**OPTIONAL ASSIGNMENT 2**

Unit 3: Project Management and Leadership Processes

Problem 1:

**The company TAKEOFF Ltd. has won a contract to build the orbit control software for the Goodbye satellite.**

**The system will be composed of four modules: data acquisition, signal transmission, signal reception and signal processing. One of the key requirements of the control software is that the satellite should self-destruct if an error is detected. If the satellite fails to self-destruct, the controller should destroy the satellite from the operator console.**

**The project leader leaves the company at the end of the analysis phase, and you are engaged to continue project development under the following conditions:**

**1) Make no new changes to the project**

**2) Prioritize software reliability and correctness**

**3) Assure that project development is delayed by no more than four months**

**4) Implement a generally applicable data acquisition module that requires only minor changes for integration into the control software of other satellites**

**5) Not leave the company for at least one year during the system maintenance phase after satellite launch.**

**As project leader, what would your activities during the development phase be? Prioritize these activities.**

As a project leader, the activities during the development phase (in order) would be:

*Negotiation. Monitoring. Management. Coordination. Technical Direction*

In the negotiation phase, we must talk and negotiate with the client company the things they want and the ones we would be able to do. This analysis phase has already finished and there are already some established requirements, such as that we should make no modifications to the project, and that the duration should not be more than four months. Although they initially give us the requirements, it could be possible that during the development of the project we need to negotiate changes with the client. In any case, the priority of this phase is low, as almost all these activities are already done.

The monitoring and management phases include planning the estimated time of the development, the expenses, effort (people per day/week), size of the project, risks… All these tasks will give us a global view of the development of the project and will help us in the fulfilment of them. The priority for this phase will be medium.

In the coordination phase, the project leader is responsible of organising the team. First he should choose developers that have the best profile for carrying out the project. It would be necessary that they stay with the company for one year after the end of the development of the project for the maintenance activities.

It will be also necessary to planify the different resources we need (hardware and software ones), and how to obtain them, always suitable with our budget. As they ask us to have software reliability and correctness, maybe it would be better to develop the software from the beginning and have total control of it, better than buying it or depending from another company. It is also very important to have team coordination, distribute the different tasks between the different members of the team in a correct way and give them the resources they need to carry out their assignments. A good coordination and planification will determine the success or failure of the project, so we give this phase a high priority.

The technical direction phase involves collaborating and supervising technical activities during all the phases of development. It will be necessary to have a good control of the time left for finishing the project, assuring that the project delayment is not more than four months, have a tracing of the different costs and resources, and a follow-up of the results, making sure that the software requirements are fulfilled. This phase will also have a high priority.

**Problem 2**

**As a team of novice software engineers and entrepreneurs who are about to set up a company, called SOFTPROJECT whose main activity will be the definition of software projects, analyse the film Startup.com by the directors Chris Hegedus and Jehane Noujaim.**

**a) Applying a variant of the field observation technique to the set film, list the reasons why your business might fail. What measures would you take to prevent each of the mistakes from causing your business to fail?**

First of all, we need to know that having an idea is not enough for having business success.

It is necessary to have team coordination and that every member of the team has an assigned role and knows what he or she has to do. It is also essential that all of them have clear the objectives and the project scope.

It is also important to take into account the competence from other companies that have a similar product or offert. And of course, it is essential that we know how to sell our product. It avails nothing to have a good idea if we don't know how to present it.

**b) Shifting the focus of the film to software project definition and start-up, what problems might arise and how could they be solved if the customer, developer and user are all the same person and if they are different people? What are the potential advantages of the customer, developer and user being the same person?**

If the customer, developer and user are the same person, it has the advantage that there is no need to communicate with anyone or agree with other people. But it is essential that this person has clear objectives and distinguish between the different roles to make decisions.

If the customer, developer and user are different people, there will be different opinions and points of view of the product. That’s why good communication is essential and that everyone gives their opinion. It is also important to establish from the beginning the objectives and scope of the project.

**c) What qualities should or must a project leader have?**

A project leader is the one in charge of making decisions and organising and coordinating everything, so it should be a person with the capacity of listening to others and making decisions thinking in the project and the company. It should have a good analysing capacity and not let the emotions control him. It must be a trustworthy person known for his good judgment.

**d) What project management and leadership activities are performed in Startup.com?**

For example, they look for good financing, they go to talk with different people to finance their project. They also compare their web page with others to see how to improve it. In addition, we can see team coordination and management when they discharge members of the team.

**e) List the steps to be taken to define and start up a software project.**

First of all it is essential to make a planification and estimation of the project costs and make a balance between the benefits to be obtained and the risks, to see if it is worth it.

Then, we have to decide the life-cycle our project will follow, as well as the techniques, tools and methods to be used.

After deciding what we are going to develop and how, we need to define the objectives, inputs and outputs of the project.

Then we should divide our system in subsystems to facilitate the work, set who will be the project leader, and distribute among the other members of the team the different tasks to be carried out.

Along the project, we should have a good control of the development of it, checking the time, evaluation of objectives, coordination between members of the team, costs, and fulfillment of the project.

**Argue your responses.**