

Module 13: Business Model, Financial Aspect and Cost Management of Sustainability

13.Introduction

13.1 Learning outcomes:

After completion of this course the students will be able to,

- i. Understand the concept of sustainable business model.
- ii. Understand the characteristics of sustainable business model.
- iii. Describe different examples of emerging sustainable business models.
- iv. Understand sustainable finance.
- v. Discuss financial aspects of sustainability and using it as a mode of achieving sustainability.
- vi. Identify and give examples of each of the basic cost categories.
- vii. Prepare an income statement including calculation of the cost of goods sold.
- viii. Prepare a schedule of cost of goods manufactured.
- ix. Understand the differences between variable costs and fixed costs.
- x. Understand the cost impact on sustainability.
- xi. Prepare and interpret a cost-volume-profit (CVP) graph.
- xii. Determine the break-even point.

13.2 Introduction

Sustainable business model (SBM) can be treated as more mature approach to sustainable business practices than strategy. It is assumed that changes that are made to implement sustainability issues at strategic level and in processes result in reshaping the business model frameworks.

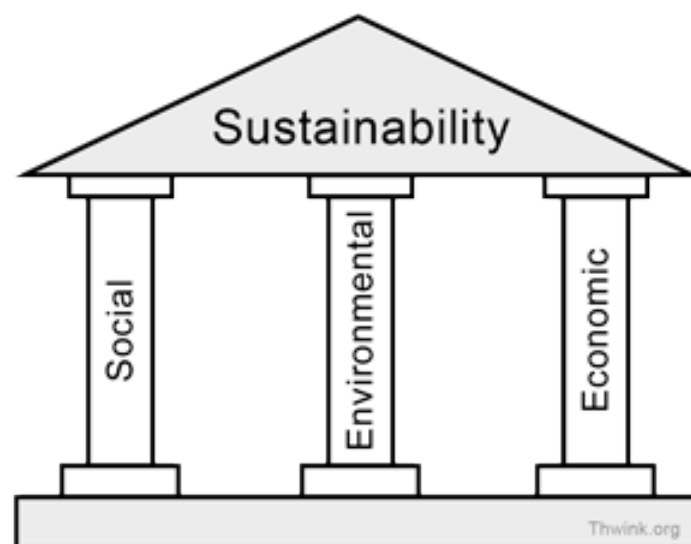
Sustainable finance refers to any form of financial service integrating environmental, social and governance (ESG) criteria into the business or investment decisions for the lasting benefit of both clients and society at large.

Sustainable Cost management is analyzed within the activities of business to realize efficiently and effectively use or resources, to elevate market value and carrying to future. Moreover,

organizational structure, activities and their effects on the environmental and social costs will be explained here for a business to be sustainable. In order to develop sustainability of textile value chain and RMG, it is mandatory to be familiar with required cost allocations. And estimation of BEP is necessary for a particular sustainable textile project.

13.3 Sustainability:

Sustainability focuses on meeting the needs of the present without compromising the ability of future generations to meet their needs. The concept of sustainability is composed of three pillars: economic, environmental, and social—also known informally as 3P (profits, planet, and people).



Economic sustainability is an integrated part of sustainability and means that we must use, safeguard and sustain resources (human and material) to create long-term sustainable values by optimal use, recovery and recycling.

13.4 Business Model

A simplified representation of the elements and the interactions between these elements that the unit employs for value proposition, creation, delivery, and capture. However, since there can be several representations of the same organizational unit, perceptions of the term must be considered that assume an underlying abstract concept that is characteristic of the entity – analogue to capabilities, resources, or strategies, which can be documented in different ways without the document becoming the underlying concept.

13.5 Sustainable Business Model

A business model that incorporates pro-active multi-stakeholder management, the creation of monetary and non-monetary value for a broad range of stakeholders, and which holds a long-term perspective. Sustainable business, or a green business, is an enterprise that has minimal negative impact on the global or local environment, community, society, or economy—a business that strives to meet the triple bottom line. It has made an enduring commitment to environmental principles in its business operations.

Sustainable business models are described with five propositions,

- i. Sustainable value incorporates economic, social and environmental benefits conceptualized as value forms.
- ii. Sustainable business models require a system of sustainable value flows among multiple stakeholders including the natural environment and society as primary stakeholders.
- iii. Sustainable business models require a value network with a new purpose, design and governance.
- iv. Sustainable business models require a systemic consideration of stakeholder interests and responsibilities for mutual value creation.
- v. Internalizing externalities through product-service systems enables innovation towards sustainable business models.”

13.6 Characteristics of a sustainable business model

First, it must be commercially successful – why is this proposition valuable to the customer and how can you deliver at a profit from it?

Second, a sustainable business model is future ready. For instance, it will succeed in a world of rising, volatile energy and commodity prices.

Third, it must be part of a sustainable society. It is not possible to be a sustainable business in an unsustainable economy. All business models rely on particular external conditions; to be called sustainable; those conditions must match with a thriving economy that is delivering social progress within environmental limits. For instance, does the business model enable absolute decoupling of economic growth from environmental damage? Does it rely on nature providing materials or services for free? Does it rely on unfair terms of trade?

13.7 Sustainable Business Model Innovation

Sustainable business model innovation can be described as the processes through which new business models are developed by businesses and their managers; how companies revise and transform their business model in order to contribute to their sustainable development. Sustainable business model innovation can be more easily achieved by identifying the value un captured in current business models, and then turning this new understanding of the current business into value opportunities that can lead to new business models with higher sustainable value.

Examples of Sustainable Business Model

Inclusive Business Models:

Inclusive business models are sustainable businesses that include low-income people along their value chains.

13.8 Financial Aspect of Sustainability

13.8.1 Finance

Finance is a field that is concerned with the allocation of assets and liabilities over space and time, often under conditions of risk or uncertainty. Finance can also be defined as the art of money management.

13.8.2 Sustainable Finance

Sustainable finance refers to any form of financial service integrating environmental, social and governance (ESG) criteria into the business or investment decisions for the lasting benefit of both clients and society at large.

Activities that fall under the heading of sustainable finance, to name just a few, include sustainable funds, green bonds, impact investing, microfinance, active ownership, credits for sustainable projects and development of the whole financial system in a more sustainable way.

The three-pillar base expresses triple responsibility, or as the case may be, triple benefit, which is commonly referred to as “3P—profit, people, planet”. The 3P says businesses should follow the traditional business profits (profit), social (people) and environmental (planet) dimensions.

13.8.3 Using Finance as a Force for Sustainability

Traditional finance focuses on financial return, considering the financial sector separate from both society and the environment. In contrast, sustainable finance considers financial, social and environmental returns in combination.

Sustainable finance has gone through different stages over the last few decades. The focus is gradually shifting from short-term profit towards long-term value creation.

Financial and non-financial firms traditionally adopt the shareholder model, with profit maximization as the main goal. A first step in sustainable finance (1.0 in Table 1) would be for financial institutions to avoid investing in companies with very negative impacts, such as tobacco, cluster bombs or whale hunting. Indeed, some firms are starting to include social and environmental considerations in the stakeholder model (Sustainable Finance 2.0).

But to move ahead, it needs to adopt a stakeholder approach to finance, with benefits accruing to the wider community rather than just shareholders. While financial firms have started to avoid (very) unsustainable companies from a risk perspective (Sustainable Finance 1.0 and 2.0), the frontrunners are now increasingly investing in sustainable companies and projects to create long-term value for the wider community (Sustainable Finance 3.0).

Table 1: Framework for Sustainable Finance

| Sustainable Finance Typology | Value created | Ranking of factors | Horizon |
|------------------------------|-------------------|------------------------|-------------|
| Sustainable Finance 1.0 | Shareholder value | $F > S \text{ and } E$ | Short term |
| Sustainable Finance 2.0 | Stakeholder value | $T = F + S + E$ | Medium term |
| Sustainable Finance 3.0 | Common good value | $S \text{ and } E > F$ | Long term |

Note: F = financial value; S = social impact; E = environmental impact; T = total value.

At Sustainable Finance 1.0, the maximization of F is subject to minor S and E constraints.

13.9 Cost Management of Sustainability

13.9.1 Cost Management

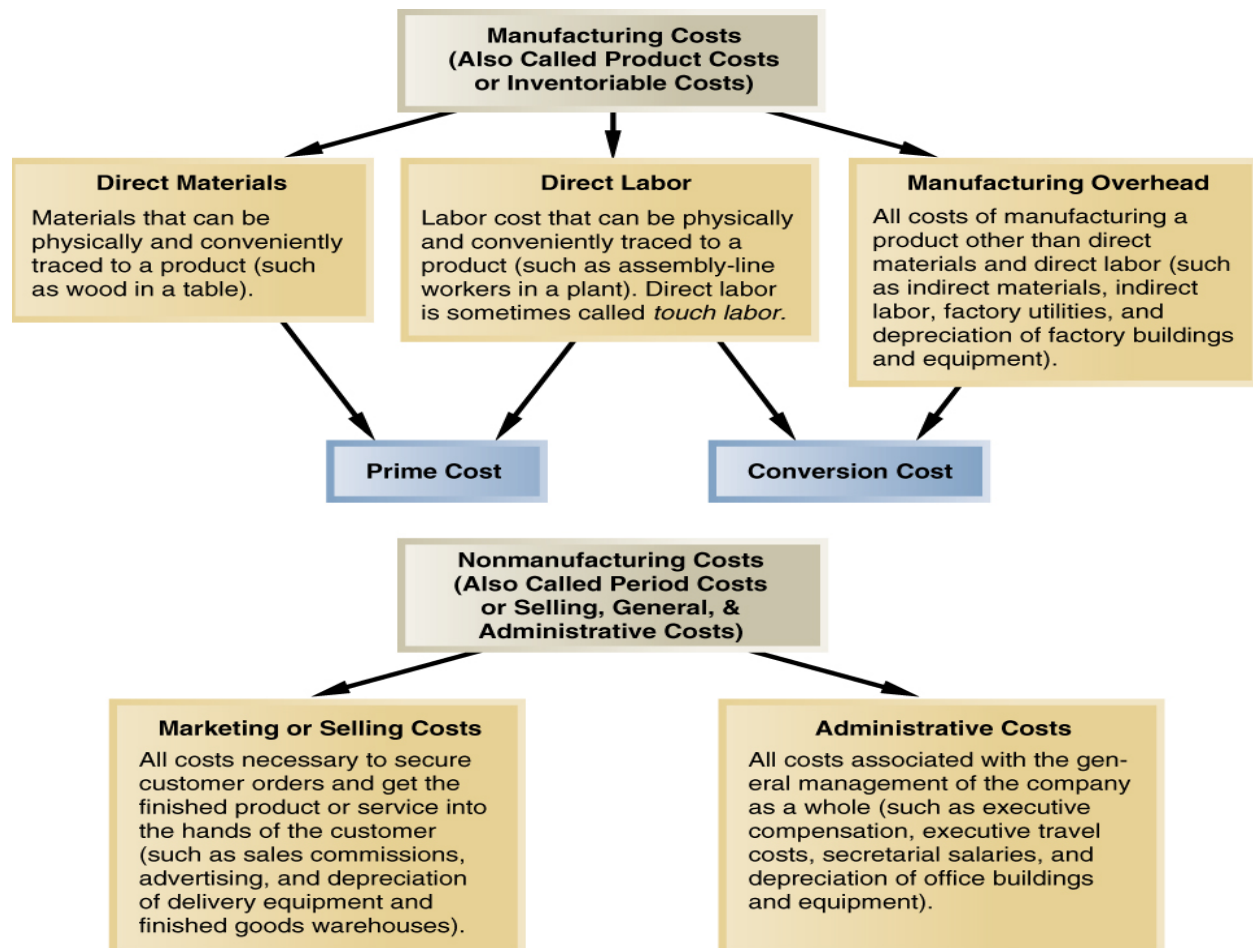
Cost management is a method of reducing operating or production expenses in order to provide less expensive products or services to consumers.

13.9.2 Cost:

Cost is a measurement, in monetary terms, of the amount of resources used for the purpose of production of goods or rendering services.

13.9.3 Cost Concept

13.9.3.1 Elements and Classification of Cost:



- **Direct Material Cost**

All raw materials, either purchased from outside or manufactured in house, that can be conveniently identified with and allocated to cost units. It generally becomes part of the finished product. Example: Cotton used in spinning mills, fabric and accessories used in garments.

- **Direct Labor Cost**

A particular job or process that is incurred by those employees who are engaged in the manufacturing process. Example: operators, workers, helper etc.

Manufacturing Overhead Cost:

- **Indirect Material Cost**

Material which cannot be identified directly that assist the manufacturing process but does not become an integral part of finished goods. Example: Oils and lubricants, stationary material, sand paper etc.

- **Indirect Labor Cost**

Cost which is incurred for those employees who are not engaged in the manufacturing process but only assist. Example: wages paid to foreman/storekeeper, salary of works manager, Accountant/Personnel dept. salaries of factory etc.

13.9.3.2 Calculation of Cost of Goods Manufactured and Cost of Goods Sold:

The following information has been taken from the accounting records of Klear-Seal Corporation for last year:

| | |
|--|-------------|
| Selling expenses | \$140,000 |
| Raw materials inventory, January 1 | \$90,000 |
| Raw materials inventory, December 31 | \$60,000 |
| Direct labor cost | \$150,000 |
| Purchases of raw materials | \$750,000 |
| Sales | \$2,500,000 |
| Administrative expenses | \$270,000 |
| Manufacturing overhead | \$640,000 |
| Work in process inventory, January 1 | \$180,000 |
| Work in process inventory, December 31 | \$100,000 |
| Finished goods inventory, January 1 | \$260,000 |

Finished goods inventory, December 31 \$210,000

Management wants these data organized in a better format so that financial statements can be prepared for the year.

Required:

1. Prepare a schedule of cost of goods manufactured. Assume raw materials consist entirely of direct materials.
2. Compute the cost of goods sold.
3. Prepare an income statement.

Solution:

1.

| Klear-Seal Corporation | | |
|--|----------------|---------------------------|
| Schedule of Cost of Goods Manufactured | | |
| For the Year Ended December 31 | | |
| Direct materials: | | |
| Raw materials inventory, January 1 | \$ 90,000 | |
| Add: Purchases of raw materials | 750,000 | |
| Raw materials available for use | <u>840,000</u> | |
| Deduct: Raw materials inventory, December 31 | <u>60,000</u> | |
| Raw materials used in production | | \$ 780,000 |
| Direct labor | | 150,000 |
| Manufacturing overhead | | <u>640,000</u> |
| Total manufacturing cost | | 1,570,000 |
| Add: Work in process inventory, January 1 | | <u>180,000</u> |
| | | 1,750,000 |
| Deduct: Work in process inventory, December 31 | | <u>100,000</u> |
| Cost of goods manufactured | | <u><u>\$1,650,000</u></u> |

2.

| | |
|---|---------------------------|
| Finished goods inventory, January 1 | \$ 260,000 |
| Add: Cost of goods manufactured | <u>1,650,000</u> |
| Goods available for sale | 1,910,000 |
| Deduct: Finished goods inventory, December 31 | <u>210,000</u> |
| Cost of goods sold* | <u><u>\$1,700,000</u></u> |

*Further adjustments will be made to cost of goods sold in Chapter 5.

3.

| Klear-Seal Corporation Income Statement For the Year Ended December 31 | | |
|---|----------------|--------------------------|
| Sales | | \$2,500,000 |
| Cost of goods sold (above) | | <u>1,700,000</u> |
| Gross margin | | 800,000 |
| Selling and administrative expenses: | | |
| Selling expenses | \$140,000 | |
| Administrative expenses | <u>270,000</u> | <u>410,000</u> |
| Net operating income | | <u><u>\$ 390,000</u></u> |

13.10 Different types of cost allocation from sustainability aspect:

One of the prime requirements of achieving sustainability is to conduct proper cost management.

| Cost classifications | Focus | Sustainability Aspect |
|-----------------------------|--|---|
| Direct materials | purchasing of different non-toxic chemicals in dyeing, finishing and washing. | Protecting environment |
| | | Reducing cost of after processing like ETP, WTP, sludge management. |
| | purchase of fabric, accessories, packaging materials from ISO certified suppliers. | Social: Assurance quality in backward linkage |
| Direct labor | Proper practice of labor law and compliance | Economic: Long term employee retention and productivity improvement |
| | | Social: Better life standard for worker. |
| | | Women empowerment |
| Manufacturing | Proper resource utilization through | Economic. |

| | | |
|------------------------------------|--|---|
| overhead | cost management | |
| Marketing and selling costs | Developing sustainable supply chain | Economic: Cost reduction through value creation. |
| | Capturing emerging market through innovative marketing | Economic: Creating Brand value and exponential growth of existing market. |
| Administrative costs | Green and electronic administrative practice | Economic: Cost minimization by reducing work load. |
| | Condensing the non-performing branches of organogram | Economic: Reduce administrative cost. |

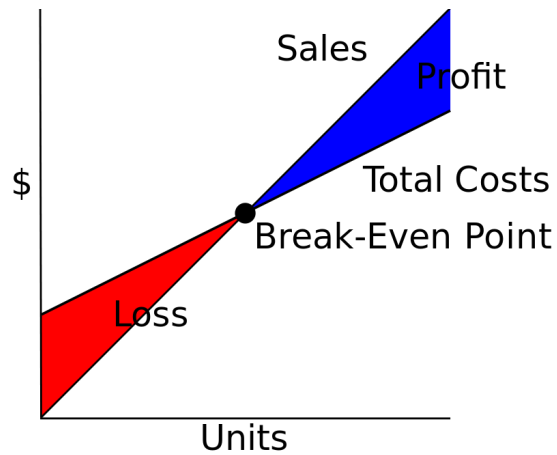
13.11 Cost Volume Profit Analysis

CVP:

CVP analysis is based on a simple model of how profits respond to prices, costs, and volume. This model can be used to answer a variety of critical questions such as what is the company's break-even volume, what is its margin of safety, and what is likely to happen if specific changes are made in prices, costs, and volume.

13.12 Break-even Point (BEP):

The break-even point (BEP) is the point at which total cost and total revenue are equal. In short, all costs that must be paid are paid, and there is neither profit nor loss. In order to calculate BEP, all costs are classified (according to cost behavior) into 2 types: variable cost and fixed cost. It is very important to know the BEP of a business plan to make it sustainable.



13.13 Per Unit Cost

| Behavior of Cost (within the relevant range) | | |
|---|--|--|
| Cost | In Total | Per Unit |
| Variable | Total variable cost changes as activity level changes. | Variable cost per unit remains the same over wide ranges of activity. |
| Fixed | Total fixed cost remains the same even when the activity level changes. | Average fixed cost per unit goes down as activity level goes up. |

Book Reference:

- Principles of Managerial Finance by Lawrence J. Gitman (chapter 1)
- Managerial Accounting by Ray Garrison, Eric Noreen, Peter Brewer (chapter 2, 4, 6)
- Cost Accounting: A Managerial Emphasis by Charles T. Horngren, Srikant M. Datar, Madhav V. Rajan

Multiple Choice Questions:

1. What is the first requirement for a sustainable business model?

- A. Future ready
- B. Commercial success
- C. Part of sustainable society
- D. Brand value

Ans. A

2. The process through which companies revise and transform their business model in order to contribute to their sustainable development is called:-

- A. Sustainable Business
- B. Sustainable Business Model
- C. Sustainable Finance
- D. Sustainable Business Model Innovation

Ans. D

3. Which of the following can be an example of sustainable business model?

- A. Small scale business
- B. Exclusive business
- C. Inclusive business
- D. International business

Ans. C

4. Which of the following activities fall under sustainable finance?

- A. Sustainable cost
- B. Green bonds
- C. Circular economy
- D. Operation management

Ans. B

5. '3P' stands for:-

- A. Product, Place, Price
- B. Product, Price, Promotion
- C. Profit, People, Planet

D. Profit, Place, People

Ans. C

6. If your inventory balance at the beginning of the month was \$1,000, you bought \$100 during the month, and sold \$300 during the month, what would be the balance at the end of the month?
- A. \$1,000.
 - B. \$ 800.
 - C. \$1,200.
 - D. \$ 200.

Ans. B

7. Beginning raw materials inventory was \$32,000. During the month, \$276,000 of raw material was purchased. A count at the end of the month revealed that \$28,000 of raw material was still present. What is the cost of direct material used?
- A. \$276,000
 - B. \$272,000
 - C. \$280,000
 - D. \$ 2,000

Ans. C

8. Direct materials used in production totaled \$280,000. Direct labor was \$375,000 and factory overhead was \$180,000. What were total manufacturing costs incurred for the month?
- A. \$555,000
 - B. \$835,000
 - C. \$655,000
 - D. Cannot be determined.

Ans. B

9. Beginning work in process was \$125,000. Manufacturing costs incurred for the month were \$835,000. There were \$200,000 of partially finished goods remaining in work in process inventory at the end of the month. What was the cost of goods manufactured during the month?
- A. \$1,160,000
 - B. \$ 910,000

- C. \$ 760,000
- D. Cannot be determined.

Ans. C

10. After calculation it is found that a particular project needs to sell 20000 pieces of denim to reach BEP. How many pieces needed to sell to make least profit?

- A. 20000
- B. 21000
- C. 20001
- D. Cannot be determined.

Ans. C.

11. More than 4.4 million workers are working in Bangladeshi RMG sector. Among them more than 80% are women. Which sustainability aspect is achieved through women empowerment?

- A. Economic
- B. Social
- C. Environmental
- D. A & B both

Ans. D

12. How can we get cost reduction through value creation?

- A. Proper resource utilization through cost management
- B. Developing sustainable supply chain
- C. Capturing emerging market through innovative marketing
- D. Green and electronic administrative practice

Ans. B

13. Capturing emerging market through innovative marketing falls under what type of cost?

- A. Direct labor
- B. Manufacturing overhead
- C. Marketing and selling costs
- D. Administrative costs

Ans. C

14. What type of cost is purchasing environment friendly finishing agents?

- A. Direct labor cost
- B. Manufacturing overhead
- C. Marketing and selling cost
- D. Direct material cost

Ans. D

15. What aspect of sustainability can be affected by cost minimization by reducing work load?

- A. Economic
- B. Social
- C. Environmental
- D. A & B

Ans. A

Topic Discussion:

“What is your preferred way of developing a sustainable business model?”

“Finance can be used as force for sustainability, describe from your perspective of the RMG industries of Bangladesh”

“Discuss and relate the manufacturing and non-manufacturing cost in terms of a textile composite company, that can help in long-term sustainability.”

“Classify all the cost only between fixed and variable cost and find out Break-even-point for a particular time.”