**Software Project Management**

**Methodology:**

As was mentioned earlier in the project proposal we have chosen to use the spiral model.

Spiral Model

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| --- | --- |
| **Step 1**  Determine goals, alternatives and constraints    Start | **Step 2**  Evaluate alternatives and risks |
| **Step 4**  Plan for next phase | **Step 3**  Develop and test |

Figure 1 (M. Younas 2013)

The reason we chose the spiral model is because it aims to avoid abandoning the project half way through after realizing that the system benefits will be less than its cost. At each phase well-thought-out details are carried out and the possibility that the project will be successful can be justified (Hughes and Cotterell, 2006, p.77). Risks are taken into consideration and requirements and design are developed in a series of prototype (M. Younas 2013). Each loop in a spiral model follows 4 steps as indicated by the diagram above.

1. Determine goals, alternatives and constraints

2. Evaluate alternatives and risks

3. Develop and test

4. Plan for next phase

At the end of each loop an evaluation is done before the next iteration starts, this will be good because we get feedback from the user and anything that needs to be adjusted can be done at this stage hence another reason for our choice, client is involved and we do not have to wait until the real software is developed to realize that it is not what the user wanted. Once the user is satisfied the software can then be developed with phases following the waterfall model. So we can say the fact that risks are taken into consideration, the user is involved during development and with this model you can learn as you develop the system were our main drivers for choosing this model.

We did not choose the waterfall method because with this model you have to finish one phase before you move on to the next one, user requirements have to be well defined and the development methods have to be well understood (M. Younas 2013). Waterfall has its advantages which are it avoids rework as every phase is looked at thoroughly and it avoids reopening activities which were completed as this can mess with deadlines (Hughes and Cotterell, 2006, p.75).

The disadvantages of waterfall are that most likely users will change their requirements during development and it will be hard to go back to an earlier stage although it is possible to do it, this will cause the project to go over budget and most likely to be late (M Younas 2013). It is mostly used for projects that are low risk so in our high risk project it will not be appropriate. It is suitable for projects where requirements are clear, known and unlikely to change but in our case we are not sure that the requirements will not change so to be safe we chose the spiral where we will develop a prototype and find out if that’s what the user want.

We did not go with the Rapid Application Development (RAD) also known as prototype, because of some of its disadvantages. There are two types of RAD, throwaway and evolution. With the throwaway approach the final system can be delayed as the first prototypes that were developed get thrown away “when the true development of the operational system is commenced”, (M. Younas, 2013, Software project management, week 2). With the evolutionary approach the first prototype will be refined until it can be the operational system therefore “standards that are used has to develop the software has to be carefully considered”, (Hughes and Cotterell p.78). It is harder to control budgets and resources as the development can be repeated so many times. There is a risk that the final system can easily drift away from the original user requirements as so many changes are done.

Despite these disadvantages there are a lot of advantages with the RAD method, the user is heavily involved in the development process and the requirements are made clearer, usability of the system is improved as the system is tested and them modified if there is need to, there is improved communication between the client and the developers and maintenance costs are reduced (Hughes and Cotterell p.79). It is a learning experience just like the spiral because prototypes are developed first before the final system.

Despite RAD having some similarities with the spiral model we chose the spiral model because once the client is satisfied it then follows the waterfall model which involves coding, integration and testing, acceptance test and implementation and to us these steps are important.

References:

Hughes, B. and Cotterell, M. (2006). *Software project management.*4th ed

M. Younas (2013) Software project management Module U08784 Session materials Week 2, Semester 1. Oxford: Oxford Brookes University.