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Md. Mofassel Hossain (MOF)

Lecturer Department of Management,

School of Business and Economics, North South University

**Submitted by:** Group 2

Name	ID
Ayesha Momtaz Maliha (Group Leader)	2012640030
Nadia sultana	2012901030
Sadia Jahan	2011748030
Nishat Tasnim	2013144030
Mohammad Tanvir Zakaria	1831699030
Mohammad Fardus Amin	1811932630
Mahmuda Akter Labone	1922249630

## Project based on Biscuit company

**Company Name: Delightful Bites**

*Delightful Bites*



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## Acknowledgement

The successful completion of the report is owed to the collective efforts of many individuals, whose contributions were indispensable.

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Lastly, we would like to acknowledge the exceptional dedication of our team members, who worked diligently to bring this report to fruition. Their hard work and commitment have been instrumental in its completion.

## Executive Summary

Delightful Bites Biscuit company will manufacture high-quality biscuits and baked items. The company's main priorities will be taste, innovation, and customer satisfaction, earning a reputation for delivering delightful treats. This company factory will be equipped with advanced machinery and a skilled workforce and also will ensure consistent quality and timely delivery. Delightful Bites will offer a diverse range of biscuits that will cater to various preferences and dietary needs. Sustainability will be a key focus, sourcing ingredients responsibly and utilising eco-friendly packaging materials.

We can assure that the brand will create a strong presence in the Bangladeshi market, with distribution channels reaching retail stores, supermarkets, and online platforms, and will be successful in building a loyal customer base.

Also hope that Delightful Bites Biscuit Factory will be a reputable and successful company known for its high-quality biscuits and commitment to customer satisfaction. It will be poised for further growth and success in the competitive industry. The company will continue to prioritise the production of top-notch biscuits, ensuring that they meet and exceed customer expectations.

## Introduction

Due to its favorable agroclimatic conditions and abundant natural resource base, Bangladesh is one of the world's top producers of a variety of commodities. In various regions of the nation, manufacturing biscuits is a common practice. Despite the development of contemporary, highly automated, and large-capacity biscuit manufacturing facilities, a sizable portion of the population, particularly in semi-urban and rural areas, still favors freshly baked biscuits from neighborhood bakeries due to their affordability and variety. The usual local palate might also be

catered to by these firms. Wheat and milk are two of the key ingredients in biscuits and other cookies.

## 1) Overview of a report

To their consumers, Delightful Bites will offer a variety of cookies and biscuits.

They are open to taking over a biscuit manufacturing business.

They have a strategy in place to carry out their goal and vision for the company.

### a) Business Profile-

*Delightful Bites*



**Form-** Varieties in sizes and tastes of cookies and biscuits.

**Materials-** Wheat Flour (Maida), starch, vegetable fat, salt, soy flour, soda, colors, preservatives, packaging material

**Distributors-** Retailers, departmental store, local grocery shops

**Users-** People

- b) **Mission-**Our mission is to make mouthwatering biscuits to satisfy our consumer and make their every moment delightful. In order to provide products that satisfy expectations, we are committed to making use of the best ingredients, creative recipes, and effective procedures.
- c) **Vision-**Our vision is to establish ourselves as a renowned biscuit company with a reputation for excellent flavor, a wide range of products, and a dedication to quality. We work hard to consistently develop and bring customers fresh flavors and styles.
- d) **Strategy-**Running a biscuit factory like Delightful Bites can be a challenging yet rewarding experience. To ensure success, it's important to have a strong strategy in place. Some key strategies include:
  - ✓ **Quality control:** Consistent product quality is essential to maintaining customer satisfaction, so it's important to have a strong quality control program in place. This may involve regular inspections, quality testing, and employee training.
  - ✓ **Safety program:** A safety program is essential to maintaining a safe working environment for your employees. This may involve regular safety training, safety inspections, and the implementation of safety protocols.

- ✓ **Innovative flavors:** To keep customers interested, it's important to explore new and innovative flavors. This may involve conducting market research, experimenting with new recipes, and collaborating with food scientists.
- ✓ **Marketing and advertising:** Finally, investing in marketing and advertising can help increase brand awareness and drive sales. This may involve developing a marketing strategy, creating advertising campaigns, and leveraging social media platforms.

By following these strategies, we help to ensure the success of your biscuit factory.

## 2) Scope of work:

This report's main goal is to explain basic operation of Delightful Bite. This section contains information on the company's activities as well as its history. In light of this, the research covers objectives, plans, competition and market evaluations, future projections, quality management, supply chain management, inventory control, and an examination of the environmental effect. It also contains forecasts and plans for the future.

## 3) Limitations

Here are few of the limitations that Delightful Bites face. By being aware of these challenges and working to address them, we ensure the success of our factory.

- ✓ **Limited resources:** Running a biscuit factory can be expensive, and it requires significant resources in terms of funding, equipment, and personnel. Acquiring the necessary resources can be a challenge, particularly for small-scale or new factories. Limited resources can also impact the quality of the final product, if the factory is unable to invest in high-quality ingredients or equipment.
- ✓ **Regulatory requirements:** Biscuit factories are subject to strict regulatory requirements, particularly around food safety. These regulations can vary depending on the country or region where the factory is located, and non-compliance can result in fines, legal action, or even the closure of the factory. Staying up to date with regulatory requirements and ensuring compliance can be a significant challenge.
- ✓ **Dependence on raw materials:** Biscuit factories depend on a steady supply of raw materials, such as flour, sugar, and butter. However, the availability and price of these materials can be subject to fluctuations based on factors such as weather, crop yields, and global market conditions. This makes it difficult to maintain a consistent supply of raw materials and to manage costs.
- ✓ **Competition:** The biscuit industry is highly competitive, with many established manufacturers and new entrants vying for market share. Competing on price alone can be challenging, particularly for smaller factories that may not have the same economies of scale as larger manufacturers. As a result, it's important that we differentiate our product through quality, innovation, or other factors to remain competitive.

# Operational Plan

## Strategic Design

- ✓ **Provide healthy ingredients:** We will ensure that the ingredients for the biscuits are fresh and healthy. We will pick our supplier very carefully who will provide us with the ingredients like egg and flour, which has no harmful chemicals or petrified. We will use food colors to decorate biscuits which will be healthy.
- ✓ **Some new addition:** We will serve dry and fruit cakes besides biscuits. The biscuits will be in different shapes and different designs. Also, we will take customized orders in the demand of the customers.
- ✓ **Less price than competitors:** Our strategy will be to provide the biscuits at a lower price than the other competitors. It will help us to grab customers' attention, and one satisfied customer can bring more customers by reviewing our biscuits, dry cakes, etc. Their review will help the business to expand more.
- ✓ **Special offer:** Our company is relatively new so we need to be recognized. Therefore, we will give a special discount for the first purchase. In addition, customers can buy, after tasting, a piece of biscuit, whichever they want. Also, they will be able to order customized biscuits and dry cakes.
- ✓ **Hiring effective salesperson:** We will hire employees who will have good communication skills so that they can handle the customers. More customers will bring more benefits to the company.
- ✓ **Being courteous while dealing with customers:** It is vital to respect the customers. Because if the customers are disappointed by the employee's expression it will harm the business. Even we will have a suggestion box where our customers can give suggestions or complain if they have any about the purchase.

Overall, we will not compromise on the quality of the biscuits. We will always prioritize quality over quantity so our customers can trust our company.

## Demand forecasting

The business will use naive forecasting as its forecasting technique. Inventory is ordered from their suppliers on a monthly basis, and any inventory that is still available at the end of the next month is carried over to the following month. Depending on urgency, each Delightful Bite shop places an order with the manufacturer for the number of cookies it needs. The order cycle typically takes 5 to 7 days. The Delightful Bite factory's order processing software receives all the data on the size of each outlet's orders directly, and utilizing that data, it creates a top sheet that is then delivered to the manufacturing division. The production manager then determines how many raw materials and final products are required for manufacturing each day. As a result, they daily deduct the quantity of inventory utilized for production, and when they detect a shortage, they must restock the inventory using naive forecasting.

They can make 500 kg of cookies in a single shift. According to the management, they can produce two shifts of cookies every day, thus their actual capacity is 1000 kg of cookies. However, occasionally they have to replenish such inventories within the time frame again when they suspect there may be a shortage of any particular item. Despite being a free procedure, it may always result in significant inefficiencies and high levels of accuracy.

We estimate the actual demand for 2023 by multiplying the predicted demand by (1000 kg per day x 250 working days per month), which is 250 000 kg in 2023. This approach of forecast demand calculation is known as the exponential smoothing method.

Exponential Smoothing Formula	$f(t)=f(t-1) +\alpha[A(t-1) -F(t-1)]$ $\text{Alpha}= 0.1$		
Year	Actual	Forecast	
2021	210000		
2021	220000	204597	
2023	250000	207337	

The corporation might discover a more precise estimate of the product's monthly demand by using exponential and time-series projections, and it could prepare appropriately to keep up its strategic objectives.

## Capacity Decision

A match between Delightful Bites' long-term supply capacities and the anticipated amount of long-term demand is the aim of capacity design. Delightful Bites will make plans for capacity design because they need to prepare for changes in demand, technology, the environment, and dangers or opportunities that may arise. There will be an imbalance in capacity if the desired and actual levels of capacity differ. Both their overcapacity and under-capacity result in high operational costs, resource strain, and a decline in client base.

- ✓ Capacity decisions have a meaningful impact on the organization's (Delightful Bites) ability to meet future product and service demand; capacity essentially caps the output rate that is feasible. They plan to estimate 500 ready-to-serve packages.
- ✓ The running costs of Delightful Bites will be impacted by capacity decisions. In order to keep running costs to a minimum, the capacity will be set to serve 1000 people per day, while demand will be roughly 700–800 people.
- ✓ In these situations, it can be decided to try to strike a balance between the costs of overcapacity and undercapacity. 3. Capacity is typically a key factor in determining their initial pricing. The cost will increase as a productive unit's capacity increases.
- ✓ Capacity decisions may need a long-term commitment of resources, and once they are put into place, it may be difficult or impossible to change them without incurring significant expenditures.



- ✓ Capacity decisions may impact Delightful Bites' ability to compete. If they have extra capacity or the ability to build capacity fast, this could operate as a barrier to entrance for other companies. When they have a large capacity, it might alter delivery time and provide them a competitive edge.
- ✓ Capacity impacts how simple it is to operate that specific company. Management of Delightful Bites is easier when capacity is appropriate than when it is not.
- ✓ Capacity considerations are becoming more important and difficult due to globalization.
- ✓ The ambiguity surrounding capacity requirements is increased by distant markets and dispersed supply chains. But they'll have a good capacity strategy in place.
- ✓ It's important to prepare ahead for capacity decisions because they frequently need significant financial and other resources. They will have a specific source of emergency resources and financial support.

## Process Design

As our company's product is biscuits, which is a baked snack in a variety of sizes, shapes, flavors, and textures. Biscuits are very popular among all ages people due its variety flavors and taste. As our mission is to satisfy our consumers with premium, mouthwatering biscuits. So, process design really important to ensure this product's promised taste and texture.

1. **Raw materials-** First the Inputs such flour, sugar, fats, agents for leavening, flavors, and additions should be of good quality. To ensure the ingredients freshness and quality, we have to store them correctly in specified spaces.
2. **Mixing-** Measure the ingredients properly according to the recipe and combine the dry ingredients separately. To create a dough, gently include the liquid ingredients with automated mixing equipment. Then give the dough a rest by moving it to resting chambers.
3. **Forming and Baking-** In order to create the desired biscuit forms, use biscuit forming equipment. Place the freshly created biscuits on baking sheets. To get the required texture, color, and moisture levels, bake the biscuits for a particular amount of time.
4. **Cooling & Packaging-** Transfer biscuits to cool on cooling racks after baking. The biscuits' ultimate texture and crispness are enhanced by cooling. After the biscuits have cooled, examine their quality and eliminate any that are unsatisfactory. Pack the biscuits with wax paper because wax paper is moisture proof it will keep the texture intact then into the boxes using manual system. Then, Labels, batch codes, and other relevant information into the packing.
5. **Quality control-** This is a very important step in manufacturing. We have to keep an eye on everything that happens throughout production, from the raw ingredients to the finished product. To assure product uniformity and meeting quality standards, for that conduct routine testing and inspections.

## Inventory Management

Inventory management typically comes into play after the production process in an operation plan. Once goods are produced or purchased, inventory management focuses on efficiently storing, tracking, and controlling the inventory levels to meet customer demands while minimising costs and maximising profitability. For maintaining this system, we will be using a perpetual inventory counting system.

### Effective inventory management

For effective inventory management we need to do a reliable forecast of demand, track of inventory and knowledge of lead time.

In the Delightful Bite Factory, the raw materials will be stored in a special storehouse and organised on different shelves based on their category. The storehouse will contain various raw material inventories, including eggs, peanuts, butters, mustard seeds, and more. These raw materials will be considered dependent demand inventories because their demand will be directly dependent on the production needs. The demand for these raw materials will be certain and predetermined.

In the storehouse, there will be an employee who will be responsible for managing the inventory. By following a perpetual inventory system, they will monitor the current quantities of each item continuously. When workers from the production team will require raw materials for production, they will visit the storehouse and take the necessary items. The employee in the storehouse will keep track of the removal of raw materials from the inventory, ensuring that the quantities are accurately updated.

Some raw materials will need to be resupplied daily, weekly, or monthly. The demand for raw materials will be different from each other. For example, due to a high usage rate, approximately 12000 eggs will be needed on a daily basis. On the other hand, the demand for other raw materials may not be as high.

In this process of keeping track of our inventory, we can get knowledge about our lead time . These factors will influence the determination of the Reorder Point (ROP) for each material. By closely monitoring the demand, usage rate, lead time, and maintaining appropriate reorder points, the Delightful Factory will aim to ensure a smooth supply of raw materials for its production process and meet the demand for its 20plus types of cookies, which will serve as the independent demand inventories.

## Supply Chain

To become a successful business, we need to make and maintain a highly efficient and cost-effective supply chain, considering the following strategies:

**Supply Chain Mapping:** Map out the entire supply chain process, from sourcing raw materials to delivering the final product to customers. Identifying all the stakeholders, including suppliers, manufacturers, distributors, and retailers.

**Supplier Management:** Developing strong relationships with reliable suppliers who provide high-quality materials at competitive prices and negotiating favourable terms, such as bulk discounts, longer payment terms, or exclusivity agreements.

**Demand Forecasting:** Using historical data, market trends, and customer insights to accurately forecast demand and collaborating closely with sales, marketing, and customer service teams to gather relevant information to avoid stockouts and excess inventory by aligning production and procurement with forecasted demand.

**Inventory Optimization:** Implementing inventory management systems to track stock levels, turnover rates, and lead times and maintaining just-in-time (JIT) or lean inventory practices to minimize excess inventory and storage costs.

**Logistics and Transportation:** Optimizing transportation routes and modes to reduce costs and improve delivery speed to consolidate shipments, utilize intermodal transportation, or negotiate volume discounts with logistics providers.

**Process Streamlining:** Identifying and eliminating bottlenecks, inefficiencies, and unnecessary steps in the supply chain by implementing lean manufacturing principles to reduce waste, improve productivity, and enhance quality.

**Collaboration and Communication:** Fostering collaboration and communication among all stakeholders in the supply chain and establishing clear communication channels and protocols to quickly address issues, resolve disputes, and share updates.

**Risk Management:** Identifying potential risks and developing contingency plans to mitigate disruptions in the supply chain by diversifying suppliers, implementing backup plans, and maintaining safety stock for critical components.

## Conclusion

Running a biscuit factory like Delightful Bits is a complex process that requires careful management of resources, personnel, and regulatory requirements. The limitations that can impact our factory operations are many, and can include limited funding, equipment, and personnel, strict regulatory requirements, dependence on raw materials, and competition from other manufacturers. These challenges can make it difficult to maintain consistent quality, manage costs, and remain competitive.

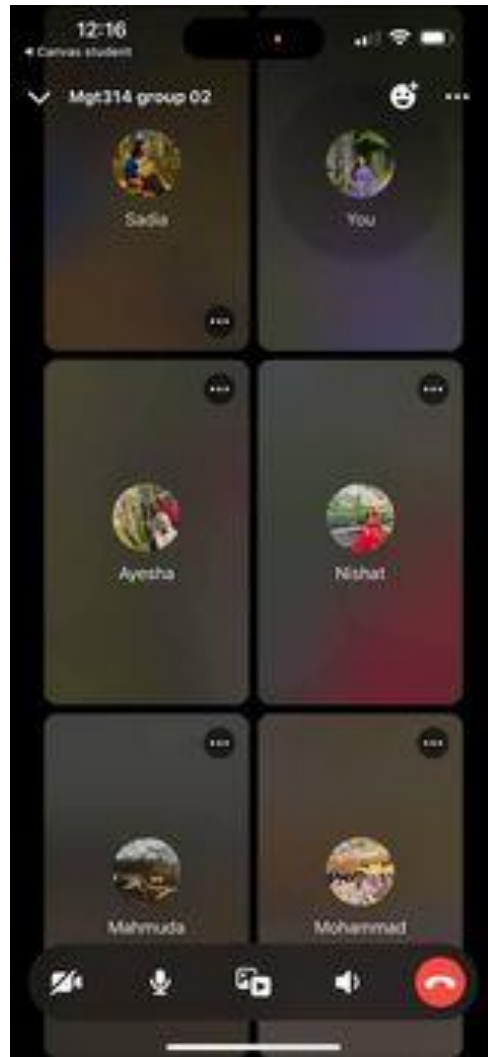
However, by focusing on key strategies such as quality control, implementing a safety program, exploring new flavors, and investing in marketing and advertising, our factory can help overcome the limitations.

In conclusion, while running such factory can be challenging, by focusing on the strategies, we remain aware of the limitations that can impact operations, factory operations can help ensure the success of the business. By staying up to date with regulatory requirements, investing in quality control, and being innovative in the approach, production and marketing, Delightful Bites can thrive and grow in a competitive market.

## Appendix

### Group Meeting Photos





## Contribution Table

Name & ID	Work Distribution
Ayesha Momtaz Maliha (Group Leader) ID-2012640030	<ul style="list-style-type: none"> <li>▪ Business Profile</li> <li>▪ Capacity Design</li> <li>▪ Compiling</li> </ul>
Nadia sultana ID: 2012901030	<ul style="list-style-type: none"> <li>▪ Executive summary</li> <li>▪ Inventory Management</li> </ul>
Sadia Jahan ID:2011748030	<ul style="list-style-type: none"> <li>▪ Mission &amp; Vision</li> <li>▪ Process design</li> </ul>
Nishat Tasnim ID:2013144030	<ul style="list-style-type: none"> <li>▪ Acknowledgement</li> <li>▪ Strategic design</li> </ul>
Mohammad Tanvir Zakaria ID: 1831699030	<ul style="list-style-type: none"> <li>▪ Strategy</li> <li>▪ Limitations</li> <li>▪ Conclusion</li> </ul>
Mohammad Fardus Amin	<ul style="list-style-type: none"> <li>▪ Demand Forecasting</li> </ul>

ID:1811932630	▪ Scope of work
Mahmuda Akter Labone ID:1922249630	▪ Supply Chain Management