

Instrumentation II BCT / BEX / BEL – III/I
Chapter - 10
Case Study

Examples chosen from local industrial situations with particular attention paid to the basic measurement requirements, accuracy, and specific hardware employed environmental conditions under which the instruments must operate, signal processing and transmission, output devices:

- a) Instrumentation for a power station including all electrical and non-electrical parameters.
- b) Instrumentation for a wire and cable manufacturing and bottling plant
- c) Instrumentation for a beverage manufacturing and bottling plant
- d) Instrumentation for a complete textile plant; for example, a cotton foil from raw cotton through to finished dyed fabric.
- e) Instrumentation for a process; for example, an oil seed processing plant from raw seeds through to packaged edible oil product.
- f) Instruments required for a biomedical application such as a medical clinic or hospital.
- g) Other industries can be selected with the consent of the subject teacher.

Preliminary

1. All students must team up for the case study and it is recommended to form a group of four to six students in a group. Once formed, the group cannot be reshuffled.
2. The group will take a request letter from the department. However, before approaching to an organization, students need to bring the responsible person's name and post for issuing the letter. The letter must be addressed accordingly.
3. The duration for the case study is for a month from the date of presentation. You need to submit the report. Apart from the new recommended design, you need to present the cost benefit analysis of the project.

During Visit

1. You need to understand the current process control system of the visited organization and describe the same in your own word in the report. List all the variables that are included in the process control system.
2. The systematic approach to understand the system must be presented with necessary block and detailing diagrams, if it is required.
3. Interview managers and the personnel who are directly involved in the current system and get to know the merits and demerits of the system.
4. Learn more from users and consumers who are directly participating and using the product of the visited organization. Comment on the product and recommend better option for the product in the present context, if you feel its need.
5. List down all the requirements needed to go for the improvised system.
6. Mention the cost of the current system.
7. Compare it to the latest system available in the market.

After Visit

1. Think and recommend the extra mechanism to provide a better solution the current problem.
2. Draw the block diagram of the newly recommended system. How does the current system adjust the demerits discussed in item no 3 of during visit.
3. Include how the cost varies and what additional benefit you get with the newly proposed system in place.
4. Did you face a difficulty to go for the case study? How do you relate this with the real life situation?
5. Recommend what you feel like.
6. On the basis of above prepare a report on the case study.

Report Contents:

1. Cover page- Topic: Case Study of Kepy Cement
2. Preface
3. Acknowledgement
4. Table of Content
5. Abstract
6. Introduction
7. Objectives of the study
 - a. To study the existing operation of the Kepy cement.
 - b. To study the technology used and technology gap.
8. Operation of Existing system
9. Block diagram of the system
10. Explanation of the block diagram
11. General Problems of the industry
12. Recommendation with proposed block diagram
13. Conclusion
14. References

Quires for kepy Cement

1. About the Kepy Cement
2. Different types of Cements
3. Composition of cement
4. Operation of existing system such as crushing, raw mill , grinding, packaging of cement with drawing of layout of cement production system
5. About Cement storage
6. About problems of industry- E.g. Pollution related, human hazards related & etc.
7. For example
 - Study about the equipment used for air pollution
 - Study about block diagram of recommended system for pollution control

Note: Involve actively on interviewing the resource person of Kepy cement & take references from websites (eg: www.kepycement.com) & journals (eg: The production process and technology used in cement production in Nepal)