

Lesson 12 – Value of Product

1. Background Narrative

Marketing products is a critical step in getting good ideas and products from the concept and manufacturing stage to the actual purchase and use of a product. Effective marketing requires good communication skills, an understanding of the value of the product, and an understanding of consumer choices. Market research is typically done alongside product development, to ensure that the concept and effort are economically viable.

For problems such as the one we are solving in this unit, consideration of the value of the product becomes quite complex. Economic value can be calculated, based on the monetary value of the goods produced. (“Goods” refers to concrete products.) There is also economic value associated with reductions in solid waste generation, saved landfill space, and reduced costs incurred by using recycled, rather than virgin, materials as inputs to production. However, these problem solutions also have aesthetic and social values that cannot be measured as easily as a monetary savings. These products offer environmental benefits – by using one of our products, a consumer is demonstrating that he/she is taking a step toward “saving the environment.” Some consumers are willing to actually pay more money for such products than for traditional, less “environmentally friendly” products. The extent to which this benefit is valued, though, will vary from consumer to consumer.

An understanding of the complexities of the benefits is required to adequately market these products.

All products must be marketed in order to be successful. Market research makes it possible for companies to determine the level of interest that the public has for particular products or services and the amount of money they would be willing to pay. This helps companies to meet the needs and wants of the consumer.

A marketing plan is created to guide the development and sale of marketable goods or services. Decisions need to be made concerning product distribution, pricing, and advertising. Advertisement design and the choice of advertising media (radio, television, newspaper, billboards) often depend on the target market for the specific product. (For example, children’s toys are often advertised in television commercials that are aired during children’s programming.)

This lesson will help to show that a valuable product has been made from our solid waste. Concrete products are valuable commodities with many benefits and few associated costs. There are both economic benefits, which can be assigned a dollar value, and non-monetary benefits such as aesthetics, environmental friendliness, or social choice.

The benefit of a product may differ between the point of view of the producer and the consumer. The producer values ease of production and high profit. The product won’t be manufactured if it is not expected to generate sufficient profit for the producer. The consumer values the cost of the product relative to its intended function, durability and, sometimes, the environmental impacts associated with the product.

Concrete products made with solid waste aggregates can be cheaper to produce, compared to traditional concrete, if there is a nearby source of suitable waste aggregates. The use of these waste materials reduces the producer’s cost of buying

sand and gravel. In addition to marketing the functional qualities of our concrete product (e.g., patio building materials), the producer can exploit the environmental benefits of the product to reach a broader market share. The environmental benefits include reducing waste sent to the landfill and the associated loss of quality materials, as well as reducing the need to mine more sand and gravel from our land.

2. Performance objectives

- Students will be able to define marketing.
- Students shall be able to assess the benefits of a commodity.

3. Standards:

- NYS: 3.3, 5.6, 7.1
- US Tech: 2.1, 2.2, 2.3, 4.3
- US Math: 1.3, 5.1

4. Resources

- Teacher resource on marketing
- Marketing factsheet handout
- Student worksheets – Value of our Product – Value to the Producer, Value to the Consumer
- Newspaper or magazine advertisements, cut out for distribution
- Appropriate grading rubric for student-created advertisement (poster, oral presentation, etc.)

5. Vocabulary

Marketing	Value to the Customer
Value	Value to the Producer

6. Instructional Plan

1. Introduction (5 Min).

- a.Revisit the problem solving method. We have made a decision about what recipe to use and will be making our samples. Are we done? What do we need to do now? Assess our solution to see if it works – we can't do this now, because we need to make our samples first.
- b.When someone decides to make a product, what – besides technical aspects students identified in their weighted objectives table (strength, color, etc.) –

makes the product successful? Usually, in today's world, we want the product to be marketable.

2. Introduction to Marketing (15 min)

- a. What is marketing? Define for students and hand out marketing fact sheet.
Review terms.
- b. What is a marketing plan? Using a sample product, such as a car, discuss the different ways that the product can be marketed (advertised) – tv, radio, billboard, poster, newspaper, magazine.
- c. Have students use the advertisements they brought in, or distribute some to groups of students. Have students answer the following questions about their advertisement:
 - How would you describe the product?
 - What are the unique features of this product that the advertisement is trying to exploit?
 - What advertising techniques are utilized?
 - How does the advertisement capture its audience?
 - Does this ad make you want to purchase the product? Why or why not?

3. Activity: The Value of our Product.(15 min)

Remind the students of our initial problem statement:

“You are working for a concrete company and have many clients. Different types of are better suited for various applications. It is your job to evaluate the clients’ needs and determine the optimum concrete for the application.”

- a. Brainstorm – what makes our product “valuable?” Consider the benefits from using our product as the best way to solve a problem scenario.
- b. Introduce the idea of “Value to the Consumer” versus the “Value to the Producer.” See the “Teacher Notes” for suggested topics and statistics.
- c. Value to the Producer: Have students do some quantitative analysis of the cost of making their product. Distribute “Value of our Products – Value to the Producer” worksheet
 - i. Calculate “net income” (sale cost minus cost of production) for concrete product (use worksheet provided).
- d. Optional: assign the “Value of our Product – Value to the Consumer” student worksheet as homework

4. Activity: Value to Consumer/: Creating an advertisement (20 Min)

- a. If students have not already done so, have them complete the worksheet: Value of our Product – Value to Consumer.
- b. The students will be making a brochure to illustrate the appropriateness of their recipe choice to the client.

- c. Students should use the results from their brainstorm and worksheets about what makes the product valuable (think about the value to the consumer)
- d. Don't forget to include the price!

5. Presentation of Advertisements

- a. Students should present their advertisements to the rest of the class.
- b. This may need to be done on another day as students may not complete the assignment in a single class period or there may not be enough time for all to present.

Understanding the Value of Our Product Teacher Notes

Economic accounting can be included among the benefits or added value of our products. Some useful cost information is included here if you wish to include this as a quantitative assessment.

Value to the producer/manufacturer

The manufacturer generally wants to make an economic profit. How do we know if we have made a profit?

sale price of the product – all expenses required to build the product = profit

Example – concrete stepping stones:

sale price ~\$3.50 per 12” octagon stepping stone

what are our expenses?

cement	\$8/bag of cement; 30 stones / bag	0.27
waste aggregate	(FREE!!)	
mold	\$4.10 uses per mold	0.40
labor	\$7/hour; 10 stones per hour	<u>0.70</u>
Total:		\$1.37 / stone
Profit:		\$2.13 / stone

(note – a good extension for math class – calculate these expenses per block rather than giving them the answers)

So, if our product is salable, we could make a good profit. Therefore, this product has value for the manufacturer.

Savings from not disposing the solid waste in the landfill:

In northern NY the typical cost for municipal solid waste disposal to the consumer is equivalent to the cost of one clear 13-gallon trash bag plus the cost of one required “trash sticker” per bag (note that this does not include the additional taxes incurred for municipal waste handling).

1 13 gallon bag = 0.20
1 trash sticker = 0.80
total disposal for 13 gallons = \$1.00
13 gallons = 208 cups

One stepping stone uses approximately 5 cups of waste aggregate. So, if it costs approximately \$1.00 to dispose of 208 cups of waste, the savings per stepping stone is calculated as:

$$\frac{\$x}{5 \text{ cups}} = \frac{\$1.00}{208 \text{ cups}}$$

x = 2.4 cents (minor, but worth noting!)

Value to the consumer

The value to the consumer can vary widely depending on his/her own priorities. For example – one person might want to buy these stepping stones because they might be cheaper (due to free aggregate), whereas someone else might find value in the “green” nature of this product (less waste to the landfill) and might even be willing to pay more because of that.

Why are our products valuable to the consumer?

Example – Concrete stepping stones:

- Economic value associated with reduced cost of these products (lower production costs should be reflected in lower sales costs).
- Environmentally friendly product – many consumers are concerned with buying products that have low impact on the environment. Our product turns a waste material into a valuable commodity, and reduces the rate at which our landfills are filled.
- They are good looking!



Marketing Fact Sheet



Marketing: all activities utilized to sell a product.

Two major types of markets:

Industrial: _____

Consumer: _____

Marketing plan: used to predict what products will sell and the quantities that can be expected to sell

Market research: all activities used to determine what people want and how much they'll spend for it

Types of market research:

Interview Others: _____

Test marketing _____

Opinion polls _____

Advertising: informs or persuades a consumer to buy a product

Target market: group of people most likely to want a product

Types of advertising:

Television commercials, radio spots, billboards, samples,

Others: _____

Types of sales: Direct sales: _____

Wholesale: _____

Retail: _____

Distribution: process of moving goods from the producer to the consumer

Value of our Products

Value to the Consumer

NAME: _____

Answer the following questions about the concrete product that you produced in technology class.

1. Name of your product:

2. Explain why you decided to produce this product:

3. What attributes of this product do you think make it most valuable to the person making the product? _____

4. What attributes of this product do you think make it most valuable to the person buying the product?

5. Are there any attributes that make this an environmentally friendly product? _____

Value of our Products

Value to the Producer

Name: _____

Use the information in the table to answer the questions below.

Cost of Producing 12-inch Sample

Item	Cost of one unit	Number of samples per unit
Cement	\$8.00/bag	30
Aggregate	free	n/a
Molds	\$4.00	10
Labor	\$7.00	10

1. What is the total cost of producing 1 sample?

- Cement:

- Molds:

- Labor:

2. If one sample sells for \$3.50, what is the profit per sample?