**Objective**: To develop a foundation that allows you to think about systems analysis and design from a high-level perspective.

**This assignment to be done individually and is worth 40 points**

Each question is 10 points and must be answered completely and extensively for full credit. There is no limit to the length of the answer. An answer of just one sentence will be dismissed. To give you an idea of the extension of the answer, while you answer the question imagine you are trying to teach your friend what the question is asking. You have around 40 seconds to answer each part. The answers will be graded according to the correctness of the answer, the completeness of the answer, the clarity of explanation.

1. Given the following variables related to systems development: time, budget, customer satisfaction, and quality of work.
   * 1. For general projects, order those variables to signify their relevance to successful results of projects starting with the most important one and ending with the least important one.

**I will rank customer satisfaction as #1 because it’ll bring long term profit to a company after feeling satisfied by the service. Even though the quality of work is kind of a determinant to customer satisfaction, I will rank it #2 because I believe no projects can be done perfectly, and as long as most of the customers like it and satisfy with it, the company will gain reputation. I’ll put budget in #3 as it’s important but not so significant compare to the first two variables. As long as the company can produce high quality of work, I believe most of the clients don’t really have concerned about overbudgeting. In fact, from my project management course, I learned that most of the major projects in the US are overbudgeted. Last but not least, time is a random variable that’s really difficult to be determined due to so many uncertainties happening around (e.g., COVID-19 pandemic), and most of the time companies can apply for time extension as long as it’s not too far away from the deadline.**

* + 1. Provide 2 hypothetical scenarios and for each scenario state your \*updated\* order of those variables relative to each scenario.

**The 1st scenario: Budget > Customer Satisfaction > Quality of Work > Time**

**I rank budget at first for the first scenario which will be the projects launched by small companies or start-ups because really, they don’t have enough capital to be overbudgeted. If they fail too many times, or used too much money in R&D or software development before they started gaining revenue, they might go bankrupt easily before completing the project. No matter how good the work is done, they won’t be able to survive the first phase.**

**The 2nd scenario: Time > Customer Satisfaction > Quality of Work > Budget**

**I rank time at first this time for those big companies which had issue on their system. When the system for big companies broke down or perhaps need to be updated to new technologies, it might affect the whole department, say supply chain management, and that would be disastrous for them. Not only the supply chain will be affected, but potentially the whole assembly line or inventory management, ultimately causing millions of losses, if not billions. Comparing to these losses, the budget is not an issue at all, as long as the system developers can fix the problem quickly.**

* + 1. Now that you have 3 different orders, what specific variable you think is the most important one of all? Justify your answer.

**Customer satisfaction is the most important one of all because that’ll constantly generate revenue for companies. By looking at how much is the brand of say, Apple, Samsung, Coca Cola’s worth, how these companies beat their competitors and dominate in their industry, I noticed that it goes back to how they satisfy their customers.**

1. Assuming a project where analysis phase was done improperly.
   1. Discuss the outcomes of that on each of the following:
      1. Team morale – short term and long term

**If the analysis was done improperly, the net present value (NPV) for this project might be negative which means the project will result in a loss. In the short-term, if anyone in the team think this way, they will not be excited and demotivated to do the project because they know that they might not be delivering something meaningful neither to the company nor the society. In the long-term, some of the team member might quarrel with each other if they found out the problem in the project and it’ll be difficult for them to collaborate with each other in the future. Some members might even end up leaving the team.**

* + 1. The immediate next phase – design

**Even though the analysis phase was done improperly, the next phase (design) will still be able to continue on. The worst-case scenario are some members will quit because they know that the analysis phase wasn’t done properly, and perhaps members are demotivated and the design phase will also be done improperly, kind of like the ripple effect. The team might probably end up rushing for schedule, chasing deadline or spending too much resources (e.g., money) in the design phase.**

* + 1. Project Duration

**In OTM 452, I was taught to utilize MS @Risk for project management to estimate the project duration by performing PERT and Monte Carlo Simulation so that we can allow some local and global buffers for our duration estimates. Without properly doing analysis of project duration and simply come up with an estimate, I would imagine halfway through the project, the team will be chasing the deadline like crazy.**

* + 1. Project Budget

**Same goes for the budget, we should properly analyze the resource constraints and the professionals we need in a team utilizing project management tools such as MS Project. Otherwise, it would be a mess looking for resources or people halfway through the project, and that could potentially cause a significantly delay for the project.**

* + 1. Company’s reputation

**Without thorough analysis of the project, and say if the project fails, it would hurt the company’s reputation greatly especially if it’s a public listed company on stock exchange. Not only public reputation will be affected, but some employees that has no confident in the company might end up resigning, causing labor shortages.**

* + 1. Customer’s overall experience

**Without properly analyzing the project, we do not know whether it’ll really benefit the customers or the society at first. Most importantly, is the project worth investing. But we can always find out whether customers like it or not in the next few phases. As long as we apply agile or SCRUM methodologies on the rest of the 3 phases, I believe customer’s overall experience will still be good if we do that. Having that said, the company might still lose money without analyzing the worthiness or the project.**

* 1. If you were offered to join a company and work immediately on a project knowing that analysis was not done correctly. Would you join? Why or why not?

**Depending on the team member of the project and how improper the analysis was done, I will consider whether or not to join the project. If the analysis was not too badly done, and team allows me and accept my suggestion going back to analyze the project again, I’ll definitely join the company because I like to make positive impact on individuals or companies. If I have to work immediately on the project, I will not join the company.**

* 1. Assume you were hired by a company and your immediate task is to lead the project with skipped analysis. What actions are you going to take to rectify the situation?

**I’ll revise the analysis phase by using open-source software or tools such as MS Project. Factors such as net present value of the project, duration, budget constraints, quality of work will be first accounted into the analysis.**

1. Choose a relatively small organization that is just beginning to use information systems. What types of systems are being used? For what purposes? To what extent are these systems integrated with one another? With systems outside the organization? How are these systems developed and controlled? Who is involved in systems development, use, and control?

**SendGrid (Email Marketing Company), current CEO : Sameer. A cloud-based email service is being used. A cloud-based SMTP provider allows clients to send email without having to maintain email servers. MassMailer for Salesforce is a native AppExchange app that integrates SendGrid extensively with Salesforce and lets their clients overcome a number of Salesforce Email Limitations. It also integrated with Amazon Web Services(AWS), Google, Microsoft Azure, systems outside the organization. To control the systems, security requirements are identified for each project at inception, and are tracked throughout the lifecycle of the project. Security testing is performed prior to release, and issues remediated as part of the software development lifecycle. SendGrid also performs internal and third-party application layer assessment of their applications on a continuous basis. OWASP Testing Guide will be used as the basis for application layer vulnerability testing. This structured methodology ensures that the applications are free of the OWASP Top 10 most critical vulnerabilities, which include injection attacks, cross site scripting, security misconfiguration, and sensitive data exposure. SendGrid’s InfoSec team is involved in every software development project within the company**

1. Use the web to find out more about both **Scrum** and **Kanban** frameworks.
   1. In what ways both are similar and in what ways they are different?

**Similarities:**

#1

Both of them use a “pull system,” or a systematic workflow that allows team members to “pull” new tasks once the previous task is complete.

#2

Both of them are work methods that are widely applied

**Differences:**

#1

KANBAN: Measures production using “cycle time,” or the amount of time it takes to complete one full piece of a project from beginning to end.

SCRUM: Measures production using velocity through sprints. Each sprint is laid out back-to-back and/or concurrently so that each additional sprint relies on the success of the one before it.

#2

KANBAN: Products and processes are delivered continuously on an as-needed basis (with due dates determined by the business as needed).

SCRUM: Deliverables are determined by sprints, or set periods of time in which a set of work must be completed and ready for review.

#3

Kanban: There are no pre-defined roles for a team. Although there may still be a Project Manager, the team is encouraged to collaborate and chip in when any one person becomes overwhelmed.

SCRUM: Each team member has a predefined role, where the Scrum master dictates timelines, Product owner defines goals and objectives and team members execute the work.

* 1. Can you utilize both frameworks in the same project? Why or why not?

**Yes, I can. Kanban works well when used alongside Scrum or any other Agile method. Basically, Kanban can be applied to visualize and improve the flow of work, regardless of the methodology being used to do the work.**

* 1. Think of the 4 Scrum events (AKA ceremonies): Spring planning, daily scrum, sprint review, and sprint retrospective. How do you envision those taking place in your own project?

**First of all, I will find a team with similar interest and purpose doing the project. Then, assign a SCRUM master, defining roles and responsibilities, and decide on sprint length. Of course, I will create an initial backlog of work. I’ll be in a stand-up meeting for 15 minutes every day to discuss about the sprint. After completing each Sprint, our team will be reviewing the sprint and discuss about it with the client and see if need to make changes before moving on to the next Sprint.**

* 1. How does the Kanban framework ensure continuous product delivery?

**From my OTM 300 course, I learned that Kanban can help companies to eliminate bottlenecks in their system, improve flow and reduce cycle time. It was first introduced in the automobile industry and helps to deliver more continuously and get faster feedback to make any changes that may be needed by the customer. It restricts the amount of work in any procedure by matching the related tasks and allocating time to every task. It is important to ensure that the work flowing through the system matches its capacity.**

* 1. Describe the relevance of motivated individuals in both frameworks.

**From previous part, I mentioned that in Kanban was first introduced in automobile industry because it is better for continuous flow work like support and services. On the other hand, complex, iterative work, like new product or feature development, may be better done with scrum.**

**If teams keep working on one thing after another, use Kanban. If teams need a sense of accomplishment/completion/closure, use scrum.**

**If the work is a one-time effort, and doesn't require inspection and adaptation, use Kanban. If the work continuously evolves and needs improvisation, use scrum.**