A Comparative Study on Agile Vs Network Methodology

Balaji Sundramurthy [a], Mohaned Al Obaidy [b], Haydar Sabeeh Kalash [c]

[a,b,c] Gulf College, Muscat, Sultanate of Oman

[a] balaji@gulfcollegeoman.com , [b] mohaned@gulfcollegeoman.com ,
[c] haydarsk@gulfcollegeoman.com

Abstract. The methodology is the systematic approach to define the set methods or set of practices used in field of study to improve system performance. Lot of methodologies has been used in the IT and non IT industry for developing the trends in business using specific tools or process to improve the existing network characteristic. We are going to discuss on the comparative study on Agile and Network methodology. This paper gives clear explanation on how methodology is used for improving the standard of Organization and client satisfaction. The research on major finding of methodology is analyzed and how it will improve the productivity of the development by delivering the defect free software product. The Agile methodology research is done specific to the IT industry and Network methodology analysis is done related to network projects in the organization. The comparative study is done on the advantages and problems faced in both the methodology. The factors that are involved in the research work are project size and duration, cost, quality, resources, risk management, coordination within team, customer interaction with these detailed studies of the agile and network methodology is done

Keywords: Methodology, Agile, Network methodology.

1 INTRODUCTION

Agile Methodology mostly used in IT industry for the iterative and incremental approach of software development. Agile has become more popular nowadays because it gives more importance to customer satisfaction and they are involved with the development team throughout the project lifecycle. Requirements can be changed frequently during any phases of the software development. Network Methodology also an iterative process for designing the network synthesis which aims to develop the new network for telecommunication which provides better service for the operator and subscriber. This methodology used to design the network with specific layout. The main objective for the network design is to increase company profit and revenue, to reduce the network costs, security improvement, better customer support and services. Top down network design methodology is used in most of the network companies for network designing from the upper layer of OSI model. The meeting with the client is held to understand the basic usage of the new network, research on client business to know about client market, services and competitors. The checklist is maintained to determine whether all client requirements is addressed with the structure of customer corporate, understand the network design project scope, customer need to give clear explanation on the policies approved by the vendors , set of protocol need to be used in the platform, budget and schedule for the project. Both Agile and Network methodology gives importance for the customer oriented approach for the project development with frequent requirement changes and iterative release.

2 AGILE MODEL

Agile model is the combination of incremental and iterative process of development; the main motive is to focus on the adaptability of process and satisfaction of customer with fast delivery of the software product. The software product development follows the method to break the product into small modules of development. The build is performed with number of iterations. The iteration will happen in the interval of three weeks. Each iteration will be involved with analysis planning, design, coding, unit testing and the acceptance testing. At the end of iteration the working software product is delivered to the customer. The most popular agile methods include Rational Unified Process (1994), Scrum (1995), Crystal Clear, Extreme Programming (1996), Adaptive Software Development, Feature Driven Development, and Dynamic Systems Development Method (DSDM) (1995). These are now collectively referred to as agile methodologies, after the Agile Manifesto was published in 2001

Agile helps to develop the team work and the cross-level training will be done so that it will directly to develop the functionality of the system. The less resource is needed for development. The requirement can be change at any phase of development. At every iteration partial developed software is delivered. This type of methodology has the process followed with less documentation and easy to manage. Individual responsibility in the team will be more importance. Agile model of project development is used by the organization when new changes need to be implemented with low cost because the frequency of the release of the product is more. As the development is in iteration model, the developers need to update the schedule only for two of three days which depends upon the complexity of requirement changes. In Agile methodology less planning is required to start the project. The End users needs are changed in a dynamic business and IT world. Changes need be discussed with features and removed based on the feedback given by the customers. Both the development team and customers are given freedom of development.

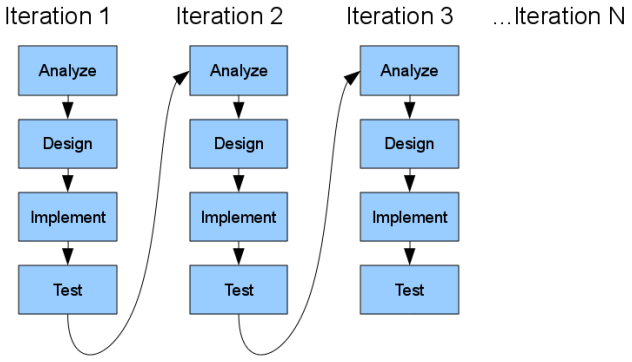

Fig. 1. Agile Model

3 NETWORK MODEL

The Network model is an iterative process with the encompassing the design of topological design, network synthesis and network-realization and its aim is to ensure the telecommunications network or service needs of the subscriber and operator. The Process is tailored with the each new network or service. The traditional network methodology involves five layers of planning such as planning of business, network planning for long term and medium term , short term network planning , IT asset sourcing , operations and maintenance. Each of these layers incorporates plan for different horizons; the business planning layer determines the planning the operator must perform to ensure the network is required with different life span. The operator and maintenance layer will examine the network which runs in daily basis.

The most used networking methodology is by CISCO which give the design and layout for the network design. The Intelligent Information Network (IIN) that help to add the intelligence of network with the IT infrastructure. The Service Oriented Network Architecture (SONA) which is the traditional network structure and assumes that all the network are unified and the data flow ill be traverse through the single network architecture. The Prepare, Plan, Design, Implement, Operate and Optimize (PPDIOO) are a lifecycle method that Cisco uses for network management. The Process for the lifecycle management is used for assisting in the total cost of ownership for the network, increase network availability and improving the agility to make changes in the network structure.

This methodology which defines the continuous life-cycle of services required for the network. Most of the customers choose the CISCO PPDIOO methodology as it as lot of benefits which lowers the total cost of network ownerships in which they can be able add new technology to the already existing network , procure equipment , employees need to be trained , performance of the network manage and network is maintained. We can be able to respond rapidly to the changing business and adapt to the change demands of the customer and business environment. This will helps to speed the access to the applications and services. The downtime of the network can increase the availability of network by the troubleshoot. High availability depends on carefully planned redundancy, sound security, and scalability and also requires diligence throughout the network lifecycle.

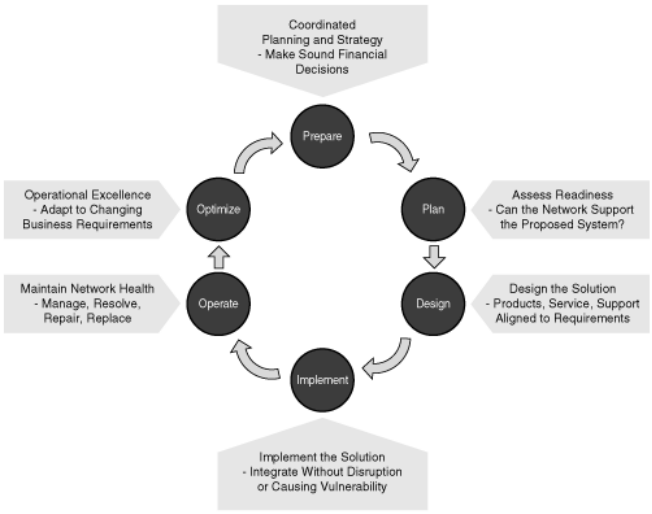

Fig. 2. PPDIOO Model

A network design is used to meet the increasing the complex requirements of the organization that its support. As a network designer, we have to understand the organization needs and follow a methodology that helps to match the network implementation. In the current business market, the organizations are looking for the way with customer relationships, accommodate with the mobile workforce and the productivity is increased. Companies are looking for the integrated approaches of the emerging technology like virtualization, wireless communication, and application level of business solution to the enterprise level. The challenges are faced with more flexible and dynamic network architecture. Networks are designed to support applications; we want to determine the network services that we need to support. Steps to identify customer requirements are as follows:

Step 1. Identify network applications and services.

Step 2. Define the organizational goals.

Step 3. Define the possible organizational constraints.

Step 4. Define the technical goals.

Step 5. Define the possible technical constraints.

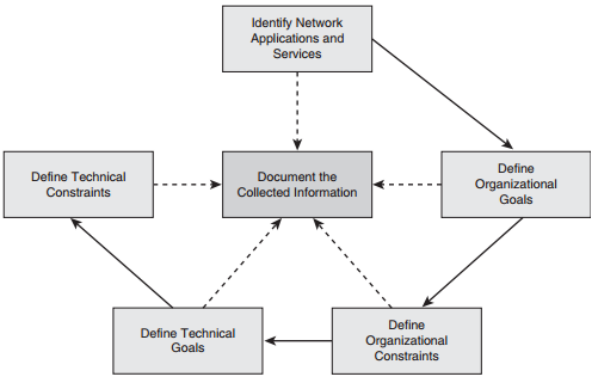

Fig. 3. Identifying Customer Requirements.

4 ISSUED FACED IN AGILE AND NETWORK METHODOLOGY

The agile methodology are followed mostly in IT industry but it has some issues like it cannot be used in large duration project , as the requirement changes frequently there may be case where miss of critical test led to the failure of the product development. Only technical strong resources are involved in the development then the newbie programmers. The network methodology needs detailed analysis for the specific requirements and ensures that all network services are considered. It requires more training for resources to implement the network methodology and it's more expensive. Different processes are followed in the network methodology depending on the organization standards.

5 COMPARATIVE STUDY

The comparative study on Agile and Network model is briefly discussed in above section. Both methodology plays major role in customer satisfaction and certain process need to be followed for the development/ networking of the software. Methodology used in the network design architecture is defined which enforces the problem centric approach by explicitly define separate specification, design and implementation phase. Depending upon customer needs the planning is made. In agile model first client input of requirement will be discussed with the technical team then the prototype is developed to show demo for the client once it is confirmed then the development phase is started. In similar approach the network model also gets the customer input in initial phase to gather information about the network then after the network audit is performed which gives detail information about the network and needs of the customer description. After that the traffic analysis of the application protocol is analyzed for better result in the design of network. The tool to develop will be discussed within the team for the fast delivery of the product. Both methodology use iterative process of development. The budget of the development will vary depending upon the requirement need by the customer. During iterative process of development frequent meeting will be held with the team to discuss about the issues and risks in the development/networking and proper mitigation plan will be analyzed. In the early phase of development/networking the process is evaluated and then validates the technology requirements. Resources used in both model are to be more dynamic approach and ready to do develop the requirement changes given by the client. Both follow less documentation and real time development approach with development /networking team and client relationship is maintained.

Let us discuss on the real time system developed using these methodology. For Example, in the software development of telecom domain project if we follow the agile methodology it will help the project management to deliver the quality product as customer needs because both the development team and customer will be in one location so that they can able to analyze the requirements whenever there is a need. Rebuild and iteration of each phase is done successfully. Mostly this methodology is used in the software development project if it is implemented in other industry will help to deliver the product in productive way. Customer requirement analyze is given more important before starting the project development.

When we talk about network methodology it's purely related to the networking concepts only. Initially they will check the network connectivity by forecasting the network service available that is currently operated, cost for implementing the network which differs from location to location. For approaching the network connectivity there are lot of work need to be analyzed before starting the project. Nowadays lot of tools are available for the network planning and design are network configuration tool,OPNET , Alcatel lucent for optical network design and EDX wireless networking tool. Lot of documentation works need to be done so that no misleads of the requirement. Process of development for network is different for each and every project that is developed by the team. No Standard is process is followed and it is more complicated to understand and proper training to be done for using the network design methodology. The resources have to be more challenging and adapt to the changes in further project work. Without network real time knowledge it is hard to work on the network related project. In the below table we are going to briefly discuss on the comparative study of Agile and network methodology.

Agile Methodology	**Network Methodology**
Customer satisfaction is given importance to develop the software product with certain process	Customer satisfaction is given importance to implement the network project in the organization.
The services provide in agile model is to focus on business value, early product delivery, allow requirement changes, focus on users and improve quality.	The network model services is used for the increase the network value and return on investment , help increase productivity of network staff and help to improve network availability , resiliency, security and scalability.
Iterative process is followed for the development.	Iterative process is followed for the implementation.
The agile methodology is used to develop the software development project.	The networks methodology is used for the development of the networking connectivity within organization
Prototype for the software product is development with less documentation.	Blue Print for the networking is prepared for the implementation required lot of documentation work.
Process followed will be same for all the software development	Processes that are followed will slightly differ depending upon the networking connectivity.
No special Training is required to understand the knowledge of agile methodology.	Training is required to understand the knowledge of network methodology.

Training cost is less.	Training cost is more.
Freedom of development will be given for the developers.	No such freedom is given for the resources they should follow the design tool to improve the productivity.
The main objective for the agile is to improve the productivity of the software development and to deliver the defect free software.	The main objective for the network design is to increase company profit and revenue, to reduce the network costs, security improvement, better customer support and services.

Table 1. Agile Methodology Vs Network Methodology

5 CONCLUSION

In this paper we have discussed on the overall view on the Agile and network methodology used in the industries and how it help for the customer need. To use agile model, people attitudes toward communication, user involvement and frequent release is more important than the specific process we use in the traditional approach of software development. In network methodology, CISCO model is used mostly in the organization to have complete detail procedure for designing any network as customer needs. Lot of similarities exists in the phases of the development /networking methodology. Both focus on the customer involvement and how the organization satisfied their needs with certain process need to be followed. We can tell both methodologies are customer centric approach of process development/networking. Agile methodology in software development has proper process so that it is easy to follow and best methodology when compared to other methodology followed in other industry. Collaboration within the team is maintained and which help to deliver the product on right time. As the research is done in both the network and agile methodology, we can conclude that the productive product is developed and delivered only by the agile methodology in effective way. The Networking methodology differs from each project and its need more training and more cost. The Future work is to analysis how the agile methodology improves the productivity in non IT industry and need clear approach whether this process need to follow or any other fine tuning of methodology has to be done. The network methodology needs to do further research work so that standard concept to be followed all types of network project. One thing is clear whatever the project development may be, we need to follow certain methodology for the successful deliver of the project. We can also do future work how the agile methodology will be used in large duration project development.

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Biographies

S.Balaji completed his MCA (2005) from university of Madras M.Phil (2008) from Periyar University currently pusuing PhD software engineering from St.Peters University-India. He worked as a lecturer/researcher in different colleges in India and currently in Oman. He is currently working as a lecturer in Computing Faculty in Gulf College-Oman. His current research interests in software engineering, agile methodology and software testing. He has done a certification course in software testing course from STC, India. He has great passion for teaching and wide knowledge in research publications. He had published 9 papers in reputed journals and conferences.

Dr. Mohaned Al. Obaidy completed his MSc (1995) in Computer Engineering from Baghdad University- IRAQ, his PhD (2011) in Complex Systems Engineering from De Montfort University-UK. He worked as a lecturer/researcher in different countries such as; Iraq, Libya, Jordan and currently in Oman. Mohaned is currently the Head of Computing Faculty in Gulf College-Oman. His cur-rent research interests in energy optimization of Wireless Sensors Networks, Intelligent Mobile Robots, Swarm Intelligence, and Computational Intelligence. He is a member of Artificial Intelligence and Social Behavior (AISB) society in UK, a member in Omani Academic Accreditation Association in Oman (OAAA) and a member in the Iraqi society of engineers. Also he is a reviewer and a member of program committee for many International conferences. Mohaned also has a wide industrial experience as a system engineer and a consultant for sensors network design.

Dr. Haydar Sabeeh Kalash has PhD in Communication & Network Engineering from Concordia Northwest University. He has Master in Electrical - Communication Engineer from University Technology Malaysia. He has Bachelor with owner of Hardware and Network Engineer from Coventry University. He has a long industrial technical support experience about seven years and teaching experience more than eight years in the area of

Communication and Network Engineering. Currently he is a Lecturer in the Faculty of Computing Sciences in Gulf College - Sultan of Oman - Muscat.