



BAHRIA UNIVERSITY, (Karachi Campus)

Department of Software Engineering

Assignment 2 - Spring 2022

COURSE TITLE: Engineering Management

COURSE CODE: **MGT-423**

Class: **BSE-IV (B)**

Shift: **Morning**

Course Instructor: **ENGR. TALHA BIN SAEED**

Time Allowed: **4 Weeks**

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Max. Marks:05

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[CLO1: 5 Marks]

QUESTION #01

Select an engineering problem from an organization of your choice and apply the 5-step engineering problem solving approach in detail for the problem to be solved. Also comment on the simplicity of the steps involved in the problem solving approach.

Solution :

Step 1: Identify the problem :

To solve a problem, you must first determine what the problem is. It is easy to focus on the symptoms, not the causes. You use logical method to find out what the problem is. Questions you can ask include:

- What have I seen (or others)?
- What was wrong (or with others) when the problem arose?
- Is this a problem in itself or is it a sign of a deep, root problem?
- What information do I need?
- What have we tried to do to fix this problem?

Let's take the example of a coffee shop. It says the coffee shop has been losing business gradually over the last quarter, without much success over the past two years. Restaurant owners want to better understand why they suddenly lose business. First, the owner assesses the situation and considers all possible reasons for this happening. They monitor their employees, their daily routines, and their training procedures; while we look at local competition and any regional conditions, such as in a college town. After looking at all the possible reasons, the owners find out what is causing the problem and write it down: Summer and most of their customers (students) have left in the summer. Finally, the owners answered the question "why is the current situation so problematic?" After further research, they realize that the problem is a limited market and should increase in order to find more businesses.

Step 2: Generate potential solutions :

The next step is to make a list of possible solutions to the problem you have found. There are many ways to make solutions. Brainstorming is the first way to think about a possible response. This can be done individually or in a group setting. The latter is recommended, because the more you install, the better, simply because different ideas can lead to different solutions.

Step 3: Choose best solution :

Once you have a list of possible solutions, it is time to test your decision-making skills. To find the best solution to your problem, analyze all possible solutions and determine which one is right for you. One may want to consider several factors before choosing a single solution. These factors include efficiency, efficiency, punctuality, resources, and cost. Also, consider who is involved before making any final decisions. The finishing process is another great way to narrow down your choices. This is also where risk management will be used to help make a decision. As you can imagine, choosing a solution should not be alone.

You may eliminate a number of options and alternatives. You lose control over the situation. In some cases, a problem can escalate if it is not dealt with promptly. For example, if you do not handle customer complaints promptly, the customer is likely to become even more annoyed. You will have to work much harder to get a satisfactory solution.

Step 4: Implement the decision:

Once you have made a decision, it should be implemented. For major decisions, this may include detailed planning to ensure that all components are functional with their component changes. The kitchen may need to be redesigned and fitted with new appliances. Employees may need additional training. You may need to schedule a temporary closure while making the necessary adjustments. You will need to notify your customers of the closure.

Step 5: Evaluate the outcome :

The last part of the problem-solving process is to analyze the results. This can be done after a few weeks, months, or years, depending on what you are trying to change or gain. It is important to remember why the problem started in the beginning and how it affected the company. Ask yourself any of the following questions to better evaluate the results:

- Are any of our processes interrupted by a previous problem?
- Are there any new problems to come as the program has already begun?
- Is it possible that the problem may return?
- Does everyone know the original problem, the solution created, and why it was created?
- Do you need to change any policy, process, or staff to prevent this from happening again?

Sometimes it is necessary to start the process completely. To make the problem-solving process easier, it is best to make the solution as simple as possible. Try to focus on the solution instead of the problem.

Example of problem solving Approach:

You have invested heavily in product marketing, but you cannot meet your marketing goals. Specifically, you missed your 30% deposit last year and would like to meet the same targets this year.

After collecting and evaluating a wealth of information in your sales and savings departments, you sit down with your marketing team to find out what is holding back your success in the marketplace.

Determining whether your product is competitively priced, identifies two effective solutions.

You could:

Hire a foreign company specialist to do a detailed market analysis

Reduce the price of your product to reduce competitors

As you rush to get results, you decide to immediately reduce the price of your product and market it accordingly.

If next-quarter revenue figures show sales go down even further - and marketing surveys show potential customers questioning the quality of your product - go back to your original prices, review your troubleshooting process, and use a market analysis solution instead.

With the important information you gain, you finally get to the right amount of product for your target market and sales start to grow. Even though you miss your income goal again this year, you reach it by the second quarter of the following year.

Assignment (2022). *5-step engineering problem solving approach*.

Available at: <https://www.knowledgecity.com/blog/5-steps-to-make-your-problem-solving-process-easier/>.