

Software Engineering in Freelancing

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Abstract—As we know, In present era developers and clients are preferring to work from different offices or workplace located in different cities or may be in different countries. A person sitting in a small town of any country may be working on a project provided by client from any other country. In this case, the software engineering process used is very much different than the one used in MNCs. Communication and document sharing. So one of the possible software engineering processes that might be used is discussed in this paper with a relevant example and diagrams.

Index Terms—Paper, Software Engineering, Freelancing.

I. INTRODUCTION

The idea of freelancing may be strange for business personal in the year 1990 or 2000 but in today's entrepreneurial world it's very common. The freelancing industry has shown growth of 500% from the year 2000 to 2014 according to the report of Paychex, an online HR service. As we all know in the software industry there is some standard procedure followed during the software development life cycle and they are base on the working of the company, whether developing team are at the same place at company office or at different places across the globe. Now, consider a case where a group of developers all at different places probably working from their home take a project form any client located at his place, how will the manage the project development life cycle? There may be many possible ways, some of them are discussed over here along with it's advantages and disadvantages.

II. PROBLEM STATEMENT

How will the process of project development be done considering difficulties like geographic diversity, communication barriers, software engineering documentation?

III. COMPARISON BETWEEN SOFTWARE ENGINEERING IN FREELANCING AND NORMAL COMPANIES

A. Software Engineering in normal companies

We can take into consideration the software engineering process used in normal software developer companies. Where the process of software engineering starts with the software requirement specification. This can be fully specified or may be only an overview. According to the situation of budget, time, team, expertise available, resources available and other factors, a software development model is selected. After this, the process of requirement analysis, designing, development

and testing along with the other process needed according to the development model selected are carried.

Figure below shows one of the process model used in the software development process, Spiral Model. It shows different phase of process involved in the development.

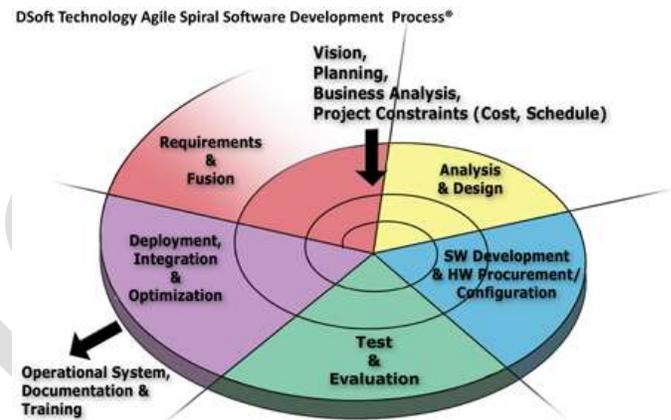


Fig. 1. Spiral model for software engineering

As the paper is about software engineering in freelancing, it will not be appropriate to discuss each and every steps involved in the software development model shown in above diagram. So only overview of the software engineering process is given in the previous paragraph and now we will discuss the software engineering process in freelancing.

B. Software Engineering in Freelancing

Now taking into consideration the process of freelancing, let's see how software engineering is done. First of all the clients give a brief description of what they want from the service providers on the common platforms available today. The developer or service provider take into consideration their ability, time, budget and resources into account and bid for the project they wanted to do. After that, the client sees all the companies or individual who are willing to do the project and select any one on their own comfort. Once the confirmation is done usually a formal conversation via preferred medium is done. The client can then provide exact requirement document if he/she have with him/her. Otherwise, meetings on platforms available like Skype are conducted to specify the need of the client.

Once the developer team has all the requirement they analyzed the requirement and convey the changes needed or suggest improvements possible to the client. As in freelancing the process used is completely transparent, it is very easy to

convey any information to the client at any time. Most of the time client and service provider are in touch so that any misunderstanding can be minimized or avoided. After following these steps, according to an agreement made, a prototype or deliverable is presented to the client after given time for development. The client can confirm it or may suggest the changes as he/she want in the product. After the client is satisfied with the development the further development can be started. The same process is carried again and again until the final product is completed.

Most of the time the testing phase is divide and included in the development, as the service provider first check the product then present to the client. At last, less time is allocated to testing or no time at all depends on the product. As the product is delivered and the client is satisfied, the client can release the payment. The service provider or the developer get the payment and the process is completed in most of the cases. If maintainability phase is included in the agreement then the team can work on then. Otherwise, the process is completed and they can further work with each other if they want.

IV. FLOW DIAGRAM

This was a general idea. Now, let’s take step by step taking into consideration very well known freelancing website, Freelancer.

Diagram below shows the different steps involved in the software development process

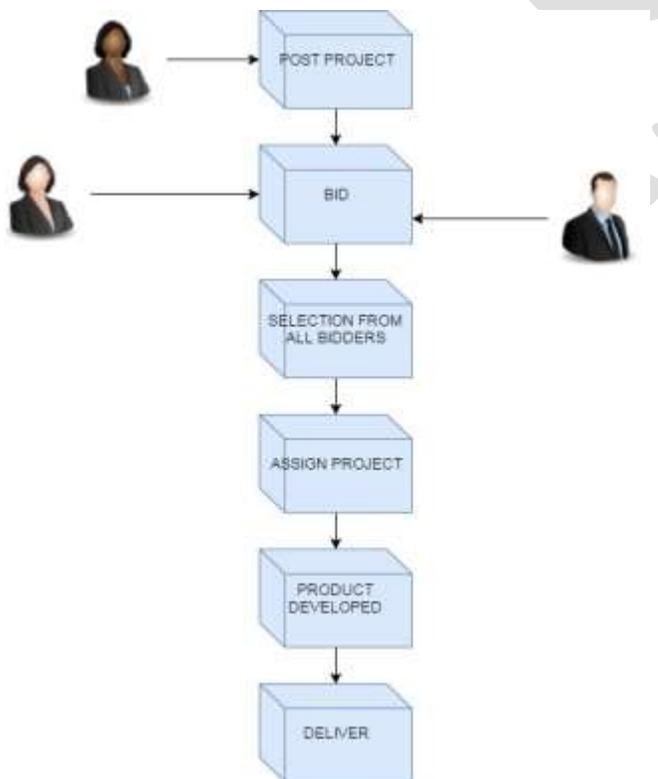


Fig. 2. Process diagram for Freelancing

let’s have a close look at each steps:

A. Posting a project

At the initial stage, the client will log in to the middle party here freelancer website and post a project with some description. The client can also specify the conditions that should be fulfilled be the developer or the product. The client is done with his/her work, now he/she must wait until someone bid on the project.

B. Bidding on the project

As the project is posted on the site, all the developer can view the project. Then they can bid on the project according to the time and resources required to complete the project and also the difficulty level of the project. It is the important part for the developer to get the project with the profit. So they should bid wisely.

C. Selection of the project

After the bidding period is over the client will review all the bids on the project to choose one. He may not only look at the lowest bid but also view the profile of the developer, their previous work, references and rating also. After taking all the factors into consideration the client can choose the one reliable developer to work on his/her project.

D. Assigning the project

After the client choose the developer they can communicate all the requirement in detail, they can choose how the payment will be done. What are the deliverable in the project, how much time a week will be given to the project and other specifications. SRS document or other requirement specification documents are to be shared while assigning the project. How will the client involved in the process and mode of communication or interaction is also decided while assigning the project.

E. Development the product

Once the requirements are specified the developer can start working on the project. He/she can communicate the progress with the client on regular basis as decided in the previous step. These decisions can change over the period of time as they are the mutual agreement between the client and product developer. At every deliverable the client can suggest some changes. After that changes, if the client is satisfied they can move on the next deliverable or the end of the project once it is done.

F. Delivering the product

After the complete development of the product the developer can handover the product to the client and the client can releases the payment which is hold by the third party, which is Freelancer website. After this end of the process the client can review the work of the developer on his/her profile and work further if the client wants.

V. COMPARISON

After discussing about the conventional software engineering process and software engineering process involved in freelancing, now we will discuss about the differences and similarities between them.

- First of all the selection process of the developer is totally different in both the cases. In general software engineering process the well known companies deal with each other to complete the project they want. While in freelancing neither the client nor the developer know each other. They both are working independently at their respective places.
- Then determining the budget of the project is also different. Most of the time the budget of the big companies for the product are not known. It is decided by the higher management. While in freelancing all the bidding are public. And it is fix before the project development starts.
- Documentation of the big projects at MNC's may be very formal and detailed. But, in freelancing there is very less documentation as the projects are generally small and due to regular communication between the client and the developer, it is not needed. Some of the documents like SRS and some diagrams may be also the part of software development in freelancing world.
- Development process may or may not be same in both the cases, as there may be chance that the freelance is working alone. So there is no need to select the team and managing the team. Due to these the scope of the project in freelancing may be limited. As the resources available a freelance is limited.
- The payments in freelancing are assured by the third party, which holds the payment until the product is delivered. This is not the case with the big companies as there are no role of third party in the agreement.

As we can see there are many differences and similarities in the process of software development in big companies and in the freelancing. Each of them may have their own advantages and disadvantages which are out of the scope of this paper so it is not presented here.

VI. CONCLUSION

As we can see from the comparison there are some differences and some similarities between the conventional software engineering and software engineering involved in freelancing. One should know the proper procedure before entering into the freelancing for safe and ease to work with world-wide clients. One can grow rapidly by these kind of connection all over the world. In this freelance work nothing is limited in side the four walls of the company, the whole world is a platform for all the freelance

VII. FUTURE SCOPE

These software engineering process involved can be improve in the term of risk management, time for development and reliability of the project. Some more parameters can be included to judge the credibility of the client as well as the developer.

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