

DIW3420

Work Based Project Report

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Project Management

The word *project* has its roots in Latin and Greek, where it comes from the verb *to throw*. The word *project* originally meant something that came before anything else. As the word was adopted into the English language it also became synonymous with the object or act of creation as well as the plan. (Anon. 2008)

In modern day terms a project is defined as “a large or major undertaking, esp. one involving considerable money, personnel or equipment.” (Anon. 2006)

As projects became seen as more than just the plan of an object, to include the object themselves, so developed a number of project management techniques and methodologies. These techniques and methodologies strive to ensure that projects are successful, accountable and predictable. There are a vast number of different methodologies and project management tools available to the manager today. Some of the most commonly used methodologies and tools are: (White & Fortune 2002)

- PRINCE2 – Projects in controlled environments
- PERT – Programme evaluation and review technique
- SWOT – Strengths, weaknesses, opportunities and threats
- Gantt Bar Charts
- SSADM – Structured systems analysis and design methodology
- CATWOE – Customers, actors, transformation process, world view, owner, environmental constraints

SSADM breaks a project down into a series of steps that are often referred to as a *waterfall model*. The steps involved are:

- Feasibility study – looking at the cost effectiveness and possibility of the project
 - Requirements analysis – identifying the needs and requirements of the system
 - Requirements specification – identifying the requirements in detail
 - Logical system specification – technical requirements and logical design of the system are developed
 - Physical design – the logical design is used to develop the project specifications
- (ITC Infotech)

SSADM focuses on the technological aspects of project design and management by breaking the systems down into smaller tasks, defining the project view in terms of data flow and how the data interacts with the following and preceding steps. CATWOE is an alternative approach to Project Management that focuses on people and their response to the stages of the process rather than the technical stages. The CATWOE process may give the Project Manager a better view of how people are communicating within the project lifespan, but it will not provide any details about how the project or system will be achieved. For the CATWOE system to be fully effective managers and workers on the project need to openly discuss their problems or the assumptions of the CATWOE process will be inaccurate. (Thompson & Schmoldt 2001)

There is no, one correct methodology for managing projects, and the methods adopted by project managers will differ depending on project size, type and the organisation it is being developed within. The stages of a project management, however, are fairly common amongst most methodologies.

At project start up there will always be some setting up of the project definitions, regardless of methodologies; what is expected to be achieved, what the end result will be, who will be involved, how will it be realised, how much will it cost. Once these points have been defined, the project manager can look to start the planning of the project. There are a number of techniques available to project managers to assist in this stage. More often than not, an off-the-shelf software package is utilised by the project manager to assist them in keeping an oversight of all the different elements in the project. (White & Fortune 2002 pp 7 -8) For Microsoft Windows, one of the most common project management pieces of software is Microsoft Project (Anon. 2008), on the Apple Macintosh there is a piece of software called Merlin that offers much of the same tools as Microsoft Project.

All of these pieces of software offer Gantt charts and Program Evaluation and Review Technique (PERT) analysis of the projects to their users. In their most basic use, these pieces of software will help schedule tasks and plan the progression of one task to the next. As the software develops in complexity, along with the project, they can offer resource and finance management too and in their most developed state, can offer full collaborative functions and incorporate bug tracking and version control systems too.

Using the tools that these software packages afford to the project manager can help them in managing and controlling the project as well as planning the project. Microsoft Project, for example, offers the ability to schedule resources and people to particular tasks. If time constraints change for a task and more or less people or resources are available for that task, Microsoft Project can re-evaluate the impact that these changes will have on the rest of the project. Also, if a change to a task within a project would stop a required deadline from being achieved, the software would notify the project manager as soon as this happened, giving them time to make the necessary adjustments to try and bring the project in on time. By planning the project in this software and then saving your plan as a baseline, the project manager can then update the plan as tasks are completed, and produce predictions of how the project will finish based on real-time values. These tools can assist in helping the project manager to have a clear view of the time-scale, budget and resource usage.

By having all this information at hand, the project manager can also easily produce reports on any of the information available in the software. Budget reports can be generated at the click of a button and critical path charts can be displayed easily.

Project management software is not without its downfalls though. One criticism raised against these software packages is that they often lead the project manager to focus on tasks and resources too early in the planning stage, and not focus on their objectives and deliverables. Another criticism of using these software packages is that it may remove a large amount of important interpersonal contact between the project manager and the project team. (Anon. 2008)

Once the project is planned and has begun, the role of the project manager changes and they must start to monitor, evaluate and make decisions based on the changes that inevitably happen. One of the most important ways of staying in touch with what is happening in a project is by regularly meeting with the project team to discuss progress, any issues developing and also to let them know any changes to the plan. It is also vitally important for the project manager to meet with the stakeholders. Whilst this is vital in the planning stage, it is just as important during the development stage too. It is at these meetings that the project manager can be sure that the project is progressing to the expectations of the stakeholders and also incorporate any changes that they may want included.

In the development of my project I began by meeting with the stakeholders that would be using the finished system. A general meeting was held between caretakers, the finance department and teachers who run and plan trips and visits in the school. This meeting let identify a large number of the areas that the successful database would have to support. After this initial meeting I began to design the schema for the database, looking at which tables I would need and what information would be stored in those tables. After doing the initial database schema I then organised secondary meetings with the finance department and caretakers to discuss in greater detail their requirements for the database. These meetings allowed me to further refine the database schema, hopefully ensuring that the database would hold all the information necessary for the project.

Once these initial meetings had been held, I then began to code the database and the web based front-end that the users would interact with. As this project was relatively small-scale I did not utilise project management software in its development. The development process was loosely based on the SSADM model, with the majority of my focus being on the technological stages of development.

The initial meetings with all concerned staff equate to the first two stages in the SSADM model of conducting a feasibility study and analysing the requirements of the stakeholders. The third stage of specifying the requirements was the meetings with caretakers, site management and the finance team to identify in detail the exact requirements of the system. The fourth stage of SSADM is the logical system specification. This was the process that I carried out by myself after all the meetings had been held, where I developed and finalised the database schema to incorporate the requirements identified in stages two and three. The next, and final stage in SSADM is the physical design stage. This was when I started to actually code the database and web front end. As mentioned earlier, SSADM is a waterfall approach to project management and this approach was also

true in my project. There were a number of times when in stage 5 of the project I realised there was missing or incorrect specifications in the earlier stage. By adopting the waterfall approach, I could revisit the earlier stage and make the adjustments the schema required then move back to the next stage of physical design. There were times during the fourth and fifth stages of development that some of the stakeholders I had approached in stages one, two and three would come back and suggest other areas of functionality that the project would require. By utilising the waterfall view I could easily refine the design and let the changes cascade down through the other stages.

The SSADM model, however does not incorporate any assessment or evaluation processes. Once I had developed the project to a level that it could be used by an end user I then had to begin to test and debug the application. For this to be possible I had to get an amount of data into the database to be able to see if it functioned as expected. I worked with the other members of my department (ICT Support) in inputting an amount of data into the system so that we could begin debugging the application.

The first level of debugging was to make a note of any errors that my department encountered in entering basic information. We then feed these faults back into the design cycle and made any changes necessary to fix the problem. This then lead us to another stage of testing and debugging. This process continued until we were happy we had a system that meet the required functionality of the original project brief.

Once we had finished this first level of testing we then had to turn the system over the users for them to test it and feedback to us their concerns and issues. This is the current stage of the project and is still on-going. I have had a number of requests for change to the system, mainly in the interface and layout of the interface. Due to the nature of the web based interface, and the fact that it has been written in semantic XHTML and CSS, these changes have been very easy to incorporate into the project without any huge changes to the code base of the system.

Once the user testing process is finished and all of the main users are happy with the functionality of the system, I will then produce the documentation of the system and develop training materials for it's use and installation. The final stage will be introducing the system into the school as a whole and replacing the existing paper based system with this new electronic system.

An advantage with developing this system as part of this course has been the requirement to formalise and review the processes I have undertaken in it's development. This has given me useful insight into Project Management and let me see the short comings of the methods I adopted. The main issue I have had with this project has been time management and being able to give the stakeholders clear deadlines and target dates in the development process. To rectify this issue in future projects I think I would employ Project Management Software in the development process to assist me in evaluating the progress of the project and to be able to produce clear and realistic time-lines for the completion of the project.

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