


The Art and Science of Pricing Products

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Science side: costing


- ▶ Track costs!
- ▶ That which gets measured gets managed.
- ▶ Tracking costs is a bit like exercise: lots of choices. Find one you like. Use it.



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Concept of price

- ▶ Defined as the outlay customers make to obtain a desired product or service.
- ▶ Price is an indication that something has **value** to both buyer and seller.



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Cost accounting software sources

With the availability of new greenhouse software, the differences between them can be confusing. Several no-cost or very inexpensive software packages are available for estimating greenhouse production costs or crop timing. The three that are widely used are: Virtual Grower, Flowers on Time, and Greenhouse Cost of Production. Each package is compared in the table below.

Item	Virtual Grower 3.0	Flowers On Time	Greenhouse Cost Of Production Software
Cost	Free	Free	Less than \$30
Developed by	USDA Agricultural Research Service ¹ (ARS)	Researchers at University of Florida ² , Michigan State University ³ (MSU), and University of Minnesota ⁴	Researchers and Extension educators at MSU
Computer hardware/software requirements	Compatible with computers running Windows XP, Vista, Windows 7, and Mac OSX 10.4.11 and above.	Must have Microsoft Excel installed on your computer.	
Use for	Accurate predictive estimates for heating and lighting costs for each greenhouse, as well as basic plant scheduling information (weeks to flower).	Quick analysis or second opinion of the impact that changing greenhouse temperatures will have on crop timing.	Developing estimated costs and detailed accounting information on a per crop basis.
Download/buy at	USDA-ARS Products and Services ⁵	Floriculture Research Alliance ⁶	MSU Extension Bookstore ⁷
Instructions for use	Download includes a detailed manual.	The first page has instructions on how to use the spreadsheet.	Ships with a DVD that contains a video demonstrating how to use the spreadsheet.

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What is value?



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Cost of production

Table 1.1 Summary of the income statement data from eight leading U.S. young plant growers in 2006.

	\$	% of sales	\$/ft ²	\$/sqw
Total Revenue (TR)	\$10,292,795	100.0%	\$24.37	\$0.42
Direct Costs (DC)	\$3,239,313	30.1%	\$8.10	\$0.14
Labor costs (LC)	\$3,099,947	31.9%	\$7.69	\$0.13
Overhead Costs (OC)	\$1,139,366	30.8%	\$7.69	\$0.13
Total Costs (TC = DC+LC+OC)	\$7,478,626	82.9%	\$23.44	\$0.40
Gross Margin (TR-DC)	\$7,053,482	69.9%	\$16.27	\$0.28
Net Income (TR-TC)	\$2,814,169	7.1%	\$0.93	\$0.02

Direct costs (~33%)
Labor costs (~34%)
Overhead costs (~33%)

Source: The New Economics of Greenhouse Production, AmericanHort publication by Paul Fisher, Alan Hodges, Bill Swankamp, and Charlie Hall.
Accessible at <http://millionchair.tamu.edu/files/2013/09/Combined-costing-series.pdf>

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Table 2.1 An example enterprise budget for a 4.5-inch Wave Petunia finished crop from two plug sizes.

Plug size	392-cell plug tray	128-cell plug tray
Plug cost	\$0.15	\$0.28
Media, pot, tag	\$0.10	\$0.10
Total direct cost	\$0.25	\$0.36
Sales price	\$1.25	\$1.25
(A) Gross margin/pot	\$1.00	\$0.89
Plant Spacing (sq.ft./pot)	0.25	0.25
Production time (Weeks)	6	4
Square foot-weeks (sfw)	1.5	1.0
Overhead cost/sfw	\$0.30	\$0.30
(B) Overhead cost	\$0.45	\$0.30
(C) Profit/pot	\$0.55	\$0.59
(D) Profit/sfw	\$0.37 = \$0.55/1.5	\$0.59 = \$0.59/1.0

\$0.70 total cost of production

Source: The New Economics of Greenhouse Production, AmericanHort publication
By Paul Fisher, Alan Hodges, Bill Swankkemp, and Charlie Hall.
Accessible at <http://elmscholar.tamu.edu/View/2013/009/Combined-costing-series.pdf>

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Break-Even Analysis

- ▶ You grew 5000 4.5-inch petunia plants that each cost \$0.70 to grow.
- ▶ Is it possible to sell all 5000 plants? What is an acceptable loss rate or percentage?
- ▶ Next, where is the break-even point? How many plants do you need to sell to recover total costs?
- ▶ You are consider selling the plants at one of three price points: \$1.99, \$2.99, and \$3.99.
- ▶ Where is break-even for each price?

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Cost based pricing strategy

$$\text{MU on C} = \frac{\text{Retail Price} - \text{Cost}}{\text{Cost}}$$

You decide on 300% mu/c. Cost is \$0.70.
What's the price?

$$3.00 = \frac{(\text{RP} - \$0.70)}{0.70}$$

$$(3.00 \times 0.70) = \text{RP} - 0.70$$

$$2.10 = \text{RP} - 0.70$$

$$2.10 + 0.70 = \text{RP} = \$2.80$$

Just multiply 4x.

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Break-Even Analysis

- ▶ What is the total cost of production?
- ▶ \$0.70 each x 5000 = \$3500
- ▶ How many plants do you need to break-even (recoup \$3500) with a \$1.99 retail price?
- ▶ $\$3500 / \1.99 (price each) = 1759 (1758.79) plants is the break even point in units.
- ▶ How many plants do you need to break-even (recoup \$3500) with a \$2.99 retail price?
- ▶ $\$3500 / \2.99 (price each) = 1170 plants is the break even point in units.

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Break-Even Analysis

- ▶ In setting prices, one point to consider is the break-even point.
- ▶ This occurs when you have paid all the direct costs of that product.
- ▶ The break-even point is literally where you generate no profits, but break-even or cover all costs incurred in growing the product.

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Break-Even Analysis

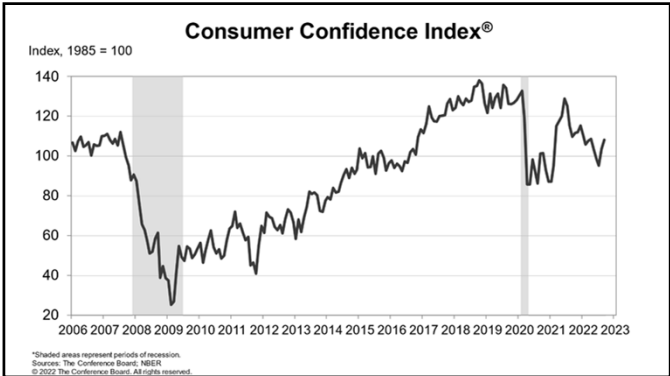
Price	Quantity Sold (plants)	Total Sales	Break Even Point (plants)	Percent product sold to break even
\$1.99	4000	\$7,960	1759	18.6%
\$2.99	4000	\$11,960	1170	12.3%
\$3.99	4000	\$15,960	878	9.3%

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Art of Pricing

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A Warning for the World Economy: 'The Worst Is Yet to Come'

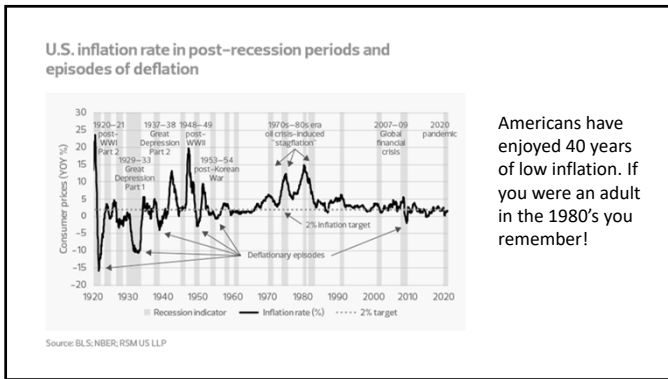
The International Monetary Fund lowered its growth outlook for 2023 and suggested that interest rate increases could spur a harsh global recession.

"In short, the worst is yet to come, and for many people 2023 will feel like a recession," the International Monetary Fund report said.

The organization maintained its most recent forecast that the global economy will grow 3.2 percent this year but now projects that will slow to 2.7 percent in 2023, slightly lower than the fund's previous estimate. Both figures are big comedowns from the start of the year, when the fund projected global growth of 4.4 percent in 2022 and 3.8 percent in 2023, highlighting how the outlook has darkened in recent months.

Source: New York Times 10/11/2022

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Americans have enjoyed 40 years of low inflation. If you were an adult in the 1980's you remember!

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Inflation Strains Voters of All Incomes

By Justin M. Sizemore
Ana Brnava Mena

The economic pain from the highest inflation in four decades is reaching across all income groups and casting a broad shadow over Democrats' prospects for keeping control of Congress in Tuesday's mid-term elections, the latest Wall Street Journal poll shows.

Lower-income voters are most, but the survey shows the heaviest burden of rising prices is also weighing more heavily than earlier this year even on wealthier households. Among those with annual household

Share of surveyed voters that say inflation is creating 'major financial strain' by household income

60%
50%
40%
30%
20%
10%
0%
March 2022

More than \$200,000
\$100,001-\$200,000
\$50,001-\$100,000
\$20,001-\$50,000
\$10,001-\$20,000
\$5,001-\$10,000
Less than \$5,000

Fuel Costs Tick Up After Steady Drop

Elevated fuel prices and shortages remain a concern for U.S. consumers ahead of Tuesday's mid-term elections. After a steady decline, the average price of unleaded regular gasoline has been ticking up again, reaching \$3.05 a gallon on Sunday, according to AAA. For the 50th straight day since June but still 30 cents higher than last year it is \$2.40 higher than when President Biden took office. The average price of diesel hasn't slipped under \$5 a gallon for close to a month, and stock prices cooled weekly haven't been this low since 2005, according to AAA and related data.

Prices that have pulled fuel prices higher include recovering demand after the height of the Covid-19 pandemic, a shuffling of flows after Russia's invasion of Ukraine, and shutdowns of refineries, all against a backdrop of reduced investments in the oil-and-gas industry, analysts said.

"We never got back to pre-Covid in terms of the balance between supply and demand for oil and gasoline and diesel," said Patrick De Haan, head of petroleum analysis at price tracker GasBuddy.

—Associated Press

WSJ 11/9/22

It is essential marketers know who their customers are!

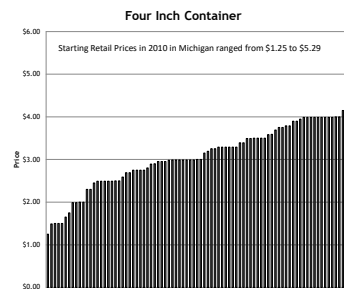
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Art of pricing:
Should a formula have the last
word on setting a price?



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The case of the 4" plant price



\$0.70 cost

Could input cost alone
account for the \$4.04
price spread in a single-
item 4" container?

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The case of the 4" single plant Michigan State Plant Pricing Study

- ▶ Tom Dudek and I collected price information from 2007 to 2010 on three basic items.
- ▶ All single unit, free standing stores (no multi-location or box stores).
- ▶ Single item four-inch vegetative annual, 10-inch single item hanging basket, 36-count flat
- ▶ Collected in May and June on "retail price as of first week of May."

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Art of pricing:
NO! Formulas should NOT have
the last word on setting a price!

You are more likely to leave
money (profit) on the table if
you strictly adhere to formula-
based pricing.

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Michigan Price Study Participating Counties

- ▶ Allegan
- ▶ Kent
- ▶ Muskegon
- ▶ Newaygo
- ▶ Ottawa



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And, you will miss key price points!

- ▶ \$0.49
- ▶ \$0.99
- ▶ \$1.49
- ▶ \$1.99
- ▶ \$2.49
- ▶ \$4.99
- ▶ \$9.99
- ▶ \$14.99
- ▶ \$19.99
- ▶ \$29.99 (in \$10 increments)
- ▶ \$99.99 (in \$50 increments)

When setting price, consider
how close to these psychological
barriers you can get.

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Sometimes we can
shape that
perspective.

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- novelty or capability to satisfy a desire for knowledge
- sensory value (aesthetics, ambiance, sensory aspects)



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-



Sheth, Newman, and Gross (1991) Theory of Consumption Values

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- symbolism or meaning relating to socio-cultural events and traditions



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- features, functions, attributes, or characteristics (aesthetics, quality)
- performance (reliability, performance quality)
- outcomes or consequences (environmental benefits)

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- Does the customer get joy or a positive feeling from buying or having/owning or eating the product?



Elements of perceived value

5. Social value

- When the consumer buys the product, it can help them enhance their perception in the eyes of others (FOMO is real. My friends are posting on Instagram!)

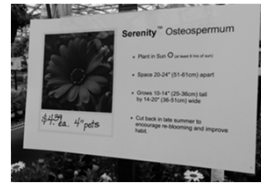


Grafted Queen of Hearts® plant, 4" pot.
\$4.99 each (2.75 quart pot)



Alcove Silver Dragon® plant, 4" pot.
\$5.00 each (2.75 quart pot)

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Focus on features: technical aspects of the plant or its characteristics (functional value alone)



Focus on benefits: what those features mean to the consumer (other value dimensions)

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Value communicated through attributes

- Search attributes** can be readily evaluated before the customer makes the purchase. These would include foliage color/shape/size and price.
- Experience attributes** can only be evaluated after purchase. Flavor (peppery like arugula), sweetness, bitterness, crunch.
- Credence attributes** are more difficult to evaluate, even after purchase. Consumers rely on the brand and reputation of the seller. Production method (sustainable, organic), carbon footprint (intensive, limited), nutritional and other benefits (emotional, psychological, economic).

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Enhance value communicating plant benefits



Want a copy? Email me at behe@msu.edu and ask for the benefits articles.

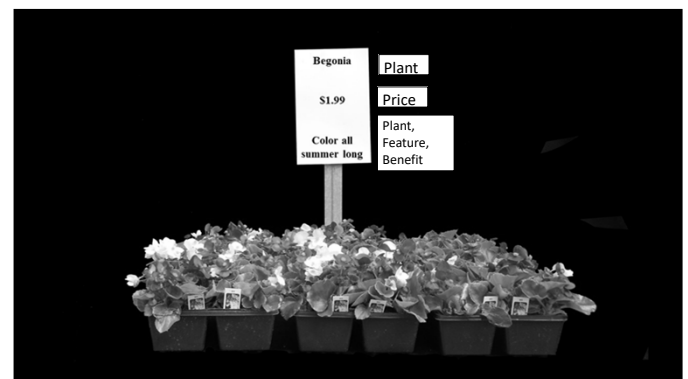
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Where is the value?

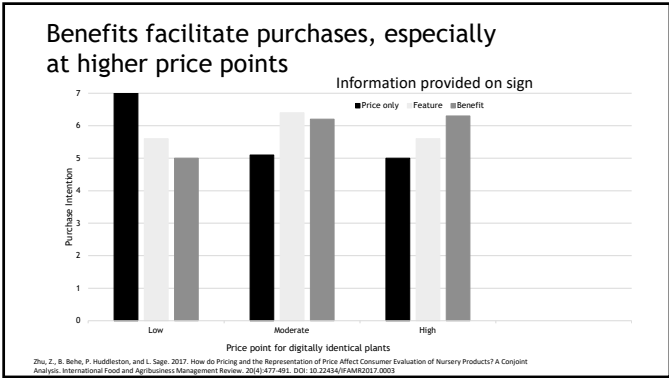


Why do we communicate to customers that all of the value of the product lies below the soil/media line?

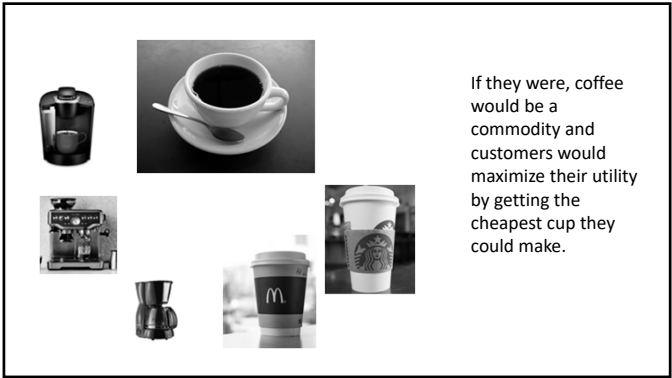
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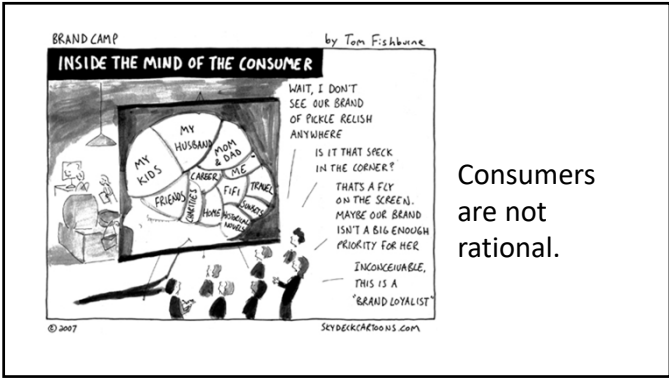
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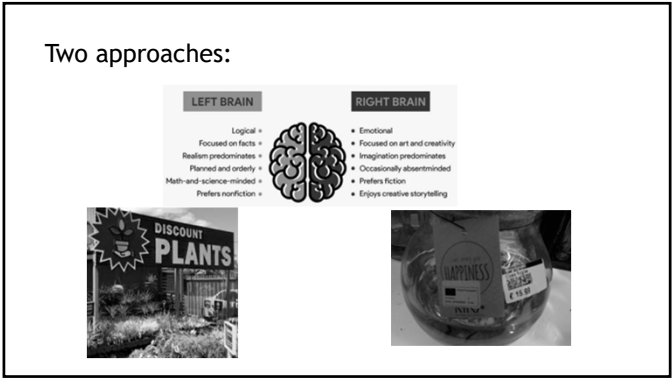
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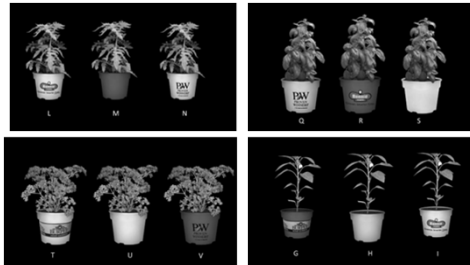


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Which plant is the best quality?



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What's it worth?



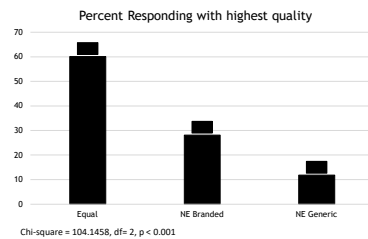
Consider cost.
Consider break-even.
Consider price points.

Make comparisons hard.

Now, what is it worth?
That is the art of pricing.

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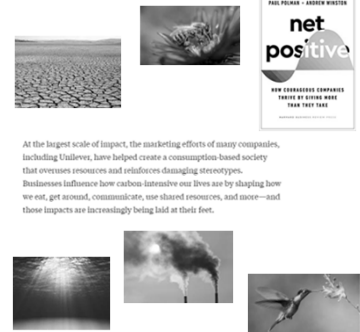
Branding matters: Perceived plant quality



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Harvard Business Review Sept./Oct. 2021



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Ontario (9). "We used Instagram to post a rare house release on Saturday morning (posted on Friday night), and customers came to line up starting at 6:45 a.m. The store opened at 8:00 a.m. and by 9:30 we had sold over 500 plants at \$19.99. It's like a gold rush on some of the tropical plants." —Maryann Vandermeer, Vandermeer Nursery



I checked out Maryann's Instagram page and found the post she referred to. Nice! For those of you who are skeptical about the power of social media, well... what's \$10 times \$20? \$200—even in CAD!

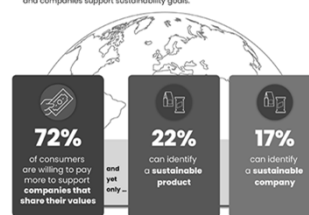
Source: Chris Beytes, Acres Online, June 26, 2020

How much are you willing to pay?

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The Opportunity Gap

Many consumers say they are willing to spend extra money in support of sustainable companies, yet most consumers remain unsure which products and companies support sustainability goals.



Hartman Analysis: This may be less a reflection of stagnant knowledge and more a result of moving goalsposts. As public understanding of environmental concerns grows more nuanced, consumers may be finding it harder to navigate which products and companies best address each individual concern.

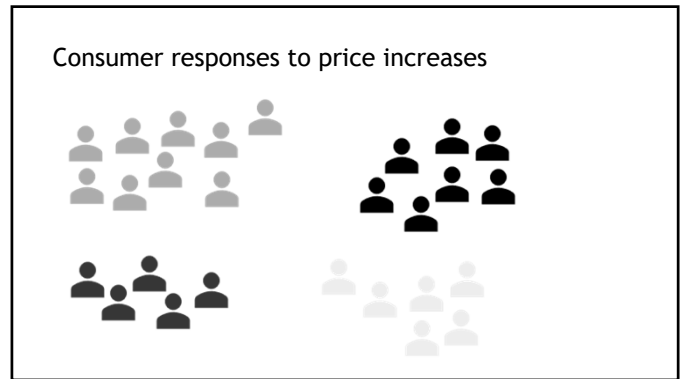
You can obtain the Sustainability 2021: Environment and Society in Focus report at the Hartman Group's website: hartmangroup.com

Be one of the sustainable companies your customers can identify.

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Capitalize on local identity

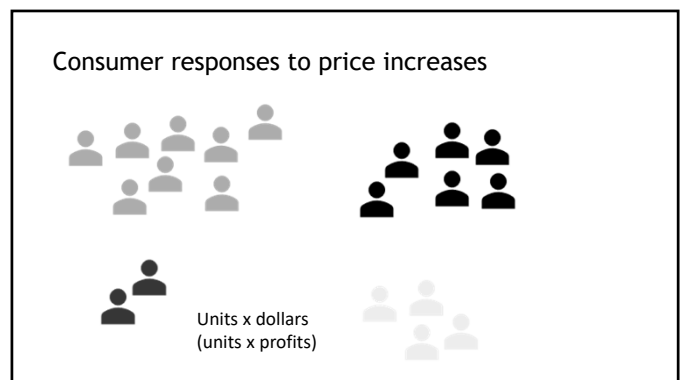
- Use imagery to reinforce your location in the local geography
- Employ symbols, seals, marks that reinforce your state (or region)



MICHIGAN
GROWN
MICHIGAN
GREAT




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Can you raise prices?



Try raising prices on a few products (experiment).

Raise them on products that are not easily compared.

Experiment and identify how many customers pushed back and also calculate sales.

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Sell at a loss?



"Will you write each customer a check or tape a dime to each container you sell?"

William R. Carlson

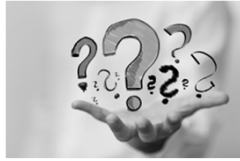
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The Art and Science of Pricing Products

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