Project Change Management Tool

By

Mohd Ridzuan Mat Zin

Dissertation submitted in partial fulfillment of
the requirements for the
Bachelor of Technology (Hons)
(Business Information System)

JUNE 2006

Universiti Teknologi PETRONAS
Bandar Seri Iskandar
31750 Tronoh
Perak Darul Ridzuan

CERTIFICATION OF APPROVAL

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Approved by,

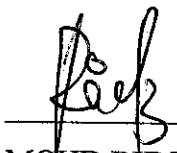
_____

PUAN ALIZA SARLAN

UNIVERSITI TEKNOLOGI PETRONAS
TRONOH, PERAK
JUNE 2006

CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in the project, that the originality work is my own expect as specified in the references and acknowledgements and that the original work contain herein have not been undertaken or done by unspecified sources or persons.



MOHD RIDZUAN MAT ZIN

ABSTRACT

IT project management especially change management is one of the most important element in project management. Project change management is concerning one of the main elements in project management, which is scope. Project change management needs proper documentation due to the nature of the changes which normally take place after business requirement being formulated. Since it is outside the business requirement, change in scope involving financial issues in term of billing for the changes.

This project is build aim to tackle change management in IT Project. Change management is one area whereby decide the outcome of a system. This system will enable project manager to handle change management from registering change request until registering or modifying functionality of system. This project also tackles time and cost management of a project. This project built in web-based application using ASP and Microsoft Access 2003.

Methodology used in developing this project is waterfall methodology. Everything done by flows and revision for every stage needed to ensure the goal of every phase achieved. This project also use reference of other project change management which available in market.

Taking advantage of nature of web-based application, this project have quite mobility and accessible as long as there are internet connection available. This make this project reliable in handling project change management process and may give some idea on how Malaysian based project management culture should be absorb into this project in future.

ACKNOWLEDGEMENT

Alhamdulillah, I have finally finished my dissertation for final year project. To be honest, the process to get the project done was tough and difficult, but at the same time, it was also fun and interesting. There was at a time I felt like giving up this project, but I received a lot of motivations from people around me to continue it. Thus therefore I would like to take an opportunity here to give appreciations them for all the supports that have been given to me.

First of all, I would like to thank my supervisor, Puan Aliza Sarlan for supervising me and for all the time she spent to facilitate me. Without her, I don't think that the project will be successful as it is. I also would like to dedicate this acknowledgement to all FYP coordinators and UTP lecturers for their cooperation and advices. Not to forget all the knowledge that has been given to me until I can come up with such a great project for my FYP.

To my friends, that always encouraging and believing in me and mentioning that I can carry out this tough and difficult idea to the completion, thank you and I will always remember you guys.

To my family who always been there when I need them the most, I could never repay all of you. All the support is very precious to me and at my downtime, it's really good to have all of you around.

Once again, thank you.

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CHAPTER 1

INTRODUCTION

1.1 Background of study

Project change management is concerning one of the main elements in project management which is scope. Project change management needs proper documentation due to the nature of the changes which normally take place after business requirement being formulated. Since it's outside the business requirement, change in scope involving financial issues in term of billing for the changes.

Project changes can be as small as naming convention or label changes in system and can be as big as major changes to the subsystem of the overall system. Changes need proper documentation so that billing process much easier because it's not only dealing with financial but also involved law of contract [8]. Considering that the changes may come from various stakeholders, a standard procedure to control the changes also needed. Changes which may take for granted by project manager give the biggest impact to project flow since changes to project will delay the project timeline and the project cannot be completed in given time.

Project team especially project manager really need a efficient tool to manage project and many project management software like Microsoft Project is one of famous tool in managing project. In project management, an efficient tool is needed so that the project will be managed efficiently and not wasting any resources.

1.2 Problem Statement

Information technology project management had been a problem since computer start entering the market. IT project management need really tight coordination and discipline from team project and stakeholders of the project. In most part of project, handling changes is the biggest problem since changes not only involved the scope, but also time and cost of project. Beside scope, time is the most crucial element that hardly can be adjusted compare to others 2 factors.

In project change management, the element that most important is documentation of the changes. Changes take place which involved high billing status need to be documented properly because it's involved lots of money. Consider these findings from the Standish Group: More than 70 percent of enterprise resource planning (ERP) implementations fails to achieve their corporate goals. Poor project management is at the root of these failures. From the statistic, we know that good project management is needed in managing large scale IT project.

Change management as being mentioned before really needed proper documentation and with that, there should be a system that effective enough that managed to capture all the changes and documented it. Not only can document it for future reference but helping the project manager in billing process. Changes take place in a system is not freely on the project manager to decide alone especially major changes. Major changes like re-develop a subsystem or changing in database architecture need serious revision and the decision in billing and approval of the changes must be bring to higher authority in the hierarchy of project structure. Customization according to procedure is needed according to how big the project take place and how much power allocated to the project manager to make the right decision. Procedure that had been formulated must be a very helpful procedure that will help not only existing project manager but mostly new project manager. New project manager needs not only a good procedure but also lesson from experienced project manager so that by having a system that can fulfill the function of guiding the new project manager is must be a value added to a new system.

Currently, project management software like Microsoft Project has limited capability to track documentation of project since is only concentrating of resources planning and time planning. Microsoft Project in basic concentrating in timeline of project and integrated with the human resources in planning a project. Others documentation like procedure, project document like change control paper, resources allocation paper, cost planning paper is seem lacking in Microsoft Project.

Microsoft Project is project management tools that cannot capture project change management which is the only element that can make project take longer time than planned time and cannot integrated between members of the team project. Project management needs not only sufficient skills that enable the project finished on time, but also coordination among members of team project. Project management not only on the technical part but also human relation which need information flow and understanding about the objective will be always on track among the team members. The coordination aspect associated with documentation of project and in good project management software, this aspect should be in serious attention. Most of the time, project failed because of this element; coordination and communication even though the team members have impressive skills in technical area.

1.3 Objective

1) **Study and analyze the project change management process for IT project**

   The objective of this project is to study and analyze the project change management process in IT project. IT project really dependent on its user and most of the time, changes are unavoidable either major changes or minor changes. In order to cope with changes, some predefined procedure and process must exist and to understand the process and implement it takes lots of time and effort.

2) **Develop a tool to assist in project change management**

   After understanding the process, it's crucial to design a tool that will help the project manager to manage the change in their project. Tool to manage the changes must be help project manager to manage their project very well and the documentation process is much easier.

1.4 Scope of Study

1) **Study all the process related to project change management**

   The scope of this project is to study all the process related to project change management. In order to develop a tool for project change management, all the process must be understand first before the system can be formulated according to standard practice of project management.

2) **Identify resources use in project change management**

   Resources in project should be manipulated at full capabilities either human resources, hardware resources or any other resources. In order to gain control over the change management process, all the resources must be under control. This project aimed in identifies and understand the functionality all the resources use in project change management.

3) Develop a web-based tool for project change management

This project will be on integrating communication between stakeholders of the project, change management procedure, project change documentation, and if possible, billing process due to changes in project. The project will build on web-based application due to the web-based capability to integrate the elements mentioned than standalone application. The web-based application also enables project team members to keep updated with the project progress even he/she not available at site of the project.

CHAPTER 2

LITERATURE REVIEW & THEORY

2.1 Communication & Coordination in IT Project Management

Survival and success isn't the same thing, however. IT managers must start thinking about the long-term health of their careers and their companies. Yes, time, staff and money are all ongoing constraints, and will likely continue to be challenges in the near future. One thing we're hearing, though, is that these challenges aren't necessarily the root cause for project failures [1].

Reading through this issue, you'll see that attitude is a major problem. Technology planners need to change their tune, and quick. Be it apathy or outright hostility towards users and other departments, an aversion to make decisions, blind acceptance of new technology over business needs or just plain fear of new ideas, it's time to change your head. As guest columnist Syed Jaffar puts it on page 22, "We need to consider everyone's stake in the work we do." This means understanding that project success involves talking with people who will use the technology and matching project goals with those of the organization. For him, immaturity is not an issue [1].

Communication being a big problem in determining the survival of the IT project since the balanced between communication between end-user and project team members are very crucial to guarantee survival of a project.

Consider our profile of Bill Bishop on page 11. The Toronto consultant spends a lot of time trying to convince marketing and IT departments to work together. While both sides have work to do, Bishop has some enlightening thoughts for technologists. He warns about the evils of technophobia, a term he defines as the blind adoption of every new technology that comes along [1].

Mark Yamada accepts this view. "These (IT) people have come out of a command-and-control environment," says the managing director of Toronto-based Guardian Capital Advisors Inc. "Most IT directors try to control information because they think it's their job." IT managers do need to be more open. This doesn't mean letting users install or download whatever they want, but rather entails giving out more details and allowing for more input about how projects will take shape [1].

One way to improve IT's disposition is to build improvements into the project process itself. As Scott Ambler writes on page 23, a "mature and proven" software strategy involves communication at all stages throughout the project, with clear goals as to what gets developed and who gets to use it. It also takes a look at the bigger picture. "Effective software processes reflect the culture of your organization, the way that your people work together effectively and the values that they share." [1].

In other publication, there are some key factors to be success in IT project being outlined. One of them is concerning on communication between team members.

Develop a communication program to promote organization wide acceptance of the program. Managing organization change is a critical element of any program. Ongoing communication among project participants, stakeholders, and end-users should be promoted throughout the institution using multiple channels, including newsletters; e-mails, department meetings, and user focus groups. Early, clear, and consistent communication with stakeholders is critical to managing end-user expectations. Care should be taken to ensure all communications are audience-appropriate [2].

2.2 Change Management and Documentation

Establish and manage a formal change-control mechanism. Effective project management depends on diligent management of inevitable changes. All changes should be documented and incorporated into the project plan so everyone knows when and why the change was made. Such documentation should include the date the change was made and its effect on the approved plan. Failure to document changes can lead to confusion and team members working at cross purposes. Changes beyond certain predetermined thresholds (eg, raising the cost above a designated amount, substantially delaying completion, or redefining deliverables) should require approval by the steering committee and be formalized in writing [2].

This paragraph show the importance of on change control procedure or change management in project should take into consideration.

The project manager should deal with such issues using formal, traceable processes, including escalation processes (ie, from within the project office, to the project sponsor, to the steering committee, to executive leadership, and finally, if necessary; to the CEO). In addition, all team members should be trained to recognize and monitor risks [2].

Even though this publication talks about risk management in project, the idea of formal and traceable process is crucial in project change management as part of project being handled.

In the beginning of a new project, many of these details can be unknown quantities, and it might seem impossible to define specifics. A project manager may encounter feedback such as: "We cannot limit the implementation of the new data warehouse just to these departments. We may need to deploy it to members of the accounting, sourcing and marketing departments." [3].

Although this statement might be accurate, the project manager should not add to the project's scope without documenting the additional needs. For example, if additional

user groups are to be included, the documentation about the project's scope should be amended with a statement such as the following: * "The project team will identify the users that require access to the new data warehouse." [3].

By accurately documenting the work that needs to be done, the project manager can provide senior management with a better understanding of the time frames and resources that will be required to complete the project. Prior to commissioning a major initiative, senior management should require the project team to complete a cost/benefit analysis. This analysis should outline high-level deliverables that will result from the project meeting its goals. The project team also should define metrics and benchmarks that can be used to measure the benefits of change and the progress and completion of each deliverable [3].

For example, if a new system is being deployed that reduces the time required to print, sort and attach hangtags, the current amount of time required to complete these activities must be accurately benchmarked. After the new system has been deployed, management can compare the new tagging time requirements against the historical benchmarks and quantify the amount of time saved [3].

The project manager's responsibility is to qualify the effect of the change and express these effects to senior management. By utilizing the three R's approach, project managers are able to set and manage the expectations of senior management and the organization, and manage the overall project toward success [3].

This publication gives a better view on handling project changes and how the change can involve the management. In this publication, the importance of documenting the changes and doing the cost/benefit analysis being mentioned as one of measurement to changes that going to be made in the project. This publication more focusing in internal IT project implementation.

Scope creep--unplanned additions to what the project is expected to deliver--is a classic headache for project managers. Summy says the first step in dealing with scope creep is to define project objectives in clear business terms at the outset. But some changes are inevitable, and the key to keeping them from derailing the project is to recognize that they are changes and understand their impact. "Many projects fail simply because

(project managers) don't even recognize that what they are being asked for is a change," Summy says [4].

It's very important for project manager to identify the changes asking by end-user and need to document the changes well. The importance of documentation not only to keep track the project but also when unplanned situation happen, there are some proof of changes especially the situation involved higher authority.

CHAPTER 3

METHODOLOGY/PROJECT WORK

In developing a system, one need a specific methodology in guiding the overall process flow. In developing this system, the waterfall development methodology is most suitable. This method is the most suitable because of the phases is move from sequences to another sequences and will not moving until the current phase finish. This methodology besides ultimately concerning on discipline, also more structured in term of process flow. This method also allows looping to the start for reviewing back the implementation of the system and it's helping in managing system development.

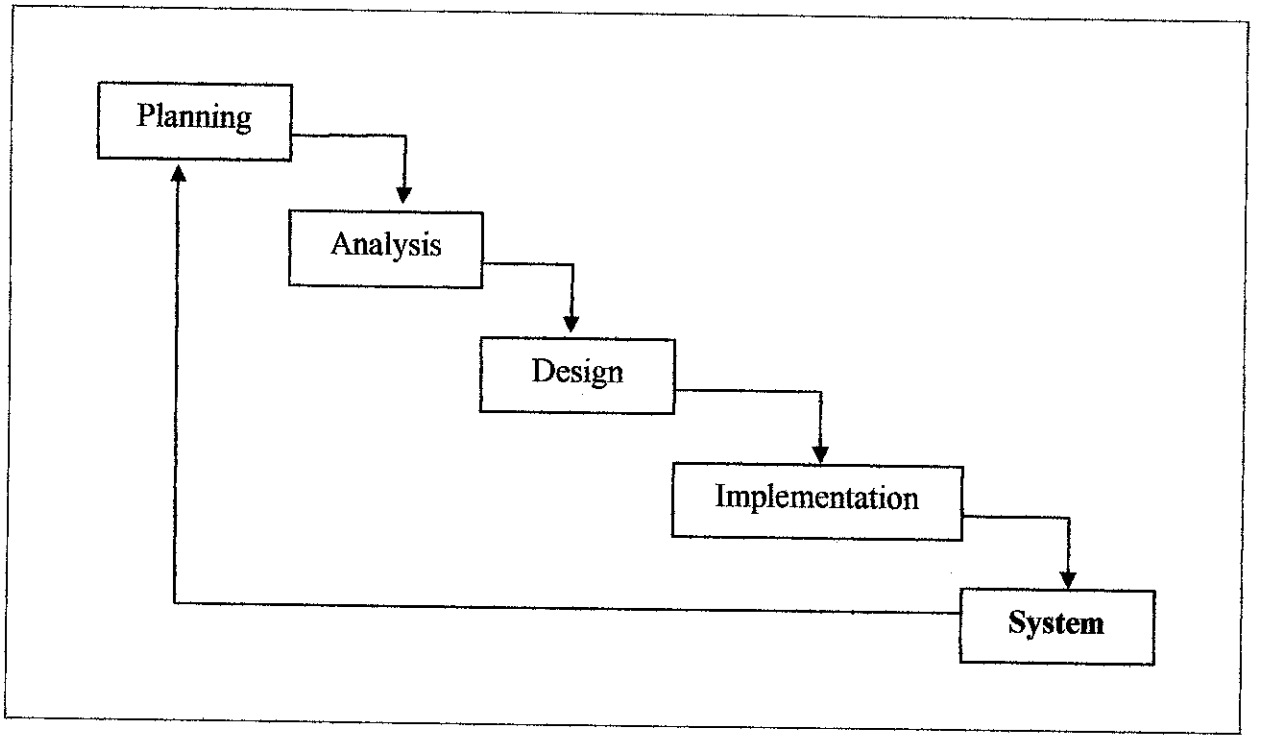

Figure 01: Waterfall Methodology

3.1 Planning

In this initial phase, all the activities according to the timeline must be planned. This phase will ensure all activities that will be done along the development of the system will be on time. Resources and constraint must also take into consideration so that ample time can be allocated to any unexpected incident along the development process. The outcome for this phase is Gantt chart of activities. The important thing in planning is to meet the due date with all or most of the requirement is in the system.

3.2 Analysis

In analysis phase, the entire requirements need to be collected from the resources and from the requirements, the analysis for building the system is the output. The analysis including defining the scope of system, boundary of system, input and output process, and type of hardware and tools that will be use to develop the system. This phase will define the scope of the system and limitation of the system. After identifying all the elements of the system, the design process should start. In this analysis phase, all the elements will be put together to make up framework of the system. The frameworks/modeling methods that will be used for this system are:

- Use-case diagram

  Use-case diagram will show what the system will provide to end-user. In basic, this diagram helps developer to identify functions that the system should have. Use-case diagram help not only developer but also end-user understanding the behavior of the system.

- Class diagram

  Class diagram is like entity relationship diagram in object oriented style. Class diagram will show the relationship between one table in database to another table in the same database. Besides showing the table, the entities of the table will be shown including the methods or functions that will be use by the table. In basic, this diagram helps developer to design the database structure and relate it to system design.

- Sequence diagram

  Sequence diagram show the sequences of functions that being developed in use-case diagram before in more details way. All the sub-function will be included and the details of the use-case will be showed in detail way in sequence diagram. The diagram will show the functions of the system move accordingly to table in database. This diagram helps developer to link the use-case diagram and class diagram in developing the system. The linkage between use-case diagram and class diagram being integrated in one diagram. It's a must the use-case diagram and class diagram being designed complete and perfect so that there are no confusion in developing sequence diagram.

3.3 Design

In this phase, the design of architecture and user interface happen. Architecture design process is process of designing the database, the platform or tool that will be use for the development of the system. In this process, the main important things is setting up the working architecture so that the system can be developed because without good setup architecture like database and server setting, the system may not working properly as expected. The knowledge in setting up the architecture is important and crucial especially when it's come to troubleshooting the server and database in my case.

Tools/equipment required:

- Macromedia Dreamweaver MX
- Windows 2000/2003
- Macromedia Fireworks
- IIS (for Windows XP) / ISM (Windows 2000/2003)
- CGI/VBScripts
- Visual Studio 6.0
- Internet browsers; e.g, Internet Explorer, Mozilla Firefox, Opera.

3.4 Implementation

The implementation is the phase where the system that already finished will be implemented either as pilot implementation or full implementation. Normally, the implementation will be done through pilot implementation whereby the installation will be done on one site or selected computer and the users will use the newly installed system. If everything goes well with the hardware and network setup, then the massive installation to other machine will be done. Implementation involved data migration, system installation and user training.

CHAPTER 4

RESULT & DISCUSSION

In this chapter, the framework derived from analysis that had been done in analysis phase will be discussed. There are 4 modeling that been used in constructing the framework which are:

1) Process Flowchart
2) Use-Case Diagram
3) Class Diagram
4) Sequence Diagram

4.1 Process Flow

In process flowchart, the flow of the system will be discussed including document involved if any. The process starts at "Start" node and end at "End" node. There are some shapes that define the whole process like Document, Decision, and Case. Document describing the manual document that may involved during the whole process of this system operated. The system of managing project is not only using computerized system but also manual system since the computerized have some restriction in giving the access to outsiders than its users due to some security and confidential issues.

4.1.1 Project Registration Process Flow

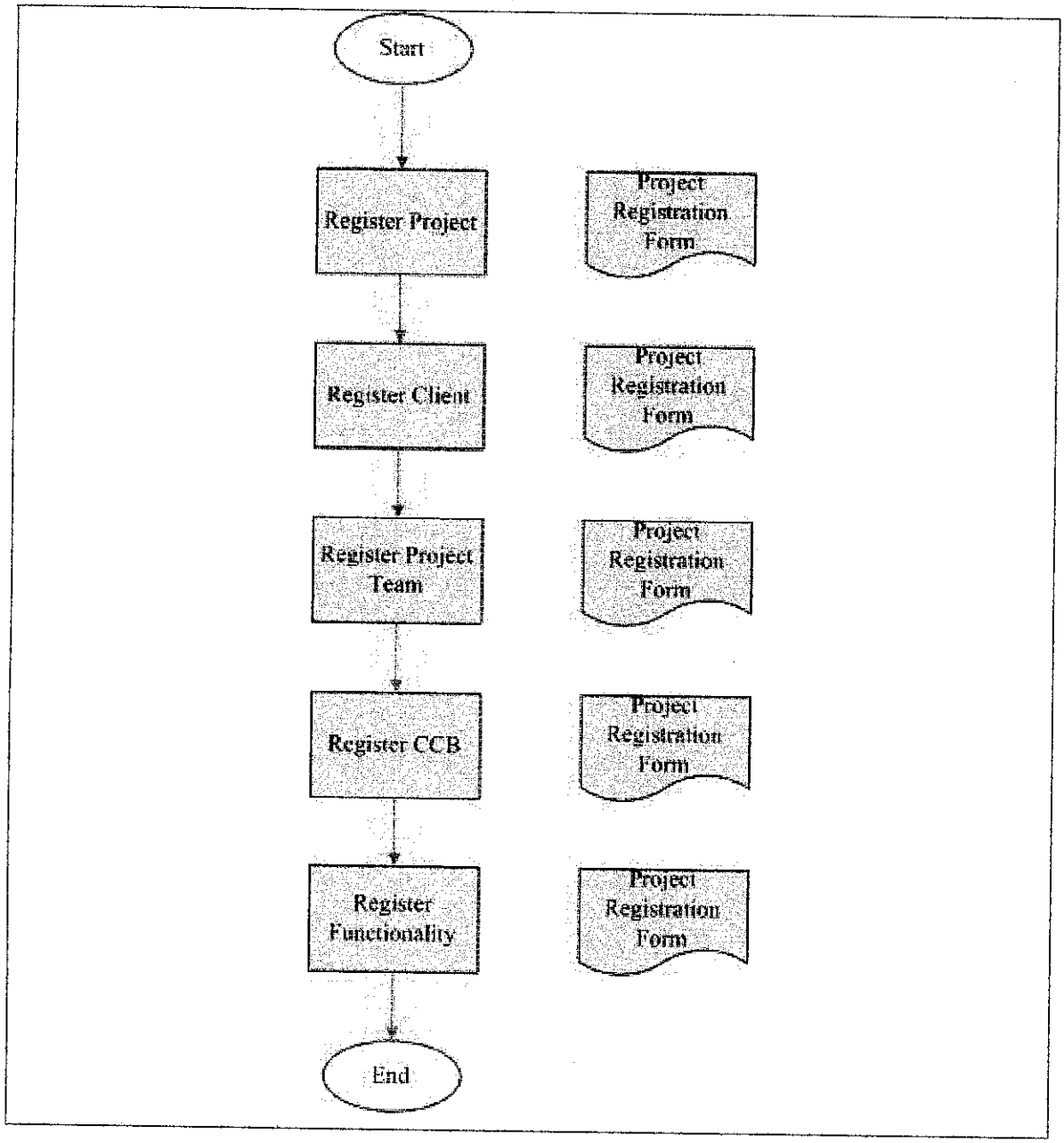

Figure 02: Project Registration Process Flow

1) **Register Project**

In this phase, Project Manager will register the project into the computerized system based on information on Project Registration Form. This form will list down all the details about the project in basic.

2) **Register Client**

In this phase, project manager will register the client into the computerized system based on information on Project Registration Form.

3) **Register Project Team**

In this phase, project manager will register the client into the computerized system based on information on Project Registration Form.

4) Register CCB

CCB or Control Change Board need to be registered by project manager because this is the council or body that will approve the change request.

5) Register Functionality

Functionality of a system is the focus in change request. This is the part whereby most of the changes circulated. By registering the functionality of the system, project manager know which functionality that user want to change.

4.1.2 Change Management Process Flow

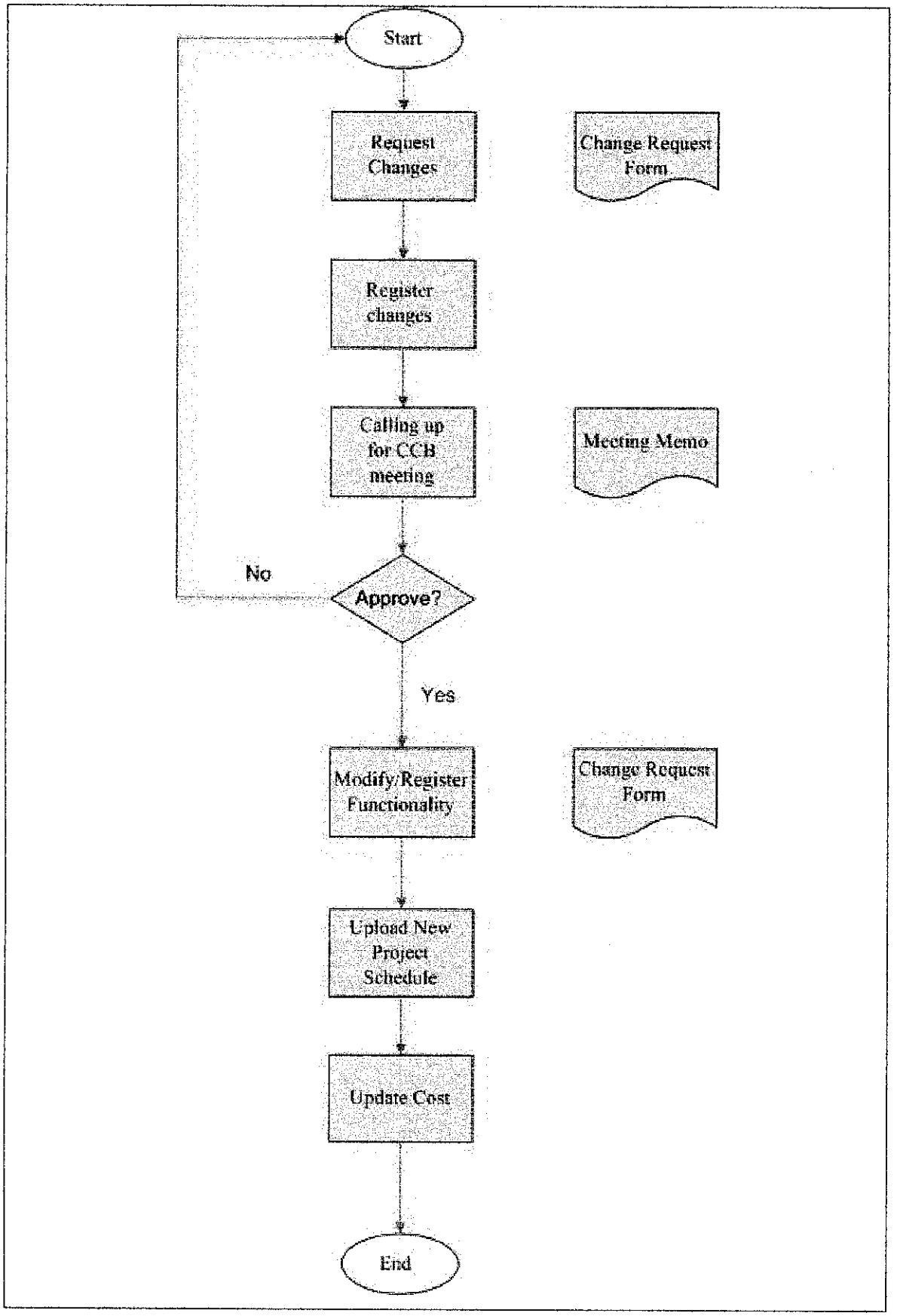

Figure 03: Change Management Process Flow

1) **Request Changes**

A request change is done by client of the project to project manager. This process will be done manually and client needs to fill up Change Request Form that will be containing information on the details of changes.

2) **Register Changes**

Project manager then register the changes to the computerized system. The Change Request Form's information will be use as input to this phase.

3) **Calling Up for CCB Meeting**

Project manager then issued Meeting Memo to call up for meeting. The meeting will be discussing on the approval of the changes. This meeting not necessarily for every change because project manager can bundle up few changes into one meeting. It's depending on the Change Board Committee or IT Steering Committee availability.

4) **Approval**

This is the decision process so there are 2 output from this stage which are: Yes (Approved) and No (Not Approved). This stage will decide the next stage either the project team can precede with the changes or not. If the output is Yes, the project manager will bring it to the next stage. Else, the Change Request Form will be returned back to client and the process start from Request Changes back.

5) **Modify/Register Functionality**

After getting the approval from the Change Control Board or IT Steering Committee, project manager will amend functionality either creating new functionality or modifying existing functionality based on change request.

6) **Upload New Project Schedule**

After the changes had been done to functionality, amendment to project schedule need to be done. After that, project manager need to upload the project schedule into the system.

7) **Update Cost**

Charges to the changes in the system involved billing. Project manager need to update the total cost/budget of the project using this system.

4.1.3 Modeling of the system

Modeling is tools that been used to construct the framework of the system. This framework contains three diagrams which are:

- Use-Case Diagram
- Class Diagram
- Sequence Diagram

4.2 Use-Case Diagram

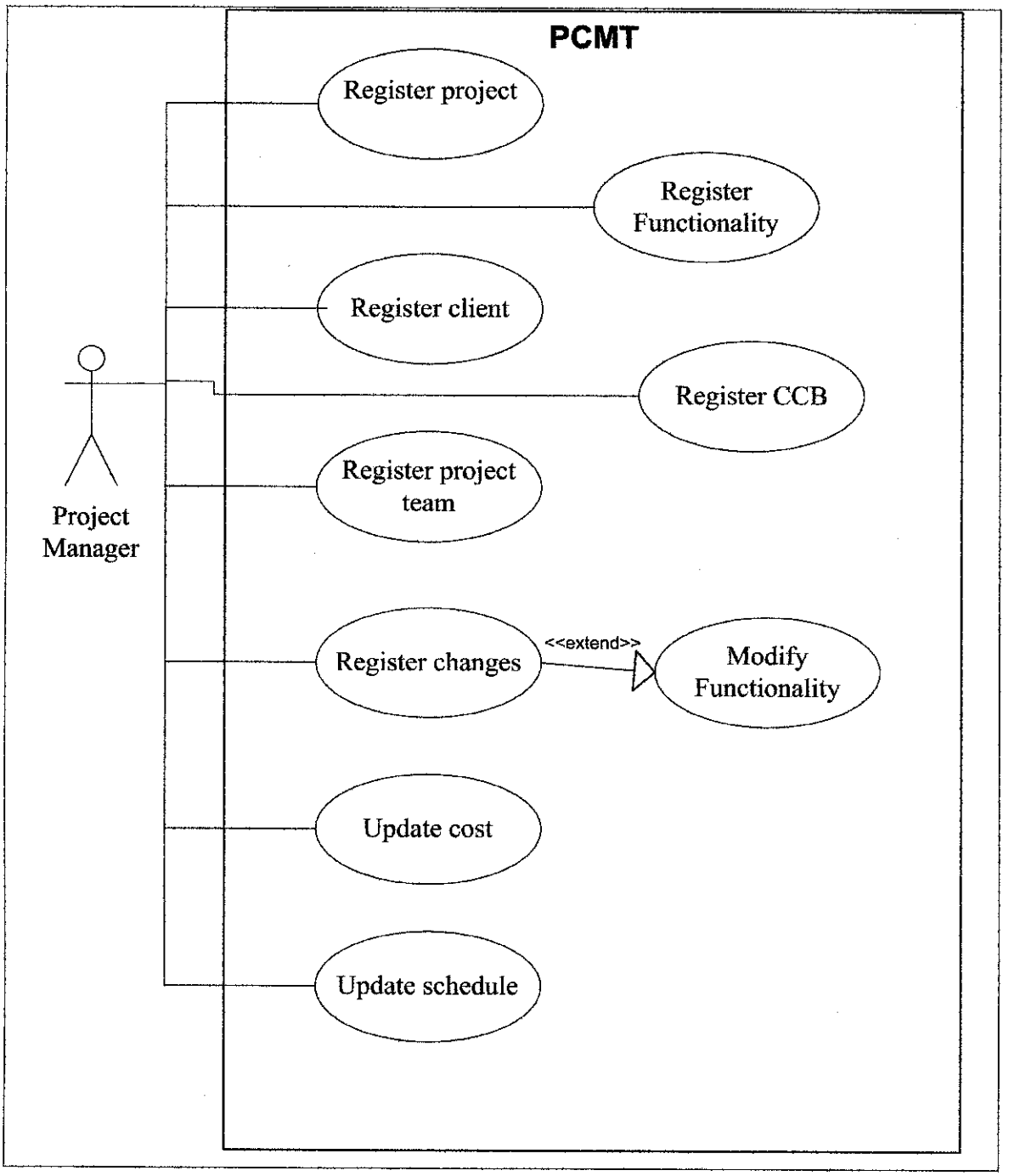

Figure 04: Use-Case Diagram

This diagram is use-case diagram for my system. This use-case have one actor which are:

- Project Manager

Client will not using this system to minimize confidential information flows to person who not have the authority to the information.

Project manager will handle most of the activities in the system due to the scope of work of a project manager; managing project. Project manager will have to do the following tasks in the system:

- Register project
- Register client
- Register project team
- Register CCB
- Register functionality
- Register changes
- Modify functionality
- Update cost
- Update schedule

4.3 Class Diagram

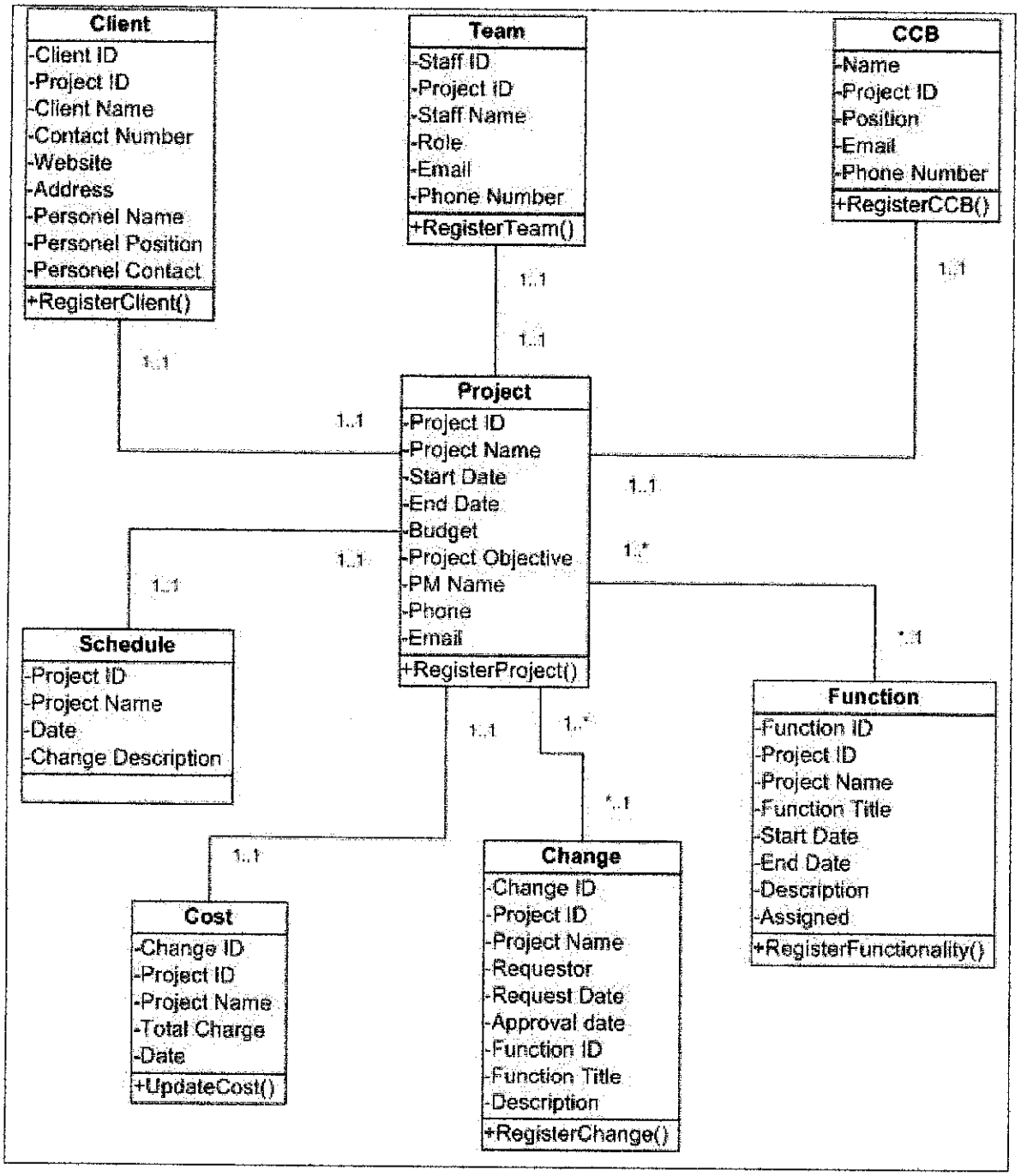

Figure 05: Class Diagram

Class diagram show the database design of my system which contains seven tables. The tables are:

1) **Project**
   - Register Project
2) **Client**
   - Register Client
3) **Team**
   - Register Team
4) **CCB**
   - Register CCB
5) **Schedule**
   - Schedule Uploader
6) **Change**
   - Register Change
7) **Function**
   - Register Functionality
8) **Cost**
   - Update Cost

4.4 Sequence Diagram

Sequence diagram is a diagram shows the objects that participate in a use case and the message pass between them over time. This system has 3 sequence diagrams which are:

- Registration project (client and project manager)
- Registration changes (client and project manager)
- Amend changes and scope (project manager and project team)

4.4.1 Registration Project Sequence Diagram

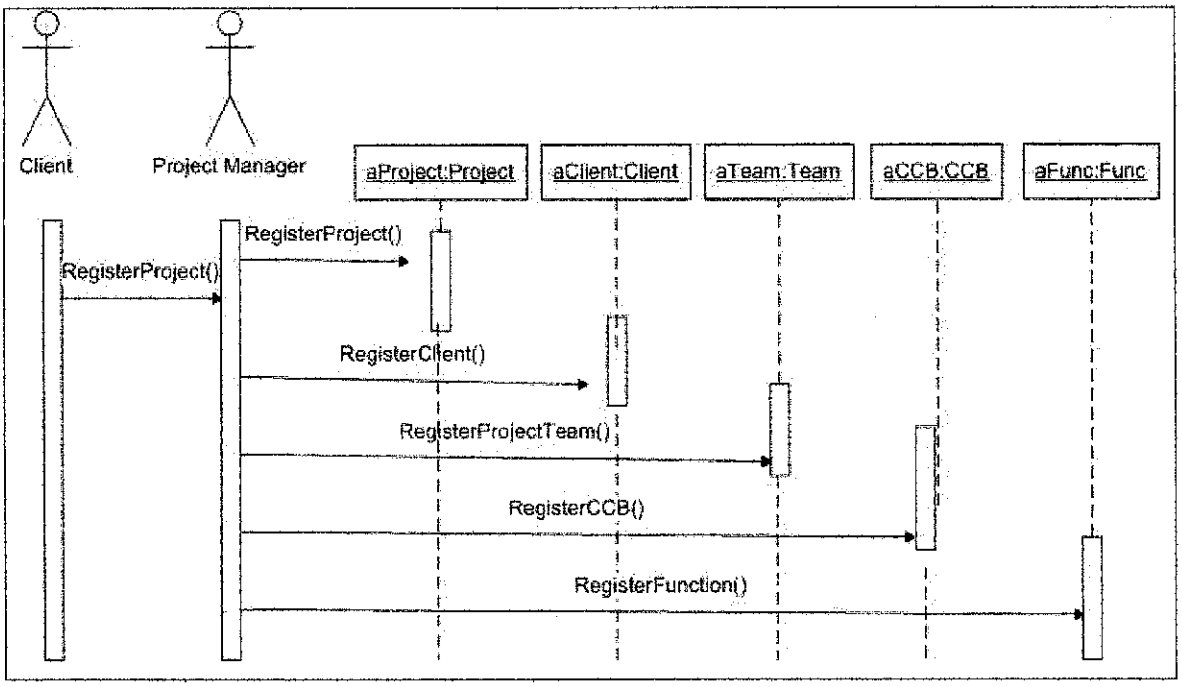

Figure 06: Registration Project Sequence Diagram

This diagram shows the action of client and project manager. Client registers the project on project registration form and forwards it to project manager while project manager will register the project, client, project team, CCB and functionality into the system.

4.4.2 Change Registration Sequence Diagram

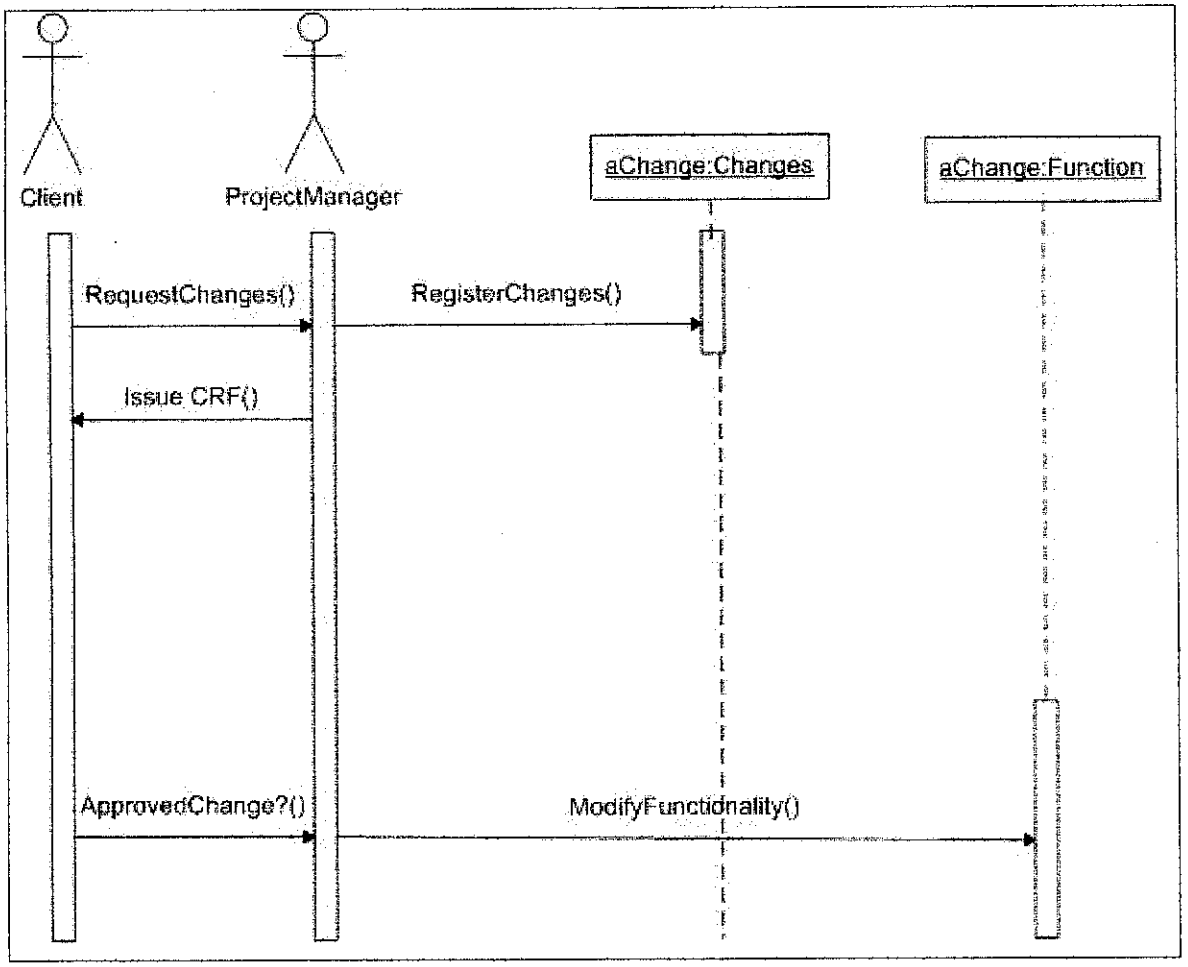

Figure 07: Registration Changes Sequence Diagram

This diagram shows the action of client and project manager. Client issue request for changes and project manager then will register the changes and calling up for meeting. After getting the approval from Change Control Board or IT Steering Committee, then project manager will amend timeline of the project. After the changes being amend, project manager will modify the functionality of the system.

4.4.3 Update Cost and Schedule Sequence Diagram

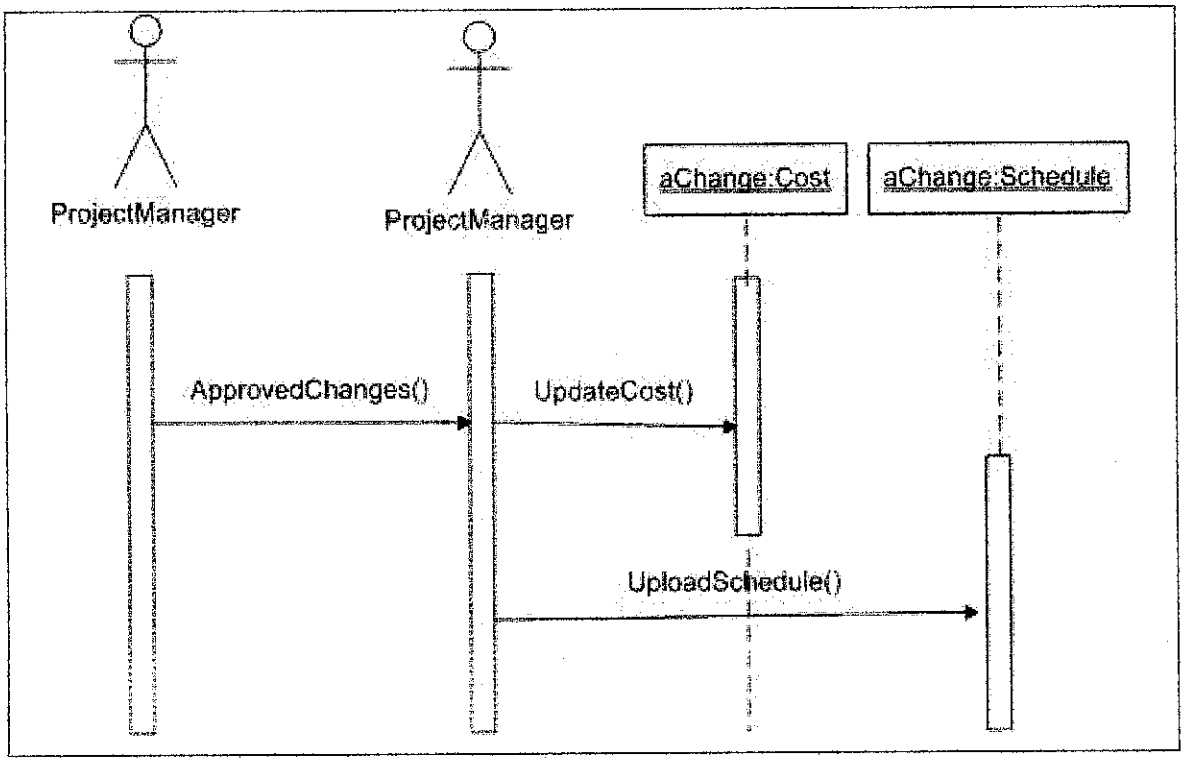

Figure 08: Update Cost and Schedule Sequence Diagram

This diagram shows the action of project manager in updating cost of the project and upload the new schedule to the system.

4.5 Interface Design

In this section, the interface design from the system that derived from analysis and modeling that had been done. The interface design and development process will be used several tools like:

- Macromedia Dreamweaver MX
- Internet Information Services (IIS) for ASP
- Microsoft Access 2003

4.5.1 Landing Page

The interface design which had been sketch in storyboard transferred into system using Macromedia Dreamweaver MX. For backbone of the system or hosting the system will use Internet Information Services (IIS) with Microsoft Access 2003 database. The system will be developed on ASP platform along with HTML.

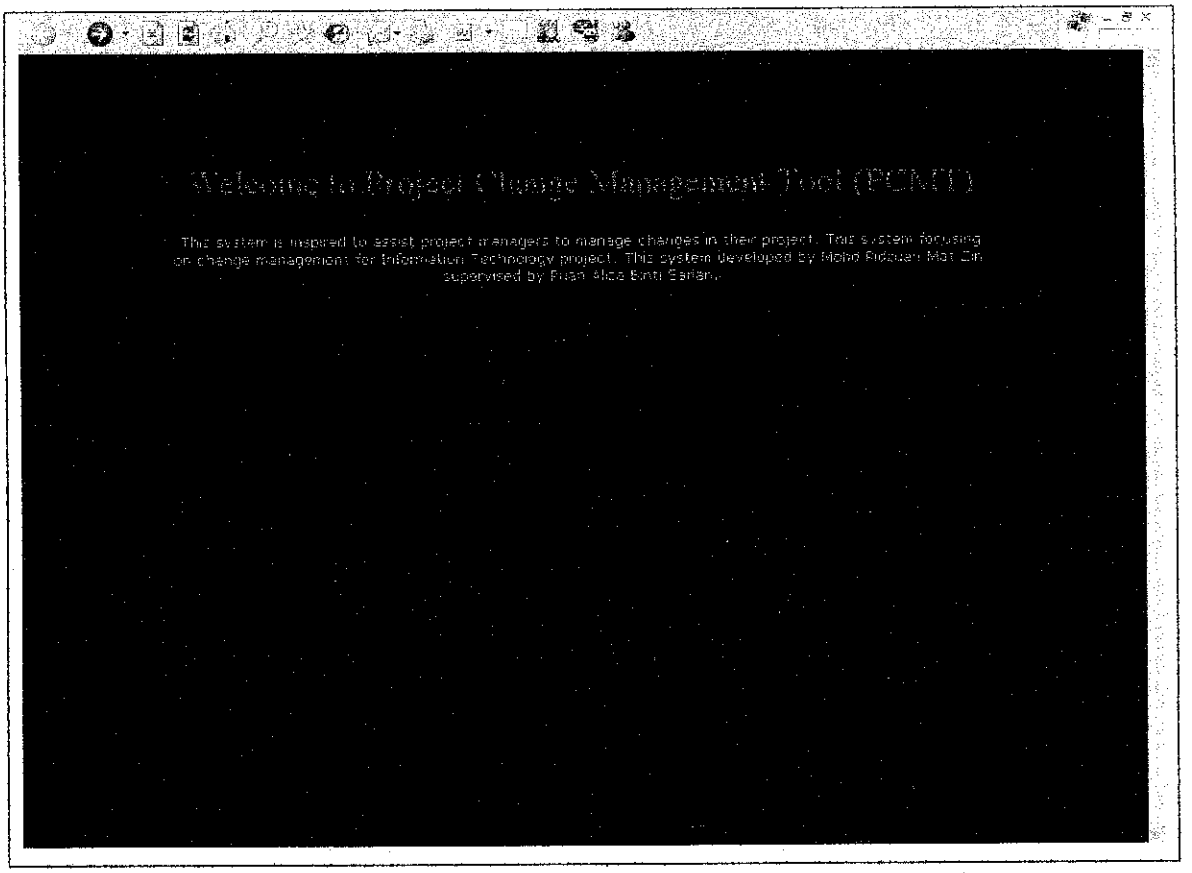

Figure 09: Landing page for Project Change Management Tool

The system color scheme use white, jeans blue and orange. The color scheme has nice contrast and gives good mood to the viewer. The landing page has information about the developer of the system and his supervisor. The link which is use to enter the system indicated by the "ENTER" link.

4.5.2 Register Project

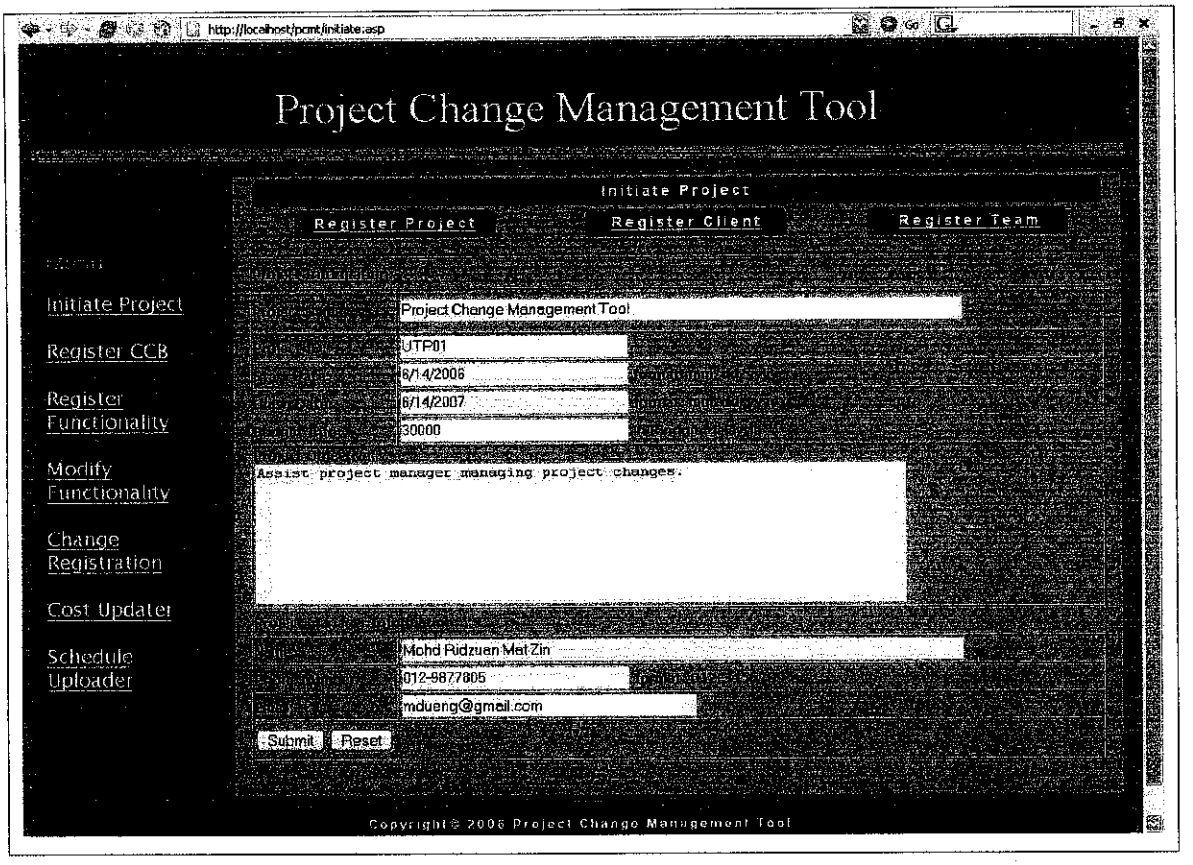

Figure 10: Register Project

In this screen, user needs to initiate the project before user can move on to change management. User needs to fill information about the project. The field that needs to fill by user will provide the system with basic information on the project. Change management cannot move on if basic information not captured.

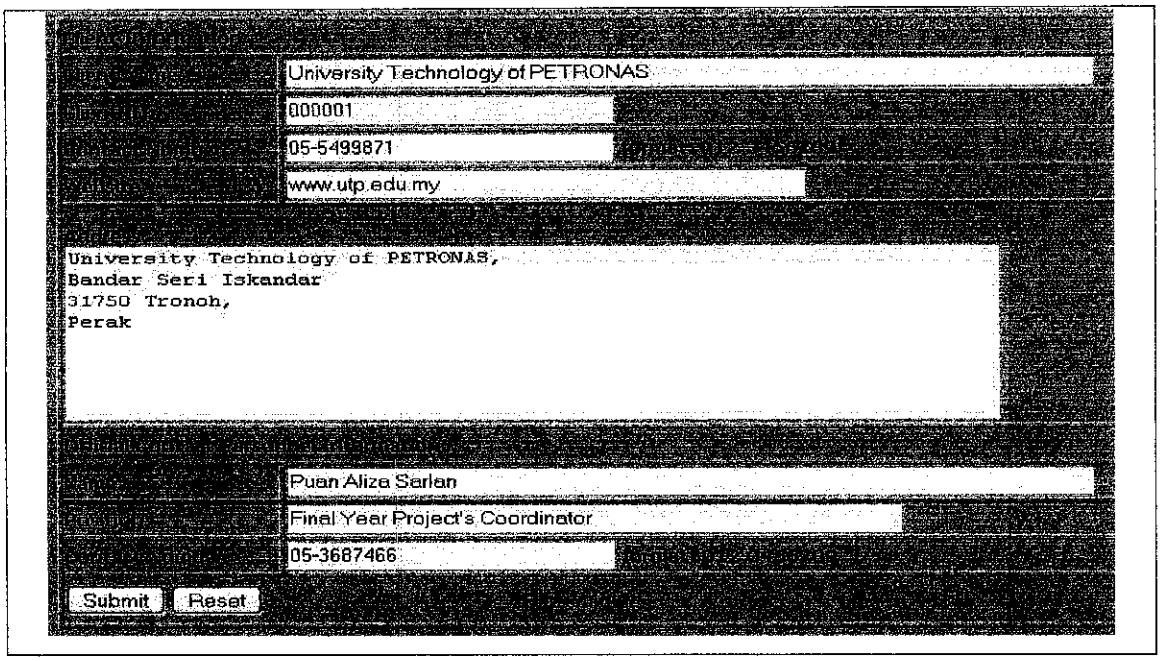

Figure 11: Register Client

In register client screen, user will register basic information about client of the project. Beside the information about the company/party who owns this project, official contact personnel information for this project also captured. It is easier to have one contact point in managing a project so that there are only one source of information flow in and flow out to both parties; developer and client.

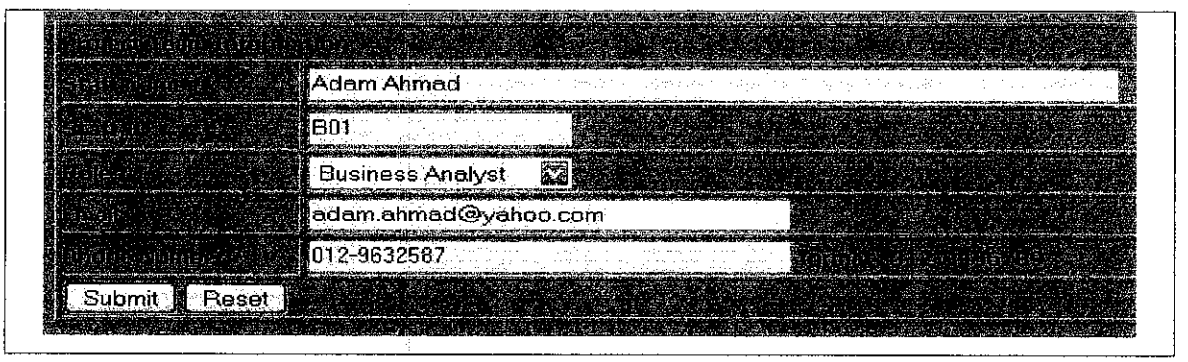

Figure 12: Register Team

Register the project team needed so process of assigning workload can be done efficiently. Project manager also can get the idea on how much work force that he/she

have so that he/she can develop project timeline based on the resource that the project manger has.

4.5.3 Register Change Control Board (CCB)

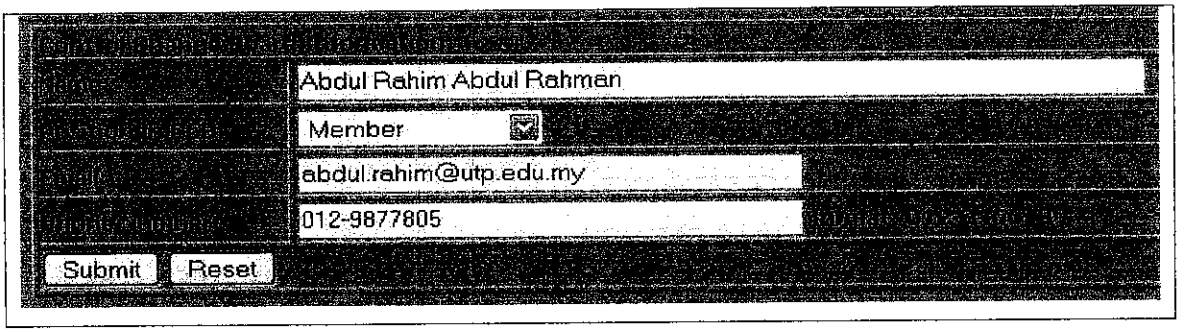

Figure 13: Register CCB

Change management involved change control board, which is the panel to approve request by client. This board is on the client side and this board normally involved top management, sponsor of the project, and project management team from client side.

4.5.4 Register Functionality

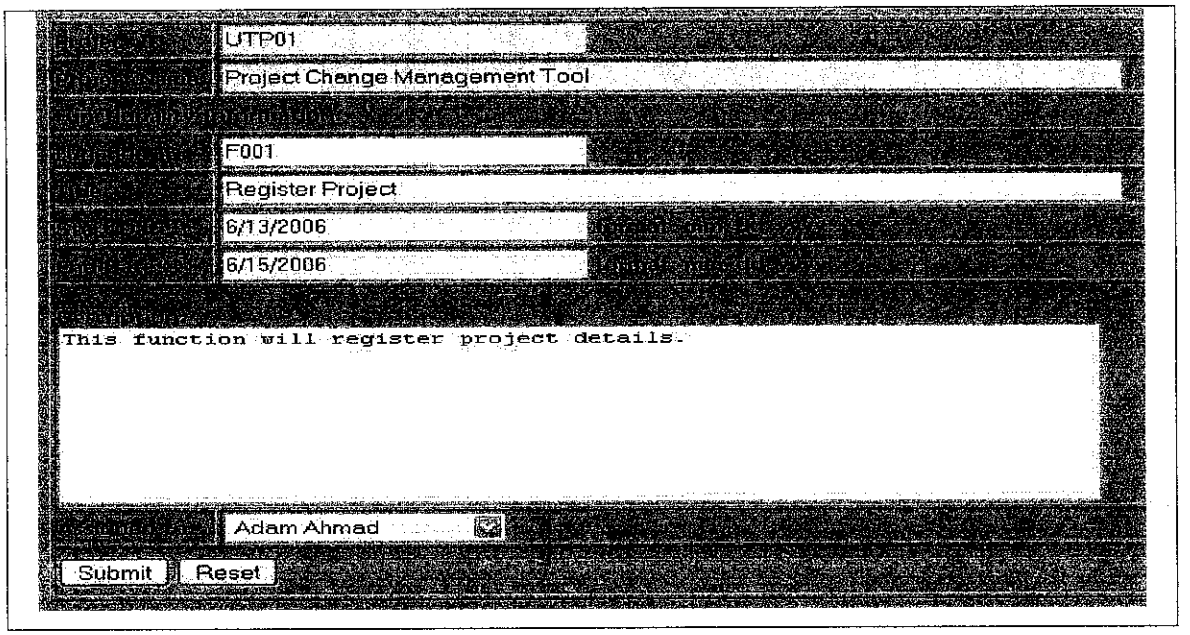

Figure 14: Register Functionality

In every system developed in a project, there is functionality of the system. Functionality provide the function of a system, how the system behave and user interaction element. Functionality need to register so that project manager can keep track the project has how much functionality and what the function of the functionality provide to the system.

4.5.5 Change Registration

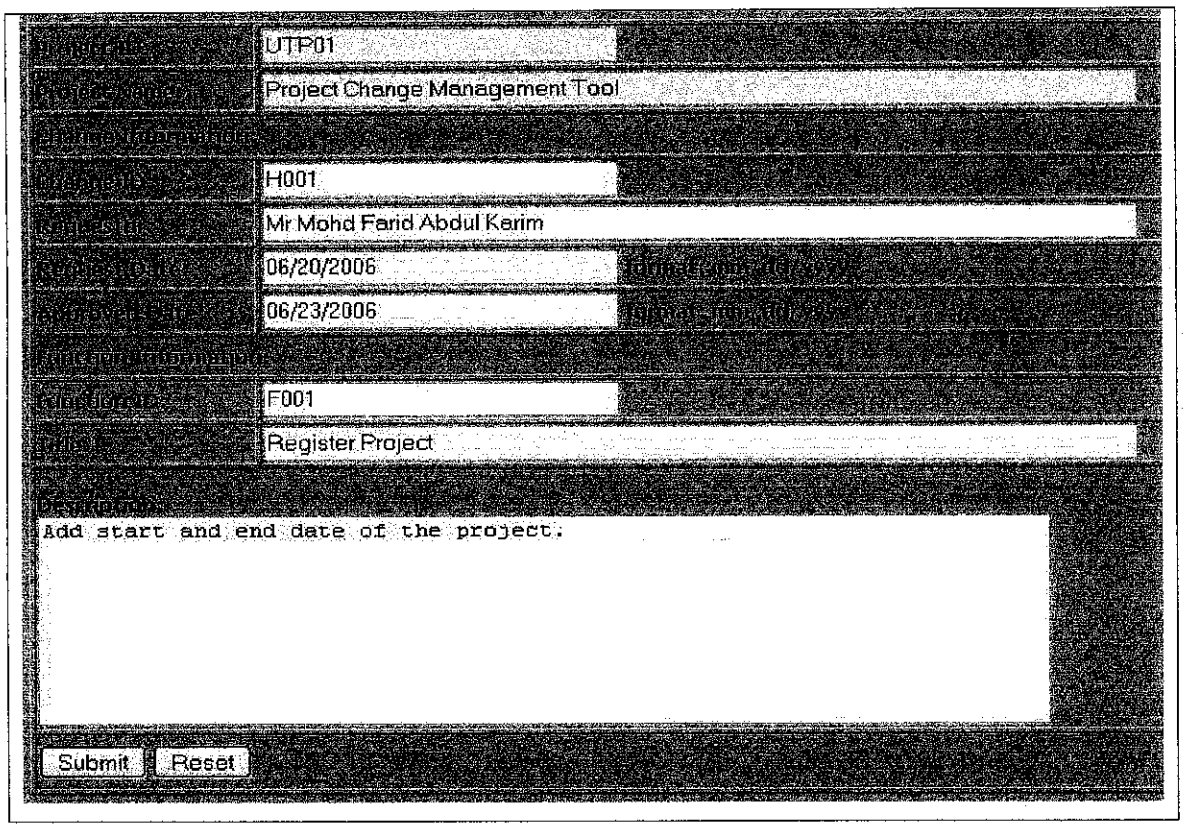

Figure 15: Change Registration

Change registration is the first screen that covers project change management. In this screen, user will register change request from client. Registration is done when only change request already approved by CCB. Change registration capture information on functionality asks by client. Functionality of a system normally the area that client want to change along development process and the process is time consuming and will be charge so it's important to document it.

4.5.6 Modify Functionality

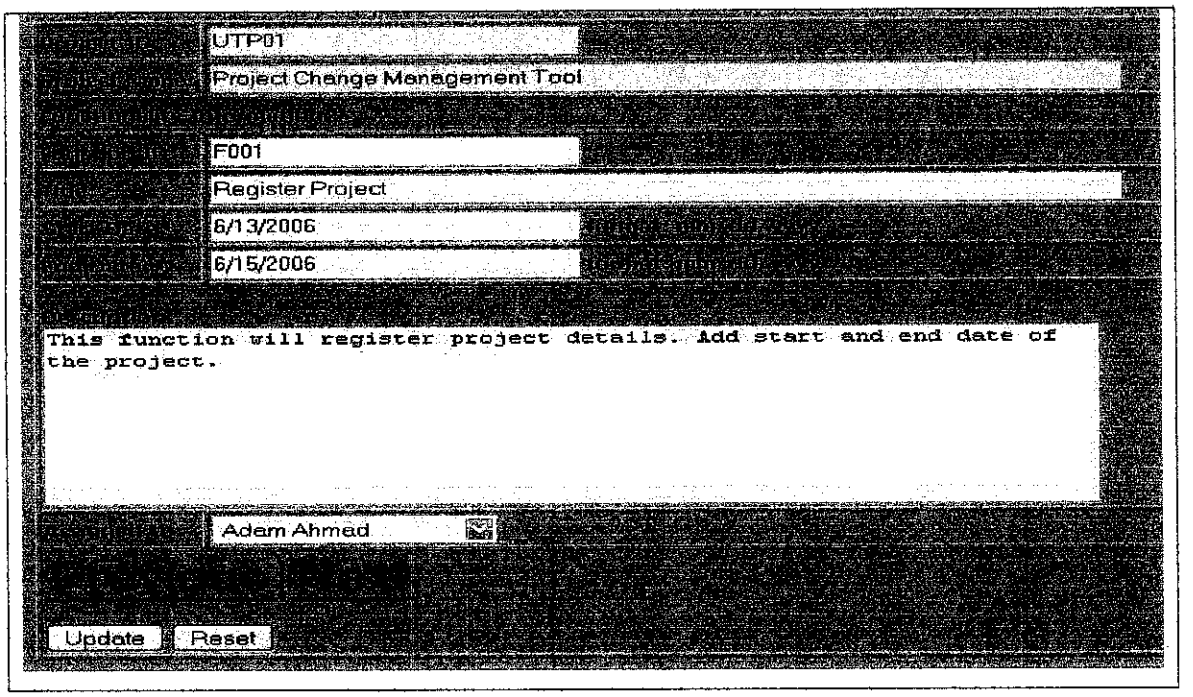

Figure 16: Modify Functionality

After the change request already approved by CCB, project manager will either modify or register functionality that requested by client. If client request for additional function in any functionality, project manager need to modify the existing functionality. If the function is not available yet, project manager needs to register it at Register Functionality screen.

4.5.7 Schedule Uploader

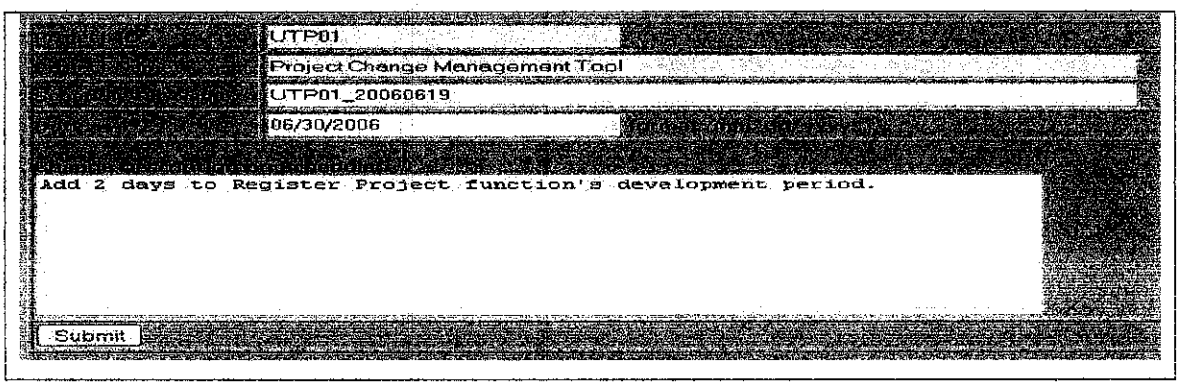

Figure 17: Schedule Uploader

Schedule uploader is a function in this system whereby project manager can upload the schedule of project after the modification to the timeline been made. Normally, changes takes time to finish so adjustment to timeline is necessary. Therefore, by having this function, project manager can upload and broadcast the new adjusted timeline to others.

4.5.8 Cost Updater

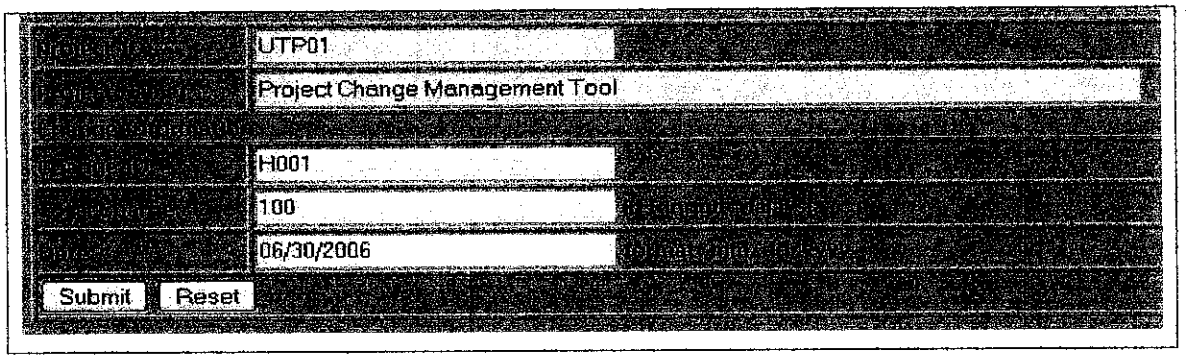

Figure 18: Cost Updater

Cost updater is function in system that helps project manager updating the total cost/budget on this project. Most of the changes, which involved functionality modification or add new functionality will be charge. Therefore, the total cost of the project will increase and project manager need to update the charges into this system.

CHAPTER 5

CONCLUSION & RECOMMENDATION

5.1 CONCLUSION

The major part of project change management had been implemented in this system as what student in university may learn and what people from industry have. The change management stills the most important area in a project since most of the time of project development related to changes in system. In overall, this project not only improve the knowledge about change management in student but also improve programming skills that student has. The integration between elements in change management is still in basic level in this project. There are lots more to do and lot more features that need to be added to this system. The development of this project in web-based application make it reliable to publish over the internet thus creates mobility in this application nature. Project management now much easier than before and this system hopefully, will eliminate traditional system that we have now. There are lot more area in project change management that still cannot be reached and improvement to this system is very crucial so that this system may someday contribute something to project management professional in Malaysia.

5.2 RECOMMENDATION

This system have lots of room to improve and with hope, in future this system will be able to be the most reliable change management tool in Malaysia. This project can be improved in area of:

- Project timeline should be able to display in the system itself

- More security features
- Project team and client integration within this system
- Advanced/intelligence search function
- Upload function
- Reporting function

Knowledge sharing is a grown trend in today world. By using "Sharing Is Caring" motto, people now are encouraged to share their knowledge in organization. By sharing knowledge, more and more people get the advantages from the knowledge and the knowledge will grew rapidly with non-stop knowledge from various people who go in and go out from an organization. This features is very important in any system in whole world in incoming years so it is a very good improvement to this system if this system can provide k-based change management system will not only capture the change management but also knowledge across the organization. Beside enrich the knowledge of existing project management team, future project management will get enormous benefit from this features.

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