**Homework #2**

GK Posted Jan 2023

**Instructions:**

Your answers should be *direct and explained*. Show your calculations, formulas, logic you follow etc. Explanations do not have to be verbose; they should be just enough for the instructor and/or TA to understand what you are doing. 80% of the grade goes to the explanations and logic you follow and 20% goes to the result. *Correct result with no explanations gets zero points*.

Please respond with your own words and own understanding. Copying the answers without understanding them, defeats the purpose of this homework -- it violates the code of ethics and the integrity of the course.

* *If you are* ***suspected*** *of copying any part of your answers either from a classmate or a web site (without a reference link), you get a zero to the entire homework.*
* *If it is* ***proven*** *that you have copied or plagiarized, you will be reported to your advisor, your sponsor, and the School; serious consequences to your academic record and/or your student status should follow.*
* *This is applicable to both the giving student and the recipient student*.

For the problems/exercises, it is expected to use a spreadsheet (Excel) and/or your own drawing tool (PowerPoint, Visio, Drawsoft, etc) or make a neat drawing by hand. ***You must embed*** these assets into your WORD file with no external references, specifically for Excel. Unless the TA or I click-and-open the object to see your calculations, you will be missing points. *If you do not know how to do so, ask your colleagues, post the question to the Discussion Homework Area, ask our TA and/or ask me.*

Please use font Arial or Calibri of 9pts or 10pts.

DO NOT REMOVE THIS PAGE FROM YOUR SUBMISSION. Also, answer the questions below:

*How long did it take you to complete this homework? \_\_\_\_\_\_\_5\_\_\_\_\_\_\_\_ hours*

*How many hours did you work on your project this week? \_\_\_\_\_5\_\_\_\_\_\_ hours*

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## SOFT, 7pts

Read the material of this link: (<https://www.epicflow.com/blog/stakeholder-engagement-for-your-project-success/>)

Explain what it means to use “soft power” ***in your own words!***

***Answer:***

1. Have a good reputation;
2. Attract stakeholders’ attention to win their flavor;
3. Give them motives to be engaged;
4. Build relationships with stakeholders, make people trust you.

## CRED, 5pts

PMs must earn credibility by the Senior Management. List 3-4 behaviors and actions that increase your credibility.

***Answer:***

1. Show expertise of one’s own
2. Have ability to build team

3. Show strong leadership

## SYS, 28pts

In class we discussed the Systems Approach.

Diagram

Description automatically generated

Now it is time to apply this process to your own project.

1. (8pts) Describe the REQUIREMENTS of the product or service for which you are doing this project. Typically, such requirements are developed by the Product Manager or the Product Owner after considering the addressable market and the company strategy. These high-level requirements include things like:
   * That would the product/service ***will do*** for the user?
   * Typical ***functionality*** of the product/service, i.e. if user does …, then ***this*** would do this…
   * What are the high-level ***attributes*** of this product/service?
   * How would this product/service ***relate*** to other product/services?
   * What are the ***constraints*** (size, weight, cost, energy, etc) of this? (as figures of merit)
   * What is the ***quality/durability*** expectations?
   * etc

Product/service requirements do not include “how” the ***thing*** is made, or “who” will be making it. They strictly refer to properties of the ***thing***.

Answer this question by referring to your Project Title and listing at least 5-important requirements.

Project Titile: Centralized Computing Service for Business

Requirements:

1. Lower the coupling between departments
2. Inprove information security
3. If employees make they computer crash, they can resume their work easily
4. Except the initial procurement and installation fee, it costs little
5. It never depreciates
6. (8pts) Based on the above requirements create the TECHNICAL APPOACH (TA). More specifically, for you (and your team) to meet the previous requirements, you will need a list of components/parts/modules, such as:
   * Mechanical modules
   * Electrical stuff
   * Chemical reactors or substances
   * Databases
   * User interface modules
   * Communication entities
   * Etc

Furthermore, you will need to combine the above in some fashion; the components/parts/modules will have to interact with each other in order to achieve the expected functionality per specifications.

Answer this question by decomposing your project to 4-8 major pieces and respective interactions. A Technical Approach does not include “who” is making something or how you will manage the work.

1. Server host machine: administrators manage all virtual machine in the server.
2. Administrator: operations and maintainance stuff from IT department. They maintain the server.
3. Terminal module: Every terminal includes moniter, mouse, keyboard and other I/O devices.
4. Cable module and Telecommunication Protocol: connect terminal and server.
5. (4pts) After completing the Technical Approach, summarize the SCOPE of your project, i.e. what you and your team will be delivering. The scope does not include “who” will do something or how you will manage the work.

The scope of the project is to provide a whole set of services including installation, operating system image procurement, virtual machine customization and distribution, operations engeneering training and technical support.

1. (8pts) Call/ZOOM or meet live with your partner. Read to them your Requirements (a) and your Technical Approach (b). Ask them the question: “If I follow my Technical Approach would I meet the product/service Requirements? What do I need to add (or remove)?”  
   For this question, write down the 3-5 suggestions by your partner, and your response as good idea or not.

You and your partner be ready to present the above during the next class.

***Answer:***

1. Suggestion: Use multi-user with Linux instead of virtual machines

Response: Not a good idea, Linux is not good for normal users

1. Suggestion: Provide operations and maintanance stuff instead of training clients’ own stuff

Response: Not a good idea, the project will be a much smaller scale if doing so

1. Suggestion: Install server locally for information security

Response: Good idea

## INV, 10pts

The investing rate of Project INV is $1M per quarter. The forecasted revenues are $1.6M per year after completing the project. Assume that

• development took 18 months

• operating cost is 15% of the revenues per year

• inflation is 3%

a) What is the net profit or loss after 3 years?

b) What is the break-even time of this project.

***Answer:***

1. 文本

   描述已自动生成net loss: $3.32M
2. break-even time: 5.8 years

文本

描述已自动生成

## NEG, 8pts

Consider a negotiation you did in the past. Explain:

1. With whom did you negotiated something?
2. What did you have to negotiate?
3. What was your POSITION and what was your INTEREST?
4. What was the POSITION and the INTEREST of the other party?
5. If you had to redo this negotiation now, which ***two*** of the five principles of negotiation could you use to your advantage?

**Answer:**

1. My superviser
2. Salary
3. Intern, I want increase my salary
4. Director of the dapartment, he don’t want me leave the company and pay higher salaries
5. Focus on interests, not positions; insist on using objective criteria

## PMRES, 6pts

Mark all functions that PMs are not responsible for.

1. Hire developer engineers
2. Hire product managers
3. Develop subsystems of a product
4. Track software bugs and hardware defects
5. Track when people come to work
6. Manage software development
7. Create a test plan for the mobile application
8. Direct hardware execution

**Answer:**

3, 4, 6, 7, 8

## REPR, 5pts

IRobot Corp, made an offer to Ellen who has just graduated from Northeastern. She will be reporting to the Engineering Manager, Anna. When Ellen met Anna, she said, “*Ellen you will be working for Mary, our Project Manager for the Hover Project”*

1. Who is going to “take care of Ellen” in terms of salary and professional advancement?
2. She is doing well in the assigned project. From whom she will receive kudos?

**Answer:**

1. Mary
2. Anna

## RPT1, 6pts

1. How usual is for a Product Manager to *report to* a Project Manager?
2. How usual is for Project Manager to *work for* a Marketing Manager?
3. Engineering manager to report to a Project Manager?
4. Project Manager to report to the CEO of the company
5. Engineering personnel working for the Project Manager

For each one, respond with one (and only one) of the following words:

* Almost never
* Usual
* Possible

**Answer:**

a. Almost never

b. Usual

c. Possible

d. Usual

e. Usual

## RPT2, 8pts

**For each of the questions, fill-in PM=Project Manager or FM=Functional Manager**

1. The \_\_\_ will hire developer engineers
2. The \_\_\_ is responsible for the quality of the product
3. The \_\_\_ will hire marketing & advertising staff
4. The \_\_\_ manage product managers
5. The \_\_\_ will direct the design of a subsystem
6. Someone from accounting will work for the \_\_\_
7. Engineering consultants might work for the \_\_\_

Correct answers count +1, incorrect answers count -1. No answers count 0. Max credit indicated.

**Answer:**

1. PM
2. FM
3. PM
4. PM
5. FM
6. PM
7. FM

## TRI, 5pts

What is the meaning of the 3rd distorted triangle of Class #2 Slide 23 (or about).

Give an example of a typical company undertaking such projects

**Answer:**

High cost with limited time and scope

Nvidia

## TUCK, 7pts

During the class, when we talked about Tuckman’s stages of group development. Watch this video:

[(146) What is the Tuckman Model of Group Development? PM in Under 5 - YouTube](https://www.youtube.com/watch?v=K8xdzBfX6x0)

<https://www.youtube.com/watch?v=K8xdzBfX6x0>

1. There was a reference to Google regarding “norming” of the team. At what point this was referred first? Use minute:sec
2. What are the four “principal stages of team formation”?
3. Know how to use the Tucker Model to develop a team then you can \_\_\_\_\_\_\_\_\_\_ that from performance level.

**Answer:**

1. 3:04
2. Forming, storming, norming, performing
3. Make team run itself

## PWR, 5pts

1. What are the axes (or columns-rows) of the Power Interest Grid?
2. What are the axes (or columns-rows) of the Commitment Assessment Matrix?

Explain both

**Answer:**

1. Power; interest
2. Level of commitment; stakeholder groups