

# Product Differentiation and Bundling

## Intermediate Microeconomics

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# Out of Chaos, Order.

From the chaos of human behavior in markets, microeconomic theory brings order and the power analytical rigor.

## Competition: four classes of market structure/two theoretical approaches

- Monopolistic competition
- Perfect competition
- Monopoly
- Oligopoly
  - rivalry breeds strategy
- Optimization: maximizing profits
  - $MR = MC$
  - $MR = P = MC$
- Strategic behavior
  - game theory: finding dominant strategies and best moves given expectations of rival behavior.

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# How Do Firms Really Compete?

- ◆ We have been building elements of an integral theory.
- ◆ Dimensions of Competition
  1. Technology choice and cost minimization
  2. Price competition
  3. Pricing strategies – price discrimination
  4. Product differentiation (Quality competition)
  5. To cooperate or not to cooperate?
  6. Entry decisions and entry deterrence
- ◆ Some other dimensions we have touched upon
  1. Interest-group politics (rent-seeking)
  2. Solving informational problems (information asymmetries)
  3. Efficient organizational decisions

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## Main topics today

- ◆ Out of Chaos, Order.
- ◆ Bundling
  - What is product bundling?
  - Why do businesses bundle products?
  - What welfare consequences does it have?
- ◆ Product differentiation
  - What is it?
  - What are its welfare consequences?

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## Product Bundling

- ◆ Time-Warner Cable NYC offers many packages of its services. Why packages? Why don't they just offer a smorgasbord of services, each at a price, and let you buy the ones you want?
- ◆ Microsoft bundles MS Word and MS Excel into a package known as MS Office.
- ◆ Theaters bundle single tickets with seasonal packages.
- ◆ Other companies similarly bundle their products. Why do they do this?

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## Time-Warner NYC Cable and Internet Service

<http://www.twcny.com/>

- ◆ Product bundling is another type of pricing strategy designed to "capture consumer surplus."
- ◆ Suppose market specialists at Time-Warner see the following market segments:

Mkt segment		Cable TV	Cable Internet
i	50 are willing to pay:	\$40	\$20
ii	50 are willing to pay:	\$40	\$0
iii	50 are willing to pay:	\$0	\$60

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## Time-Warner NYC Cable and Internet Service (2)

Mkt segment		Cable TV	Cable Internet
i	50 are willing to pay:	\$40	\$20
ii	50 are willing to pay:	\$40	\$0
iii	50 are willing to pay:	\$0	\$60

- ◆ Consider the pricing options below.
- ◆ Alternatively, calculate and compare revenues for a pricing strategy that includes a package offer with one that does not.

	Pricing option
Cable	\$40
Internet	\$60
Both	\$80

- ◆ Comparing revenues with or without the package deal, which is better?

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## Bundling as Price Discrimination

### Example 2: the Saturday double feature

- ◆ Source: "Sorting out bundling and antitrust law from a seat at the Saturday double feature," by Hal Varian, *NY Times*, 7/26/2001.
- ◆ See 10th paragraph. Suppose there are two films, "Dinosaur Dystopia" and "Kung-Fu Katie," and 100 potential viewers.

Segment	Willingness to pay	"Dinosaur"	"Katie"
i	50 are willing to pay	\$3	\$2
ii	50 are willing to pay	\$2	\$3

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## Bundling as Price Discrimination

### 1. Analyzing Pricing Options

Segment	Willingness to pay:	for "Dinosaur"	for "Katie"
i	50 are willing to pay	\$3	\$2
ii	50 are willing to pay	\$2	\$3

Pricing options: *	Proposed price:	Expected Revenues
a) low unbundled	\$2 for ea.	
b) high unbundled	\$3 for ea.	
c) bundled	\$5 for both	

\* NB: "bundling" is also a means of differentiating one's product.

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## Questions About Bundling

- ◆ In what sense is bundling a form of price discrimination?
- ◆ In what sense is bundling a means of product differentiation?
- ◆ Does bundling capture consumer surplus for producers?
- ◆ Does bundling "add social value"? ... i.e. increase the sum of producer and consumer surplus?

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## Product Differentiation

- ◆ A "dimension" of competition in monopolistic competition or oligopoly
- ◆ Related to price discrimination (or vice versa)
- ◆ In business, much of market strategy is about product differentiation
  - product positioning (tangible differentiation)
  - marketing analysis, branding, advertising ... (differentiation in strategies)
  - bundling product with reliability service (differentiation in execution)

*Read: "Marketing Success Through Differentiation—Of Anything." by Theodore Levitt, HBR 1979. In Case Study Pack.*

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## Product Differentiation & Price Discrimination

- ◆ Product differentiation strategies are counterparts and complements to price discrimination strategies.
- ◆ Firms may charge different prices to different market segments
  - by isolating those markets,
  - or by differentiating the product to better suite each segment,
  - or both.
- ◆ Product differentiation can have positive welfare consequences, too (independent of the effects of competition).
  - by providing a greater variety of goods that better suit varieties of tastes
  - or that better accommodate specialized needs.

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## Product Differentiation Through Advertising and Marketing Strategies

- ◆ Some social critics attack marketing analysis and advertising as wasteful. Is it wasteful?
  - Consumer's viewpoint:
    - Fully informed consumers with complete preference orderings have no need for advertising or market information.
    - Remove complete information: Consumers must spend time, effort and money to discover their best options.
    - The consumer can choose optimal level of information collection:
      - $MC(\text{info collection}) = \text{marginal increase in satisfaction ...}$
    - Does advertising increase or decrease info collection costs?
  - Firm's viewpoint:
    - Firms will not spend money on advertising if they do not think it contributes to profit maximization.
    - A necessary condition for an additional unit of market analysis or advertising is:
      - $MR(\text{advertising/marketing}) > MC(\text{advertising/marketing})$

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## Product Differentiation and Social Welfare

### Product Differentiation from Two Perches:

- The view from monopolistic competition
  - Why do firms differentiate their products?
  - ... to decrease the elasticity of demand at a given  $(p, y)$
  - ... since, the Lerner index,  $L = \frac{p - MC}{p} = \frac{1}{\eta}$ , lowering  $\eta$  increases market power.  
..., but this means AC are higher, since  $MR = p \left(1 - \frac{1}{\eta}\right)$
- Adding dimensions ...
  - Consumers have information needs.
  - Consumers have idiosyncratic needs/preferences for products.
  - An undifferentiated product targets the "average need or preference."
  - Adding heterogeneity, consumers with specific needs/preferences are often willing to pay more. Why? because they value the product tailored more closely to their needs.

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## Bundling and Market Power

- ◆ Airlines offer "business class" and "coach class", advanced-purchase and regularly priced tickets.
  - We discussed this as an example of price discrimination. If it were purely price discrimination, there would be no difference in the good or service sold. But actually these represent different bundles of services.
  - Does bundling/price discrimination add social value in this case?
  - Does bundling make use of market power?
- ◆ Microsoft was accused of using its bundled Windows and Internet Explorer as an anticompetitive strategy to drive Netscape out of the market?
  - Can bundling be anti-competitive?
  - If so, how?

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## Microsoft and the Bundling of Internet Explorer

- ◆ Consider possible ways of bundling the OS (operating system) and the internet browser (MS Explorer or Netscape Navigator)

Pricing Options	Product or bundle	Operating system (OS)	Browser (Explorer or Navigator)	Consumer installation required?
1	MS unbundled	\$100	\$0	yes
2	<b>MS bundled</b>	<b>\$100</b>	<b>\$0</b>	<b>no</b>
3	<b>Netscape unbundled</b>	<b>\$100</b>	<b>\$0</b>	<b>yes</b>
4	Netscape bundled w/ an OS	\$100	\$0	no

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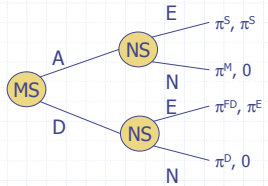
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## Microsoft: Paranoia or Foresight?

Microsoft saw Netscape Navigator as a threat to its monopoly in PC operating systems.

What deterrence strategies were available to Microsoft?

Bundling Internet Explorer with Windows was an attempt to establish the MS browser as part of the Windows standard.



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