. Those peoples involved, which had the experience in agile development. To examine the risk and the challenges from traditional style to change or transition one in agile it's a major aim of the research. The software houses which have recently adopted an agile development style the interview has been conducted with them. For project manager's risk management is a major issue and it is deemed effective for the exact problem.

In this accompanying segment of research, analyze the consequence of each question and the points behind that question.

	Frequency	Percentage	Valid Percentage	Cumulative Percent
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