

A CRITICAL ANALYSIS OF PRODUCT OWNER'S COMMUNICATION AND DOMAIN EXPERTISE ON PROJECT SUCCESS IN AGILE DEVELOPMENT AND ITS IMPACT ON THE SOFTWARE DEVELOPMENT BUSINESS

Ahmad Salman¹ M.phil, Summaira Malik², Sohail Ayaz Muhammad³, Molood Seifi⁴, Zermina Tasleem⁵, Mina Seifi⁶

¹Department of Management Sciences COMSATS University, Islamabad campus

²Department of Management Sciences COMSATS University, Lahore campus

³School of management, University Sains Malaysia

⁴School of Housing Building and Planning, University Sains Malaysia

⁵Ghazali Shafi Graduate School of Government, University Utara Malaysia

⁶School of Management, Garden City University, Bangalore

ahmad.salman111@gmail.com, drsummairamalik@ciitlahore.edu.pk, rsohailayaz@gmail.com, seifi.molood@gmail.com, zerminatlasleem@gmail.com, en.pro1993@gmail.com.

ABSTRACT: *There are different strategies that have helped to increase the success rate of the project managers, but the question remains whether the domain expertise and the communication of the product owners can increase the success rate of the projects. The present paper takes a case of agile product development projects and has empirically tested the relationship between the communication and product owner domain expertise with the success of the project. A significant relationship was observed between the dependent and the independent variables. It is essential to understand the agile methodology framework because continuous changing environment requires a complete understanding of the agile framework. Customer satisfaction and projects completed within time and budget are used as the project success characteristics. Proper training is required for the project managers to shift towards agile framework because when working on large or complex projects, in-depth knowledge about the agile framework is required, and it is vital to enhance the project managers understanding before working on large projects.*

Keywords: Project Management, Agile Project Management, Product Owner, Stakeholders, Project Success, Communication, Domain expertise.

INTRODUCTION

Organizations all over the world recognize the importance of project management in their businesses. It is very vital for organizations to make sure that the projects are successful [1]. Earlier studies focused on three main objectives, which were time cost and scope, but throughout the years, project management has evolved and within the context of dynamic and complex project management environments. Project managers are finding it hard and very problematical to meet the requirements such as time, cost and schedule of the project while using traditional project management model [1]. Project management plays a vital role in the success of a project, especially in the software development project. The collaboration between the components like time, cost and quality increases the threat and ambiguity that the PM has to accomplish effectively in order to deliver a project within the given budget and the deadline[2]. The failure rate has been continuously increasing since the last decade, especially in IT, because project managers are unable to meet the changing requirements of the client on time and budget allocated to them [3]. The software development field is full of problems and complex guidelines which need to be fulfilled in order to develop a project and due to this complexity, uncertain results or outcomes can be produced [4]. Different factors can be thought of as failures in managing software development projects such as different engineering practices that are not required to complete the project, inadequate project risk management practices and most importantly, ineffective use of project management. As the requirements of the customers evolve with emerging technologies, the business leaders have also of making necessary changes in the management structure and workflows to meet the changing requirements. Project managers are facing difficulties and trouble while

managing these changing requirements and trying to keep the projects within the constraints of time, cost and scope [5]. This is where agile project management comes in. It not only helps the project managers but the product owners as well to adjust their requirements and the management of the product accordingly to their needs [6].

The culture and self-organizing teamwork is driven by communication in the organization these days [7]. Communication efficiency in any project can have a significant impact on the success of the project as compared to the technical skill [7]. Studies also revealed the fact that along with communication and domain expertise of product sponsors also plays a vital role in the success of a project. The stronger the domain expertise of the product owner, the more chance of achieving project success.

This paper discusses the need for researching further on how communication [8] and domain expertise [9] can contribute towards the success of a project in agile product development. Saynisch (2010b) asked for further research on understanding new risks and finding new ways on how project managers manage items in agile product development, especially in the software development industry. So further research on communication and domain expertise can enhance the chances of achieving project success.

Continuous changing requirements, especially software development teams, struggle with different variables in the projects that affect the success of the project [10]. Secondly, there is also ambiguity seen in the requirements of the customers as well because of the lack of knowledge in the domain [11], and when there are complex projects, users do not understand the complete requirements up front and continuously give feedback and ask for the changes [12]. These kinds of things also decrease the chances of project

success even while using Agile Project Management techniques [11], and it was also the leading cause of selecting software industry for this research.

Product development projects have mostly failed due to unclear requirements of the clients, low user involvement in developing and testing phases and poor communication with the customers. The gap between the product owner communication and the project manager is increasing, and furthermore, the domain expertise of the product owners is also a severe issue that affects the project completion rate. Due to which project managers are finding it challenging to meet the changes and able to fulfil the requirements of the customer within time, cost and scope, so proper research was required on the variables such as domain expertise and communication on project success which is done through this study.

Literature Review

Understanding a project and its management, especially in this modern era, has become a topic of intense research efforts and interest in this field is continuously growing [13]. Up till the last few years, project management was focused and done with past project management techniques, which can be seen changing now. The project managers cannot rely on past techniques, and a combination of different techniques was required [13]. There are situations in which agile software development methodologies combined with old traditional waterfall approaches in the project management to make the understanding of agile project management clear, and this is also researched by the researchers. Secondly, risk mitigation literature and different factors and also provide excellent information regarding the completion of the project within the time, cost and scope [14]. Previously conducted researches containing customer involvement and project success and also focusing on the iterative delivery process have also been studied for this paper to gain the best in-depth knowledge and to find the best solution to the problems faced in making a project successful.

The product owner is considered to be responsible for communication between the customer and the development teams [15]. With the help of proper communication, the product owner plays a vital role in making the product come to life [15]. Secondly, the communication between the agile teams and customers is also one of the most extensively explored topics in this research. Communication importance and its effect of the project management process is also outlined by a research conducted by Alexandra Mihaela and Danut in 2013[16]. Until, technological advancements, the technique used in project management was a traditional waterfall approach, and it worked fine for planning, initiating, executing and closing of projects [17]. As the technological era started to enhance, the projects started to become painful, and the requirements from the customers started to become complicated. Cooke-Davies et al., (2011) stated that the development teams started to face issues when it came to plan, execute, control and also in large projects. The components which were thought easy to take care started to include many different subparts within them, and they became a complicated part of the system. To make sure that all the subparts of the components were correctly and adequately included, integration was needed. Similarly, to the

above situation, these difficulties were faced in software development projects as well, and the teams using traditional project management approach found it very difficult to tackle with the situation, and the failure rate in the software development organizations started to increase [18]. A new approach and technique were required to take care of these complex situations and changing requirements from the customer in the project management framework [19].

Agile Project Managers must be determined and should carry out well in a team focused situation, and they should also be flexible and creative as compared to past where they focused on traditional project management approach [20]. Using agile is also expensive or considered even more expensive as compared to waterfall methods [21]. The great advantage of using agile is that the customers get the product according to their wishes and since they were involved in the development at each step, so they become satisfied as well with the product [12]. In order to use the agile methodology, a shift in the mindset of the project managers is required because PMs who work on traditional or waterfall methodology find it hard to tackle with the agile framework. Proper training is required to shift a PM to the agile framework and making his thought accustomed to the agile framework [21] because the iterative nature of complex projects within the agile development and project management framework requires in-depth understanding, enhanced communication and enhanced understanding of the requirements [22]. The changing requirements in the agile development affect the profitability of the project and organization that takes the project [23]. The total cost of the changes that are requested by the stakeholders and to what extent these requirements will cost across the project should be appropriately communicated to the stakeholder who is associated with the development of the product [24]. The more complex the system, the more communication is required between the team members and the product owner and without proper communication agile framework collapses, and the project as a result fail. So, communication is a vital part of the success of the project, especially in agile product development [25]. Communication among agile product development teams and product owners is vital in the successful delivery of the project [26]. Product owners keep on changing the requirements after the beginning of the Project, and the product requirements can keep on changing till the end of the project and until the product owner becomes satisfied with the project [17]. So, it is essential that the development teams and the product owner or the stakeholders continuously communicate with each other throughout the project lifecycle, so the project becomes successful at the end [27]. The better the communication between the members, the higher the chance for the success of the project [28]. Project Management Institution also noted that communication plays a vital role in the success of the project and increases the chances of succeeding by 22 percent [29]. Furthermore, the domain expertise of the product owners are also considered to be very important if the project is to be a success [29].

Theoretical framework

For this research, a non-experimental quantitative design was carefully chosen, and it was further analyzed with the help of statistical tools on the variables discussed above and tried to

find the impact of the independent variables on dependent variable which was project success. There are various factors that influence these independent variables as well, and in the agile framework, these two factors play a crucial role because communication and product owner domain expertise is significant in the success of any project. Project managers who are successful in the implementation of an agile framework should start the team with the right understanding and mindset and also try to maintain a positive approach [16]. The research model is shown in figure 1.

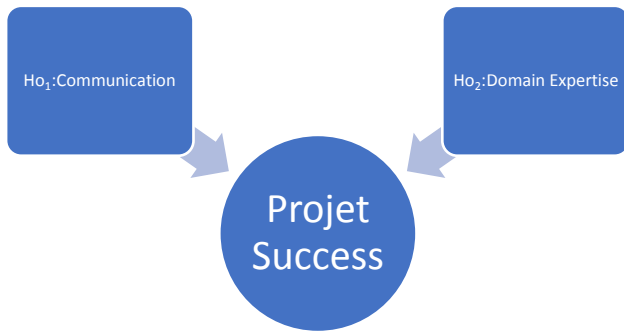


Figure 1

Methodology

The proposed methodology for this type of research is to use quantitative and non-experimental design. A survey instrument is used in this paper, which is divided into various sections. Questions are related to the communication between the agile product development team and the product owners. The survey also asked questions related to the domain expertise and the impact of domain expertise of the product owners on the success of the project.

The survey used in this research was distributed electronically and manually to collect complete 260 data from respondents. The sample was randomly generated, and the survey questionnaire was sent to those people who meet the criteria for the sampling. There was no biasness shown as the researcher distributed the questionnaire to different software houses all over Pakistan, and proper criteria were mentioned in the questionnaire. After collecting the data, it was imported into various statistical tools to do the regression and correlation analysis.

RESULTS AND DISCUSSION

After going over the sample of 260 project managers, valuable information was gathered. The data was tested using regression and correlation analysis, it was found that there is a relationship between communication and the project success, but the definition of the project success can vary from project to project. So, there can be other factors as well that can influence the success of the project. Similarly, when it comes to domain expertise of the product owner, there was a relationship found with the success of the project. The literature of the project success also supports these findings as it states that if the domain expertise of the product owner aligns with the product being developed, the changes of the project being successful significantly increases. After running single and multiple regression tests on the data obtained via a survey questionnaire, the relationship between the

independent and dependent variable was found. The following information was gathered after conducting these tests.

Communication and Project Success

The first question of this research focused on independent variable communication and its relationship with project success. The correlation test was used to explain how closely aligned this variable was with the project success. The correlation value of .590 indicated its positive relationship towards correlation indicating a relationship between the communication and the project success.

Similarly, a multiple regression was run against the definition of the dependent variable, which was project success. Multiple regression tests were run on the data. It explains that organizations implementing agile framework or project managers working in the agile framework relate to project success importance as 3 out of 5 times, which means that communication between the product owners and agile development teams plays a crucial role in the success of the project. The correlation values were taken from 260 project managers also depicted a strong relationship between the project success and communication among the agile product development team.

Project success and product owner domain expertise

This research question discussed the fact of whether there was a relationship between project success and product owner domain expertise or not. Many questions from the survey focused on this question of domain expertise. Pearson’s R test conducted for correlation showed the value of .440, which indicated the fact that there is a movement towards a correlation between the project success and product owner domain expertise.

Multiple regression was also run against the dependent variable Project success. The correlation values showed a significant relationship among product owner domain expertise and project success. The data was tested with the alpha value of 0.05, and the highest correlation value that was achieved was 0.440 showing that there is a strong relationship between the product owner domain expertise and project success.

CONCLUSION

The main aim of this research is to find the relationship between the product owner domain expertise and communication with project success. The data after analyzing clearly showed a significant relationship between the dependent and independent variables. Both independent variables had a strong relationship with the dependent variable. From our findings, we conclude that there is a healthy and positive relationship between the project success and the independent variables which were domain expertise and communication for this research. The regression values are also reliable when it comes to analyzing them with the project success main factors such as time, cost and budget.

It is also crucial for the product development teams to make the required changes dynamically with the agile project management framework so that the project can be a success. The product owner or the customer who has ordered the project or the product plays a vital part to make the project successful in agile project management framework, and it is

also the responsibility of the organization to properly communicate with the product owner or the customer who has ordered the project. The product owner domain expertise matters a lot in the success of the project, and if the product owner who has ordered the product does not have any proper expertise in the field, then there is a huge chance of that project in becoming a troubled project which eventually leads to the failure of the project. With the help of proper communication with the product owner, who has ordered the product, excellent results can be achieved and if the product owners possess proper expertise in the field, then there is an excellent chance of the project to become a successful project in Agile Project Management and generate positive revenues not only for the software development business but for the product owner's business as well.

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