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Course: BET-CPET 3A

Subject: ESS 6- Engineering Management

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Topics: Decision Making, Planning, and Organizing Technical Activities

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**Reflection No. 2: Straw Tower Experience**

On September 4, 2025, the 2nd group of BET-CPET 3A & B of course code ESS6 (Engineering Management) presented their report which centered on the Decision-Making Process and Planning. Just like our first report, their topic once again emphasized how engineering management is both a study of theories and frameworks as well as something that we experience firsthand in practice. I was also part of the activity they prepared for us, and it made me realize how even the simplest of tasks could reveal the core lessons of decision-making and planning when observed carefully.

The activity was called the “Twin Straw Tower.” The reporters picked two groups and provided us with straws, barbeque sticks, tape, and a folder, and from these limited materials, we were tasked to build the best possible tower. My group was composed of mostly the first reporters (Me, Mr. Recaña, Mr. Guitterez, Mr. Estrada, and Mr. Pacis). At first, I thought it was nothing more than a playful competition, but once we started to build and plan, I realized that we were already practicing decision-making under pressure. Each of us shared ideas on how to structure the tower, but eventually we had to decide which design would give us the best chance of success. What followed was an actual application of evaluating alternatives, assigning roles, and implementing a decision in a short amount of time. In the end, we made what we considered a sub-par tower compared to our expectations, yet to our surprise, after the deliberation of our professor and the reporters, our group was announced the winner and we were rewarded with chicharon. This may seem like a light moment in class, but for me it showed that the principles being taught to us were not just words on paper but lessons we could live through.

The second group explained that decision-making reduces risk, increases efficiency, and improves accountability. Looking back at the activity, I clearly saw these aspects. When we made the choice of what tower design to follow, we reduced the risk of wasting time debating endlessly. By deciding early, our efficiency improved since we immediately knew what tasks needed to be done. At the same time, accountability was clear because we each accepted the role we were given, whether it was cutting, taping, or assembling the structure. This simple experience mirrored the lesson that proper decision-making provides direction to a group. They also discussed the 7-step decision-making process. First was identifying the problem, which in our case was figuring out how to make a tall and sturdy tower with limited resources. Then came gathering information, where we exchanged ideas and sketches. We identified alternatives like different base shapes and types of supports. We evaluated them according to whether they would be cost-effective with the materials, time-consuming given the time limit, and if the group could agree on the design. Once we agreed, we made the decision and immediately implemented it by building. Finally, the review of the decision happened when the professors and reporters gave feedback on our tower. For me, this framework became clear not because I read it in a book but because I saw it unfold in the activity.

Another part of their report emphasized the different ways to decide: rational, bounded rationality, intuitive, creative, and ethical. I found it interesting that these were also visible in our group. Some of us were rational and wanted to list the steps carefully, others used intuition by making quick suggestions, and some showed creativity by trying unique designs to stabilize the base. It was evident that people approach decisions differently, and the role of an engineer manager is to bring these approaches together for the benefit of the group. The group also introduced quantitative models for decision-making such as the Analytic Hierarchy Process (AHP), PERT/CPM, and Linear Programming. These were advanced and data-driven methods which I know are vital in real engineering projects. Although we did not use them in our tower activity, I understood their importance in actual industries where wrong decisions cost more than just losing in a classroom competition. They serve as a reminder that the decisions of an engineer manager must not only be creative but also grounded on solid data.

In addition to decision-making, their report discussed organizational structure planning at various management levels: top, middle, and lower. As I reflected on our group during the activity, I saw that we unknowingly practiced this structure. A few of us acted as top-level by setting the direction, others took middle-level roles by coordinating, and the rest executed the work like lower-level management. Even in such a short activity, these levels were necessary to succeed, showing me that organization is a natural part of group tasks. The second part of their report was focused on Planning. They explained that planning involves defining missions and goals, analyzing environmental forces, identifying threats and opportunities, evaluating resources, formulating plans, implementing them, and later evaluating the results. Planning matters because it provides direction, reduces uncertainty, helps with coordination, ensures that resources are used well, fosters innovation, and improves competitive strength. This resonated with me as I remembered how we defined our mission of building a tower, analyzed the forces around us such as time and materials, and organized our limited resources. Without planning, we would not have even produced a standing tower. They also explained that plans can be classified in different ways: by content (strategic, tactical, operational), by time horizon (short and long range), by functional area (marketing, production, finance, HR), and by frequency of use (standing or single-use). Our tower was an example of a single-use plan designed only for that activity, but it made me realize that the same principles apply in real organizations. What matters is knowing which type of plan is suited for the situation.

As I reflect on this second report and activity, I can confidently say that the lessons of decision-making and planning are lessons I will carry forward. They are not only for big companies or complex projects but also for small group activities, family decisions, and even personal goals. The Twin Straw Tower and the chicharon prize may have been small in the grand scheme of things, but the knowledge I gained through them was significant. It reminded me that as an aspiring engineer manager, every small activity is a training ground for the future. The frameworks of decision-making and planning that we practiced that day will serve as the foundation for the much bigger responsibilities we will face in our professional lives.