Atech Computers

Project Closeout Report

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# Project management

**1.1 Personnel**

The first trouble of the team came when trying to form a group. It happened to the team leader that project students available for this trimester was quite limited. Only one local student from BIT was to do the project, and 90% of international students were Indians who knew each other and grouped themselves well. There was once a time that he decided to do the project himself.

Weltec project encourages practice of project management and team working. A group of only one person is not recommended by the coordinator. The team leader posted on the forum to recruit more members but no one answered and he was still alone after the academic commencement. However, right after he finished the proposal and was ready to proceed to the next phase, an unexpected new member was introduced to the team. The two members with different skill sets and project background recognitions started their work. Cooperation between such two guys was really a challenge to them. How they would eliminate the misunderstanding and perform with the highest proficiency determined the the success of the project. We knew exactly it was what the coordinator was looking forward to. He intentionally made us into such situations and saw us find a way out.

**1.1.1 Background**

We come from different countries, have grown up under different cultures and believe in different life philosophies. But we do not think that kind of difference of views of world has ever affected our cooperation negatively. Instead, we have different expectations of what to gain from the project. The team leader worked for IT companies for a couple of years, and he know how IT projects are running, the pressure from outside, the methodology, and things like that. He and the adviser are both hoping him to get a quite high mark from the course. But the other member owns a different concept of IT projects. At the beginning, he was mentally against what were planned for management, like meetings, agendas, documents. It made him reluctant to finish the work assigned to him.

**1.1.2 Skill Set**

Actually both of us lack the skills exactly suitable for this project. The team leader was once an Android developer, with only no more than half years’ Java Struts experience. The other is even a networking student rather than a programmer. None of us had the skill to build a web server from the beginning. We know that a lot of techniques are involved on the way to a successful web server and it requires years of experience to achieve that. But the fact is we have to complete such kind of a system within three months, let alone more than one month’s research time.

There was no way out but to get the ball rolling at the moment. Originally, the leader already had some idea from the client and spent about two months before the trimester started researching the possibility to utilize Angular plus Strongloop as the project framework. Although we did not use that combination later in the project, it helped him a lot get familiar in advance with the JavaScript language and the best practice in industry. It guided him step by step to the ReactionCommerce platform which was employed as the starting point of the project.

During the research period, we came across many fresh new concepts, like Meteor, MongoDB, ECMAScript 2016, Node.js, AWS, and Docker, which are quite important and popular in JS-based application development field. We are still in studying stage of those concepts but we feel optimistic to continue similar projects in the future.

**1.1.3 Working Time**

We are supposed to spend 435 hours for this project before the academic deadline, and according to our progress report, we will certainly achieve that goal.

But still we had problem. Vineet has two jobs, and his hours available for this project are quite different from normal students. The team working time is only possible from 2pm to 5pm on weekdays. Considering this, we set up this time mandatory for working together. It turns out that this decision is pretty wise and we gained much benefit from it, although it was not kept strictly. We have heard from other teams that their members met with each other only in team meetings twice a week. It was hard for them to proceed smoothly and they often got stuck because someone suddenly disappeared for a short time exactly when some information had to be synchronized. In this aspect, we are proud of ourselves to have continuous face-to-face communication.

**1.2 Planning**

**1.2.1 Scope Control**

Scope control is planning, performing, and managing how, what to be done during the project time. As building a website from the beginning is quite a large amount of work, and expectations from the client was too general and ambitious, it was easy at at time to get requirements out of control. We knew our restriction of skills, and we were aware that if we were to succeed, we must think up ideas to get it over.

Generally, two solutions were in front of us. First, convincing the client to lower his expectations and listing his requirements in priorities. Only the one with the highest priority was put into plan first, and let the project evolve along with more functionalities added. Even if the academic deadline comes, the project can still go on until it is mature enough to go live. Second, picking up a current online shopping open source project and customizing it. It seems like a much quicker path to a runnable project but it apparently needs more research and rework. The client was unwilling to accept this plan because he had the opinion that those open source solutions were not fully-customized and may be unsafe for an e-commerce.

Finally we adopted them both. While we chose ReactionCommerce as the base platform, the development began by adding functionalities that the client thought were the most identifying ones from other current websites. On top of the list, he mentioned, was importing supplier csv product lists and updating product information each time the suppliers update their database. There were many small technical difficulties on the way, so our plan was to conquer them all and achieve this goal.

The last two phases were designed to be adaptive phases which was proved later to be very useful. In those phases it was flexible enough to add more functionalities or do anything else necessary. Also, they can be considered as buffer time to manage the risk when failing to finish the plan on time. It was our secret of surviving the torture of project.

**1.2.2 Methodology**

Methodology is the philosophy of proceeding and getting the most out of the project. Several models were taught in the textbooks, but when it comes to a certain type of project, it is possible that only one of them is the most suitable.

Waterfall model is pretty old, in which all the processes are arranged in a linear manner. The nodes of the chain run one after one precisely, any change is not allowed to break the original design.

For most general purpose projects, like web applications and mobile applications, waterfall model does not apply well. Because changes often occur during the development period, and schedules are adjusted in a timely manner to accommodate those changes. Furthermore, requirements of such projects are usually not certain at the beginning, but waterfall model demands that all the designs are fixed in the entire software development life cycle.

Therefore, our best choice is the one among the life cycle models that provide flexible processes. Options are incremental and adaptive models, as well as the agile method. Many practices are involved under the agile topic, such as daily stand-up meetings and pair-programming. We cannot carry out those practices in the case that we do not stay with each other all day and we only have one programmer.

From the scope control section above, it is clear that we arrange the requirements into fixed and adaptive phases. The workable website is released version by version as defined by the incremental model. At the end of this stage, importing supplier product list should be available. For the rest of the time, we can plan any work if needed.

This design of methodology helps us a lot. As will be described later, we missed our incremental due day. The buffer time is useful for us to finish technical work. And we leave the last phase for writing reports. The methodology is the most important factor that led us to succeed.

**1.2.3 Time Management**

1.2.3.1 Project Schedule Model

We use Microsoft Project 2013 to create the schedule model. It is a good tool to manage tasks, milestones and particularly it demonstrates the planned evolving processes of the project.

But according to our experience from the project, except for the person who produces this plan, no one else actually cares about what is in it. They even never opened this file once, and of course they never update their progress into the plan, although they have been told many times. It makes statistics of man power performance very hard to be precise.

The reason may be that we have written the tasks of each member in weekly progress report. However, the project manager is definitely happy to see that his team know what is going on and get the idea of the whole picture rather than just doing what they are told to do for this week.

* + - 1. Scheduling Methodology

Scheduling methodology is confirmed based on our SDLC (Software Development Life Cycle) model. As mentioned in 1.2.2, we adopt the mix of incremental model (for fixed requirements) and adaptive model (for flexible planning). Therefore, our scheduling strategy borrows the ideas from conventions of versions or cycles. We split the project into six phases (iterations in agile method): four weeks for research, and two weeks each for the rest. This practice is learned from pervious project experience in China when the agile concept became popular and internet companies were competing with each other to put it into practice. The purpose of this strategy is to release products and get feedback quickly enough to respond the ever changing world. But it is only the beginning of the project, so the “release” is not that obviously important. The main idea of doing so is to split a big project into small periods with manageable goals. It is a good way to relieve people from feeling at a loss when starting a big project with ambitious goals.

What to achieve in one development phase is only made clear right before the phase starts. At that time, the performance of last few phases is evaluated, and the reasonable amount of work is assigned to each member. Thus, the tasks are more possible to be completed, and it will not put too much pressure on the team.

* + - 1. Levels of Accuracy and Units of Measurement

As the course regulates, the project participating measurement is hours: for each student, 30+ hours a week on average should be given to this project.

As a risk control strategy, we give everyone buffer time at least one day a week. It will be discussed in the risk handling section. Our evaluation of a good scheduling is allowing a member to complete his work easily but still have sufficient time to correct mistakes or just do something else for fun.

However, the fact is that the developer always has heavy burden and spends more hours to complete his work. In the meantime, he has to wait for a long time for the design to proceed. The designer always put off his work, and finally the developer has to design himself. Administration documents are not often completed and submitted on time with high quality, and the other guy has to take this responsibility later on. All the delays have given the leader very negative feelings of his managing ability.

This situation continues all the project time, which makes the planning much harder especially when the academic deadline is coming. The only way to get everything back to normal is the other guy’s much harder working. To conclude, the accuracy of our planning is pretty low.

**1.2.4 Responsibility Assignment**

Design

Executing

Manpower performance

Risk handling

Communication

Meetings

Information sharing

Monitoring and controlling

Progress monitoring

Quality control

Change control

Audit

Technical topics

General recommendations for future projects