International Journal of Computer Engineering and Information Technology

IT Project Management Techniques for Development Professionals

Dana Rasul Hamad[1], Diyar Salah Fadhil[2] and Ababakr Ibrahim Rasul[3]

[1, 2, 3] Department of Computer Science, Faculty of Science, Soran University, Kurdistan Region, Iraq

[1]gdana.hamad@soran.edu.iq, [2]diyar.fadhil@soran.edu.iq, [3]ababakr.rasul@soran.edu.iq

ABSTRACT

Managing IT systems are absolutely crucial so as to control all facilities related to that system properly. As for some organizations happining issues with thier system will decrease their business. Now projects are developped and IT developers are still improving their knowledge in using methodologies and doing investigation in order to choose the best method to complete their project. Methodology differences are examined according to some process and features between each of those. Also evaluating them by doing some research and comparing experts their point of view. So far their are two common methodologies which will be used which are (AGILE and PRINCE 2) both of them have the same target but in different style and different techniques. These two methodologies can be evaluate according to their features like Cooperations, Using suitable software, Predictability and Teamwork.

Keywords: IT Developers, Agile and Prince.

1. INTRODUCTION

Nowadays Information Technology is one of the most significant aspects, which make a huge change with a variety of features, which means these features are dramatically changes due to IT projects over the last 5 years. Therefore, IT projects could make a major affects of some developments and issues, that happened with organizations. However, some of these organizations tried to upsurge their benefits relying on IT features such as Databases and IT techniques, but there are some issues that happened during working with IT projects owing to lack of experience with using project's methodologies. The purpose of this paper is to specify and analyze some Database issues, And evaluating two different methods to choose the most suitable project methodology in order to deteriorate those issues for managing a specific type of IT project in the future.

2. LITERATURE REVIEW

2.1 What is ITPM?

2.1.1 Information Technology (IT)

IT is in reality changing about organizations, because due to IT tools the world of firms is increased, Fore example the number of internet hosts has grown from 9,472,000 in 1996 to 394,991,609 in 2006 [1], and Netcraft Survey (2014) reveals that there are 861,379,151 web hosts are opened every single day, and the majority of web host users is attempting to produce a better tool for organizations. And IT contains some techniques to keep executive management, such as taking action and make a decision to ensure that project success [2].

2.1.2 A project

According to safari dictionary online, A project is a temporary action to make a unique product or the nature of the project, which indicates a definite beginning and end. While the end is reached, which means that project objectives are achieved by the end of the projects.

2.1.3 Project Management

"Project management is a vital point in any organization's operation" [3]. However, there are some failures and disappointments that happened with IT projects or IT builders.
Caring about IT is crucial for project management ,and ITPM contain those projects, which rely on IT in order to manage their businesses [4]. Usually in large IT projects expect to be hard to manage and there are two key causes of these difficulties Firstly, there are some failures during use IT tools, because there are some new systems and new techniques that might be hard for users. Secondly, there is not a clear link between IT project and changes in companies needs [5].

International Journal of Computer Engineering and Information Technology (IJCEIT), Volume 10, Issue 9, September 2018
D. R. Hamad et. al

176

There are many features linked to information technology such as, Networking, computer science, Big Data, and so on, each of these features plays an important role in managing projects. Database, is one of these features which is vital to supporting projects and controlling functions, or it provides a platform in order to arrange, store, and retrieve data projects

Moreover, IT projects require different approaches involved in many highly effective leadership development programs over the year [6], and it is mentioned four important approaches to success project management:

- "value driven" By delivering benefits to organize.
- "Socio-technical": What techniques will be used? to identify the risks for the projects, which engage stakeholders in developing techniques.
- Using crucial methodology related to the projects.
- "Knowledge management": Using Expertise knowledge in order to improving project builde's experience and continue learning.

And above approaches might be required for IT projects to manage due to below features:

1- Planning, to make a decision, how the project going on?
2- Expectation: especially with a cost and duration.
3- Monitoring and Control from the start to finish the project.
4- Executing, make sure all steps are successfully completed.
5- Closing, give the project to client productively.
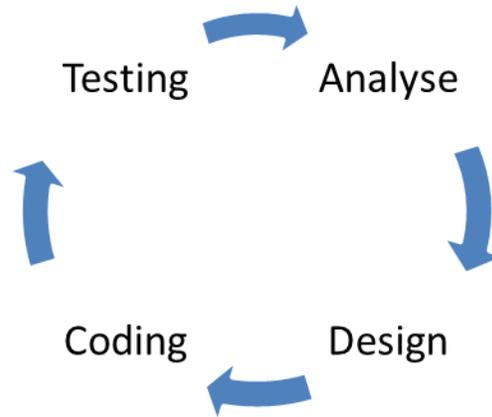
3. METHODOLOGY

Methodology is a process to structure the project management effects and controlling firms mechanism, due to collecting data in order to make a business decision. And Methodology is a key factor to increase chances for success. The methodology may include the recent and historical way to developing project steps (AGILE and PRINCE) are two of these ways, both of them are crucial to make a plan in order to get a real project.

3.1 Agile

Agile is an approach to delivering information technology or IT solution, which focus on changing business needs and technologies. In the last fifteen years, agile was the most noticeable change to software development methodology. And "Organisations apply

agile software development differently, depending on their needs, resources and goals" [7]

Agile is a type of project management or it is a way of working as a team. One distinguishing in characteristics of all agile methodologies is the lack of distinction between faces such as, analyse, design, coding and testing, all of these activities are acting together with inasprint

.

3.1.1 Agile Methodology and Its issues

However, the above Agile uses are crucial to developing Database project, but, depending on experts view, there are some drawbacks, which make Database developers to be disappointed with using this method, because sometimes situations are changes in IT projects these issues are affected a project.

One of the most perspective characteristics to develop projects is understanding cooperation of functionality. Agile methodology is Usually might be more difficult for Database programmers to understand the Co-operation of functionalities. "A decent overview is required for complex systems in order to avoid such confusion" [8].

Though, using the bigger software is essential for Database programmers, but depending on ISTOB website in case of delivering some large softwares, It is hard to assess the effort required from the beginning of the developing software life cycle.

And, Expectation is one of the most significant part of projects, which might happen in the beginning of discussion between clients and project developers, there is a much less expectation during working with Agile projects, especially at the beginning, about what is the project really going to deliver, which make a business case harder to define and harder to negotiate fixed price projects . So, without the maturity of disciplines of trading scope and clear visions this is potentially very dangerous [9]. In this case the team project members have not a prior experience about what is the project going on from the beginning to the end Because there is not a clear

International Journal of Computer Engineering and Information Technology (IJCEIT), Volume 10, Issue 9, September 2018
D. R. Hamad et. al

177

starting for them, and their work just like a training to finish the project, which means, work with this kind of method is like an adapting not prediction for team members, that is the big issue for projects because there is not a clear structure and plan, and they do not what will happen next.

Team working is essential to complete a whole project, nevertheless,there is a problem happened with team workers from the perspectives of a new scale software industry, particularly with Database builders, because it might be hard for some team members, especially, code testers to make everything being well defined at the beginning of the project,which make them be dissatisfied, because it gives them a different responsibility as they want. On the other hand, having a self-organizing with excellent understanding and communication among them is very difficult for a new and small scale software industry.

3.1.2   Prince2

The originated name of PRINCE2 is "PRojects IN a Controlled Environment" which is a very artificial, and all about control ,and, Prince2 defined as a " de facto process-based method for effective project management", which is used and established by the UK Government, And it recognized in the private sector [10]. Besides, this methodology provides an ability for individuals to manage their business and project risks.

Due to lack of well-informed management. There are not durable for many projects, but there is a high quality and durability for Prince2 methodology, which aid organizations to manage their projects properly, because Prince2 includes process, tools and high techniques, which is a major factor of success and improvement of developing software systems.

PRINCE2 is one of the most popular methodology to manage projects, arrange plans and controlling the management of risk's quality in a project management, Moreover, PRINCE2 poses some IT tools for implementing and typifying the best environment for organisations practice, Which offers IT services to easily understand the co-operation functionality, because, those who using these IT instruments they will implement organizational project steps practically [11].

There are some vital points about using PRINCE2 methodology:

- Offers process for managing project to provide a scalable for management of all kinds of projects.
- Each process defined a specific activity and objectives to be performed altogether with process key input and outputs.

- PRINCE2 describes the stages of project management to allow efficient control of regular progress monitory during work with the project.
- PRINCE 2 used product-based project plan, "here the aim of project plan is to deliver result not just about planning when the various activities are taking place".
- One of the PRINCE2 method's integral is a business case, business case has to be reviewed on basic regulation to make sure that business activities and objectives are met particularly important when these activities and objectives can change all the time [12].

By using this methodology there is a clear plan from the start to the end of the project stages, all of these stages are arranged in order, and organizing stages in order make a one stage become a plan for the next stage, so that make a link between stages. Project builders mostly focus on the end of the result, and during the finishing stages they feel that the only way to get success with the project is implementing stages properly. Also, the main framework of PRINCE2 is "controlling the stages", which means projects are divided into some levels,"each of these levels should be completed before a new level is begin" [13].

PRINCE2 method is one of the most advanced managing method, within this method " candidates are able to logically approach a problem", because they will provide a proper role to team members by allotting responsibility to everyone [14] .

PRINCE2 based on a major process which running from start up that is one of the most important goals of the project, then project teams can control the "project initiating process". After that, all steps will be clearer for all members then they can dominate a whole project easily [15].

PRINCE2 methodology care about the size of projects or how large of an organisation, in order to choose the most suitable software to complete a whole project. Because, depending on the size of projects, project builders can decide about the best software to cover the structure of their projects [16]. That is one of the most advantageous points of PRINCE2. Because if they use a big software or a big platform for a small project, or if they use a big software for small project that make a various problems during working with their project from the start to the end. For example, with data Warehousing projects, programmers cannot use a simple and small software, because they cannot store millions of details and data by using a small platform, that is why using a fit tool is very crucial to use by Database programmers.

this kinds of methodology is more predicted, because, project builders are focus on expected product's cost and duration and prediction of the benefits. On the other

International Journal of Computer Engineering and Information Technology (IJCEIT), Volume 10, Issue 9, September 2018
D. R. Hamad et. al

178

hand,with PRINCE2 projects, project builders, use plan's theme which describe an approach that to assist forcaste people to create project products to help project team members to expect "how the project will it take? and how much will it cost", and that is one of the Database programmers their point of view to think about the above expectation especially with cost and duration, because depending on the budget they can choose better platform and tool to finish at the deadline time.

4. EVALUATION

Depending on experts their point of view which mentioned above, there are some main points for each Agile and PRINCE2 methodology to illustrate, which of them might have better advantages to finish a project, those main points will show the below paragraph briefly, in order to choose the most suitable one (Agile and PRINCE2) to complete a project:
However, using these two methodologies are more helpful for managing projects and delivering information, and since discovering these two methodologies there are lots of changes will take place about business needs, but usually with seeing expertise's opinion, people can decide which one is the best to help project builders: below points separately mention these two methodologies features:

- Cooperation- functionality: Database programmers hardly understand the cooperation of functionality because its system is too complex. But, they could easily understand by using PRINCE2, because they use IT tools to implementing the best environment's practice.

- Using suitable software: Agile uses a large software sometimes it might confuse Database programmers, While PRINCE2 uses the fit software depending on the project's size.

- Predictability:Agile methodology is much less predictable, because team members cannot see what happen in the next step, But, with using PRINCE2 trying to anticipate risks PRINCE2 steps are linked together users know what will happen in the end.

- Teamwork: There is not a clear responsibility for Agile methodology to team members usually there are a new scale software industry, While PRINCE2 provides a proper role to team members.

Therefore, above points shows that PRINCE2 methodology is better than Agile to finish a whole

proposes, particularly Databases projects, because Database programmer should understand how is the steps going on from the beginning of the project and which software is more suitable to cover the project plan, because Database project itself is complex that is why using suitable tool is very crucial. Furthermore, PRINCE2 has a high quality and durability and also describe the stages clearly which is very essential to complete a project. Finally, when, PRINCE2 provides ability to individuals they can better understand and see how they will make a decision? And they know what is their responsibility, especially database builders, after that they can easily go to get the target and success during work with the project.

4. CONCLUSION

The aim of all projects is how they can deliver things and how they can success their projects? Today IT is used as a tool to make a various changes, especially last five years, and there are lots of methods are under tested and under tried to be the best one in order to solve those issues happened with projects and manage them properly. Agile and PRINCE2 are two popular structure methodologies which made a very changes via IT technology and development organisations. There are lots of experts Ideas who supporting PRINCE2 rather than using Agile, That is why nowadays Database programmers can use the PRINCE2 methodology to solve their issues, because Database projects are more complex it needs a suitable methodology like PRINCE2. Thus, PRINCE2 is more suitable than Agile for IT in general and Databases in particular.

REFERENCES

[1] ZAMMUTO, F., et al , ""Information technology and the changing fabric of organisation.",," Organisation Science, vol. 18, no. 5, pp. 749-772., (2007) .

[2] J. MARCHEWKA, , Information technology project management., Chicago: John Wiley and Sons, 2006.

[3] MAARLEVELD, S and GILBERT, S. , "Adapting PRINCE to a multi vendor outsourcing context"., 2012.

[4] D. HINDE, PRINCE2 study guide, Chichester: Wiley, 2012.

[5] SHUODO Xu and DISHI Xu , " "Co-operation between user and develops in IT project management"," IEEE, pp. p,147, (2011).

[6] LI, J, MOSELHI, O and ALKASS, S. (), ""Internet-based database mnagemnt system for project control"," Engineering, onstruction and Architectural management,, vol. 13, no. 3, pp. 242-253., 2006.

[7] ABBAS, N, ANDREW, M and GARY B. , " "Using fctor nalysis to generate clusters of agile practices (a

International Journal of Computer Engineering and Information Technology (IJCEIT), Volume 10, Issue 9, September 2018
D. R. Hamad et. al

179

guide for agile process improvement).",” in Agile conference(Agile), 2010.

[8] ALI, S and AHMED, P. , “.“Briefly introduced and comparatively analysed: Agile SD, component-based SE, aspect-oriented SD and Mashups.”,” Information Technology(ITSim), IEEE, vol. 2, 2010.

[9] MISHRA, A, and DUBEY, D. , ““Cynical View on Agile Software Developmnet from the perspective of anew Sma"," ll-Scale software Industry., vol. 2, no. 12, 2013.

[10] S. BAKER, , Brilliant PRINCE2: what you really need to know t make your project a success,, Harlow: person, 2013.

[11] TANOVIC, A. and ORUCEVIC, F., “Integration of PRINCE2 model into ITIL V3 model,” IEEE, p. 102, 2011.

[12] J. REED, “Project management with PRINCE2 best practice handbook”, London: office f Government commerce, 2009.

[13] TAYEBI, S, OSTADZADEH, S.S and MAZAHERI, S , ““Employment MDA in PRINCE2 Framework”,” IEEE, p. 22, 2009.

[14] A. MURRAY, “WHITE-PAPER: PRINCE2 AND GOVERNANCE”, 2010.

[15] JING-WE, C and XIAN, Z, “ “PRINCE2 based project management maturity model”,” IEEE, p. 1, 2010.

[16] WANDI, K and RIAAN, R, “ “Strategic Alignment of Application software Package and Business processes using PRINCE2.”,” International business & Economic Research Journal, 2013.