**Assignment 2**

**Deadline: 20th Nov 2021**

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| Course Name: Introduction to Operations Management | Student’s Name: |
| Course Code: MGT311 | Student’s ID Number: |
| Semester: Ist | CRN: |
| Academic Year: 1442/1443 H | |

**For Instructor’s Use only**

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| Instructor’s Name: | |
| Students’ Grade: Marks Obtained/Out of | Level of Marks: High/Middle/Low |

**Instructions – PLEASE READ THEM CAREFULLY**

* The Assignment must be submitted on Blackboard (**WORD format only**) via allocated folder.
* Assignments submitted through email will not be accepted.
* Students are advised to make their work clear and well presented, marks may be reduced for poor presentation. This includes filling your information on the cover page.
* Students must mention question number clearly in their answer.
* Late submission will NOT be accepted.
* Avoid plagiarism, the work should be in your own words, copying from students or other resources without proper referencing will result in ZERO marks. No exceptions.
* All answered must be typed using **Times New Roman (size 12, double-spaced)** font. No pictures containing text will be accepted and will be considered plagiarism).

Submissions without this cover page will NOT be accepted

**Learning Outcomes:**

* Understand the concept of Batch Production Process.
* To manage the level of Inventory.
* To take the decision of New product Development.
* How to reduce waste in the Production Process.

**Case Study**

**The Company**

The Lew-Mark Baking Company is located in a small town in western New York State.

The bakery is run by two brothers. Lew and Mark, who formed the company after they

purchased an Archway Cookie franchise. With exclusive rights in New York and New Jersey,

it is the largest Archway franchise. The company employs fewer than 200 people, mainly blue-collar workers, and the atmosphere is informal.

**The Product**

The company’s only product is soft cookies, of which it makes over 50 varieties. Larger

companies, such as Nabisco, Sunshine, and Keebler, have traditionally produced biscuit cookies,

in which most of the water has been baked out, resulting in crisp cookies. Archway cookies have

no additives or preservatives. The high quality of the cookies has enabled the company to develop a strong market niche for its product.

**The Customers**

The cookies are sold in convenience stores and supermarkets throughout New York and

New Jersey. Archway markets its cookies as “good food” no additives or preservatives and this

appeals to a health-conscious segment of the market. Many customers are over 45 years of age,

and prefer a cookie that is soft and not too sweet. Parents with young children also buy the

cookies.

**The Production Process**

The company has two continuous band ovens that it uses to bake the cookies. The production

process is called a batch processing system. It begins as soon as management gets orders from

distributors. These orders are used to schedule production. At the start of each shift, a list of the

cookies to be made that day is delivered to the person in charge of mixing. That person checks

a master list, which indicates the ingredients needed for each type of cookie, and enters that

information into the computer. The computer then determines the amount of each ingredient

needed, according to the quantity of cookies ordered, and relays that information to storage silos

located outside the plant where the main ingredients (flour, sugar, and cake flour) are stored. The

ingredients are automatically sent to giant mixing machines where the ingredients are combined

with proper amounts of eggs, water, and flavorings. After the ingredients have been mixed, the

batter is poured into a cutting machine where it is cut into individual cookies. The cookies are

then dropped onto a conveyor belt and transported through one of two ovens. Filled cookies, such as apple, date, and raspberry, require an additional step for filling and folding.

The nonfilled cookies are cut on a diagonal rather than round. The diagonal-cut cookies

require less space than straight-cut cookies, and the result is a higher level of productivity. In

addition, the company recently increased the length of each oven by 25 feet, which also increased the rate of production.

As the cookies emerge from the ovens, they are fed onto spiral cooling racks 20 feet high

and 3 feet wide. As the cookies come off the cooling racks, workers place the cookies into boxes

manually, removing any broken or deformed cookies in the process. The boxes are then wrapped, sealed, and labeled automatically.

**Inventory**

Most cookies are loaded immediately onto trucks and shipped to distributors. A small

percentage is stored temporarily in the company’s warehouse, but they must be shipped shortly

because of their limited shelf life. Other inventory includes individual cookie boxes, shipping

boxes, labels, and cellophane for wrapping. Labels are reordered frequently, in small batches,

because FDA label requirements are subject to change, and the company does not want to get

stuck with labels it can’t use. The bulk silos are refilled two or three times a week, depending

on how quickly supplies are used.

Cookies are baked in a sequence that minimizes downtime for cleaning. For instance, light-colored cookies (e.g., chocolate chip) are baked before dark-colored cookies (e.g., fudge), and

oatmeal cookies are baked before oatmeal raisin cookies. This permits the company to avoid

having to clean the processing equipment every time a different type of cookie is produced.

**Quality**

The bakery prides itself on the quality of its cookies. A quality control inspector sample

cookies randomly as they come off the line to assure that their taste and consistency are

satisfactory, and that they have been baked to the proper degree. Also, workers on the line are

responsible for removing defective cookies when they spot them.

**Scrap**

The bakery is run very efficiently and has minimal amounts of scrap. For example, if a

batch is mixed improperly; it is sold for dog food. Broken cookies are used in the oatmeal

cookies. These practices reduce the cost of ingredients and save on waste disposal costs. The

company also uses heat reclamation: The heat that escapes from the two ovens is captured

and used to boil the water that supplies the heat to the building. Also, the use of automation

in the mixing process has resulted in a reduction in waste compared with the manual methods

used previously.

**New Products**

Ideas for new products come from customers, employees, and observations of competitors’

products. New ideas are first examined to determine whether the cookies can be made with

existing equipment. If so, a sample run is made to determine the cost and time requirements. If

the results are satisfactory, marketing tests are conducted to see if there is a demand for the

product.

**Potential Improvements**

There are a number of areas of potential improvement at the bakery. One possibility would

he automates packing the cookies into boxes. Although labor costs are not high, automating the

process might save some money and increase efficiency. So far, the owners have resisted

making this change because they feel an obligation to the community to employ the 30 women

who now do the boxing manually? Another possible improvement would be to use suppliers who

are located closer to the plant. That would reduce delivery lead times and transportation costs,

but the owners are not convinced that local suppliers could provide the same good quality. Other

opportunities have been proposed in recent years, but the owner rejected them because they

feared that the quality of the product might suffer.

**Questions**

1. Briefly describe the cookie production process. (1 Mark) 150 words

2. What are two ways that the company has increased productivity? Why did increasing the

length of the ovens results in a faster output? (1 Mark) 150 words

3. Do you think that the company is making the right decision by not automating the packing

of cookies? Explain your reasoning. What obligation does a company have to its employees

in a situation such as this? (2 Marks) 200 Words

4. What factors cause Lew-mark to carry minimal amounts of certain inventories? What

benefits result from this policy? (1 Marks) 100 words