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Rights Management

Content owners have a variety of rights to control...

duplication

performance

creation of derivative works

distribution

public display

Q: How should "copy" rights be managed?

Q: What implications does digital technology have for rights management?

Sell
License
Retain exclusively

What are some management options?

duplication

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public display

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Search Amazon.com

"star wars"

Narrow Your Results

Narrow by Category
Books (24016)
Toys & Games (2378)
Home & Garden (1369)
Apparel (297)
Video Games (244)
Music (185)
Everything Else (125)
Sports & Outdoors (111)
Kitchen & Housewares (103)
VHS (96)
DVD (82)
Office Products (79)
Electronics (73)
Software (63)
Classical Music (60)
Tools & Hardware (29)
Outdoor Living (28)
Computers & Add-Ons (14)
Unbox Video Downloads (13)
Automotive (12)
Baby (7)
Musical Instruments (6)
Jewelry & Watches (5)
Health & Personal Care (4)
Gourmet Food (3)
Cell Phones (2)

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Source: http://www.amazon.com/

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Reduced reproduction costs

Reduced distribution costs

What are the main features of improving digital technology related to copies?

Lower reproduction and distribution costs + "experience" good…

…give some away

Giveaways

- "repeated use" goods
- similar but not identical
- time-dependent use
- "versioning" (basic versus full)

Less restrictive control:

- Increases value of product (more and different uses)
- But, also creates own competition
  - Rented / shared / used / pirated copies are substitutes for purchased copies
- What to do?

DRM flexibility

- Suppose production costs are negligible.
- Market demand is p(y).
- The firm wishes to

$$\max_{y} p(y)y$$

Demand
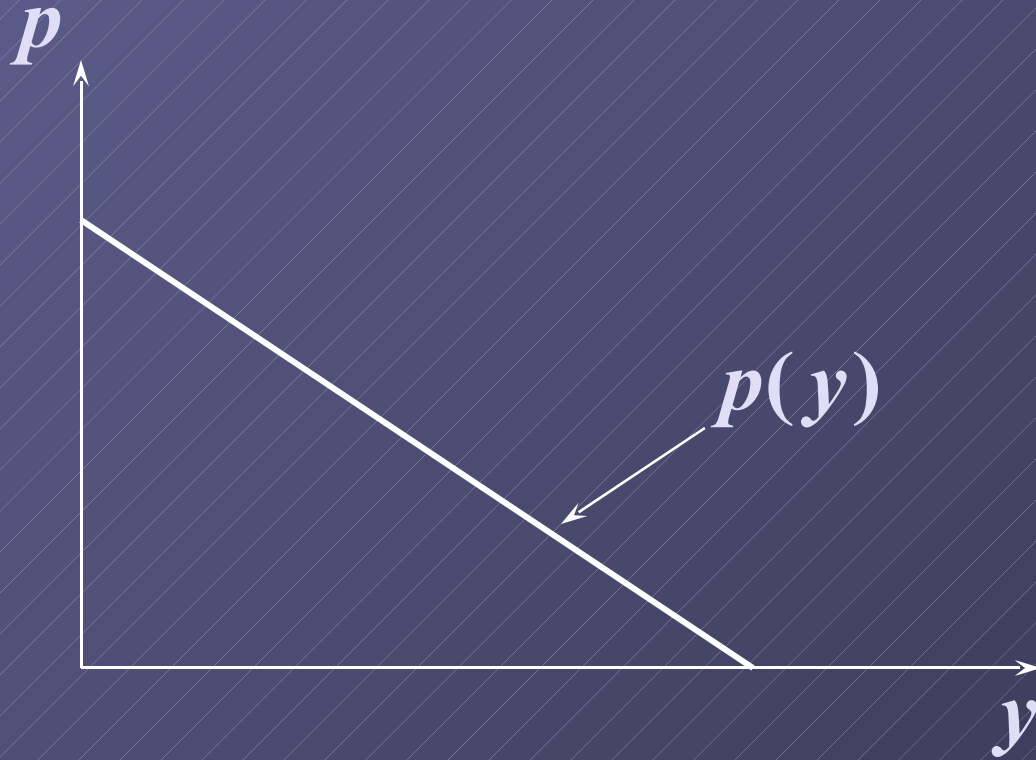
Profitability

Profit-maximization

$$\pi(y) = p(y)y$$

$$p(y)$$

$$MR(Y) = p'(y)y + p(y)$$

p

$p(y^*)$

y^*

y
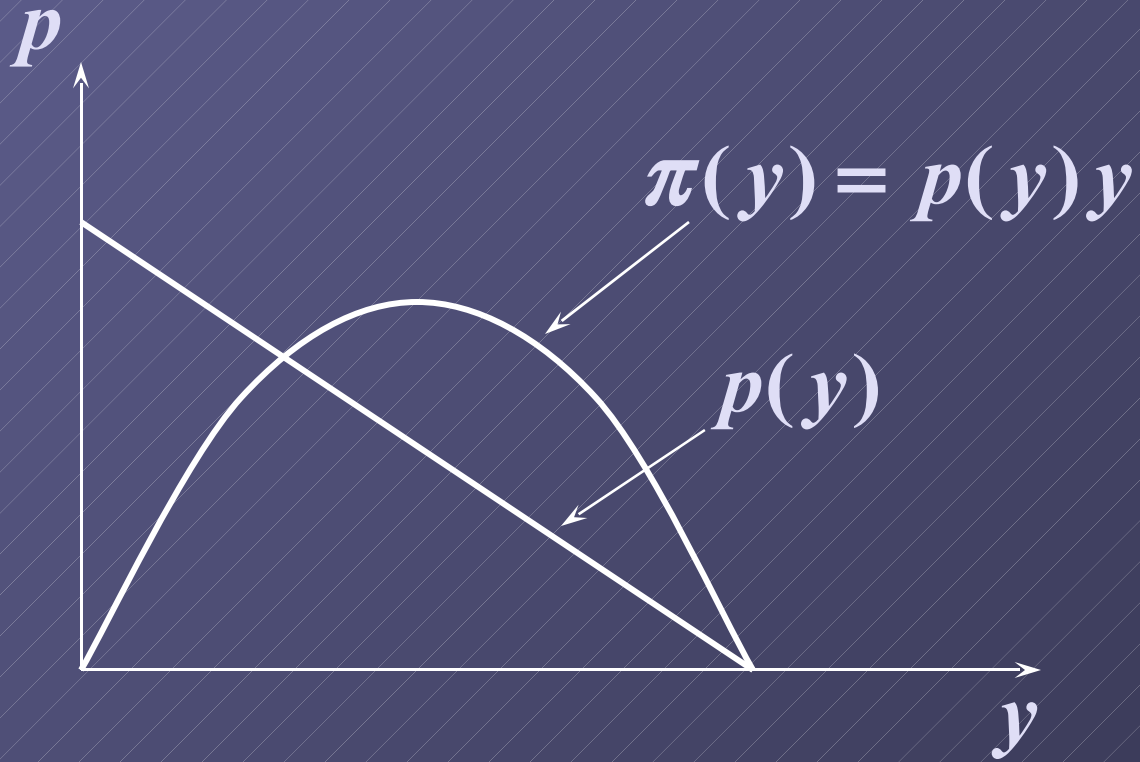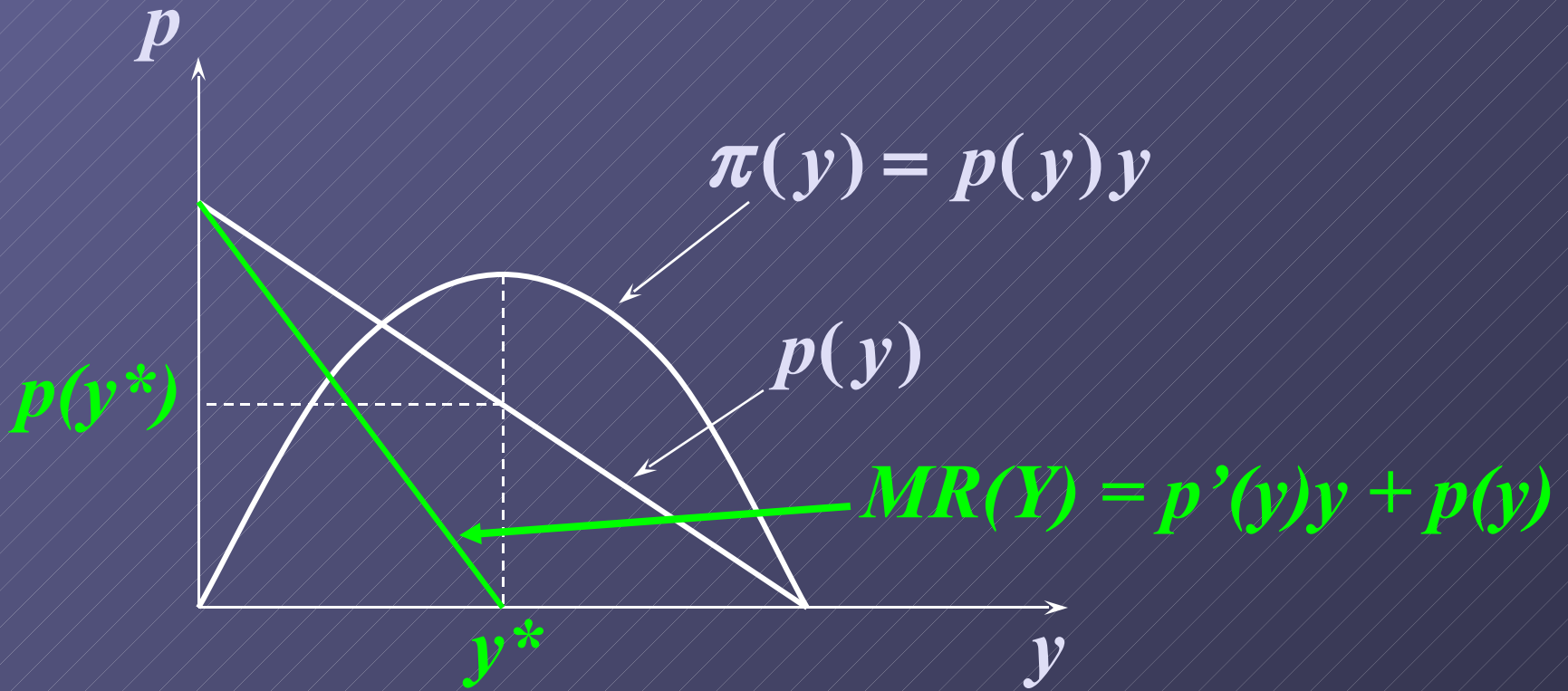
Suppose rights owner increases flexibility: Increases value to users (wtp)

p

$$P(Y) = \alpha\, p(Y)$$

$p(y)$
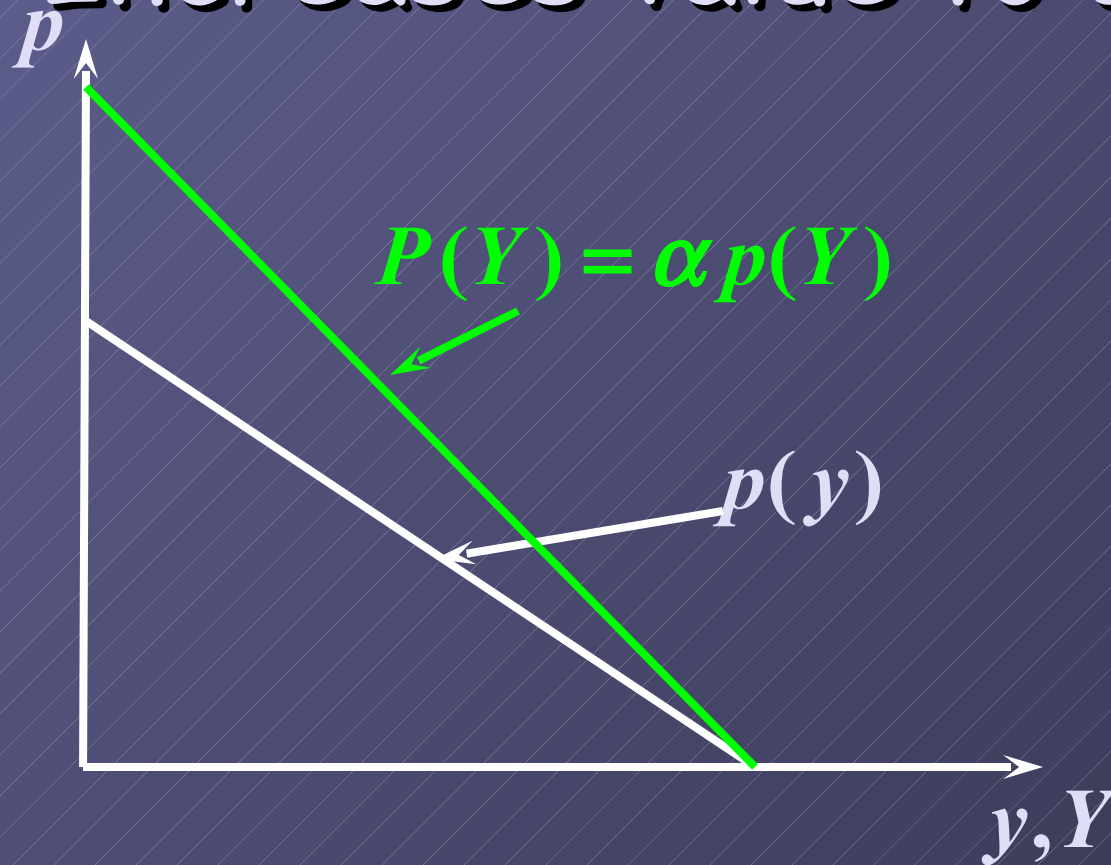
Y is consumption of more flexible good

$\alpha > 1$

y, Y

Profit maximization with "flexibility effect"
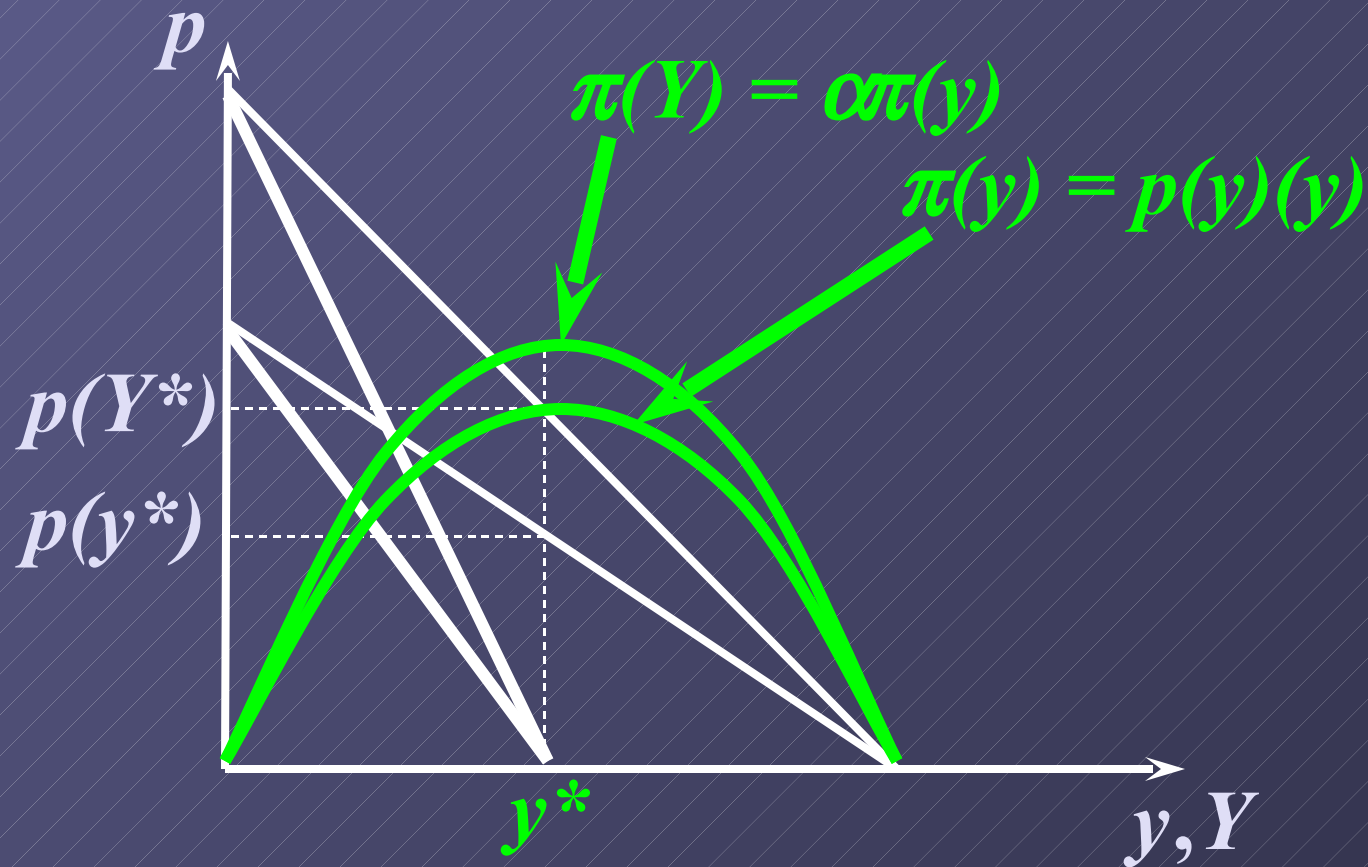
Profit maximization with "flexibility effect"
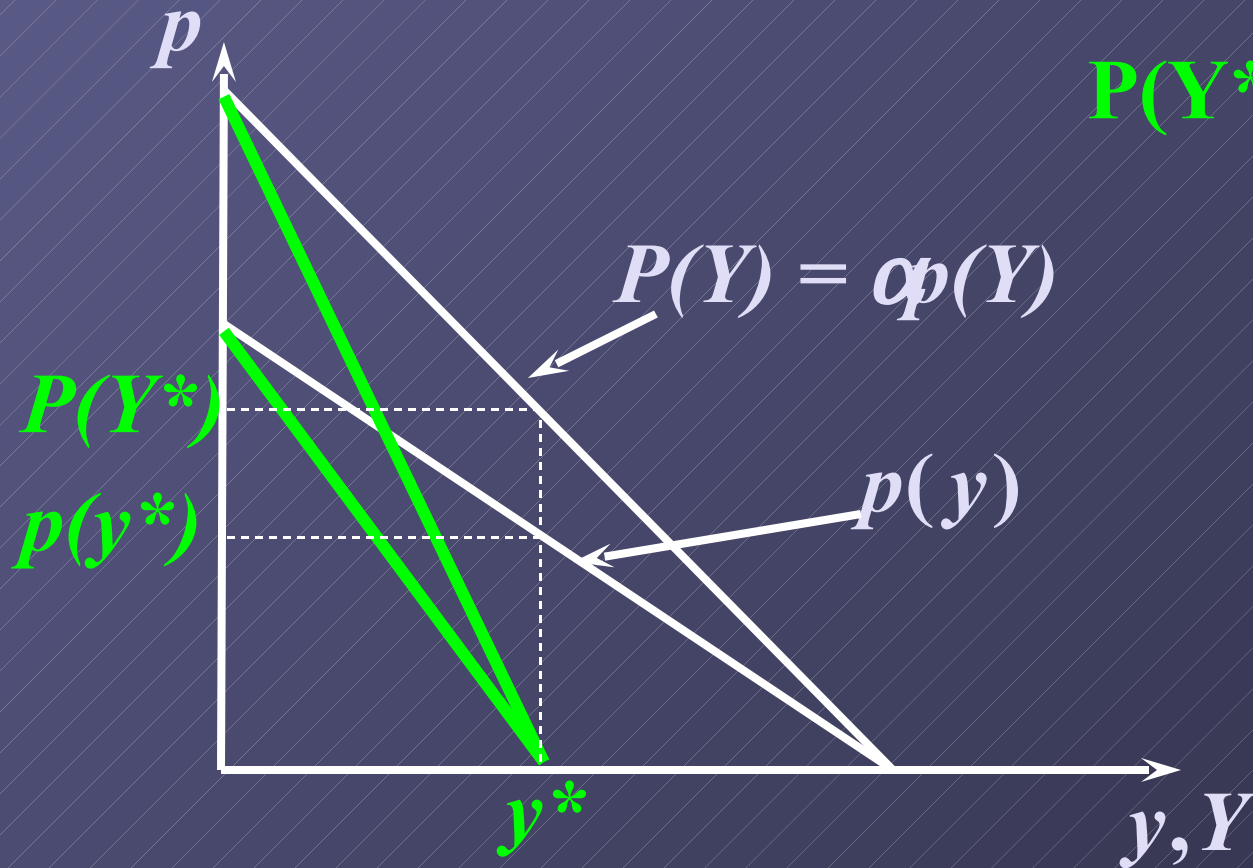
Increased flexibility increases outside options, fewer consumers want to purchase

p

$p(y)$

$P(Y) = \alpha p(Y) - \beta$

y, Y
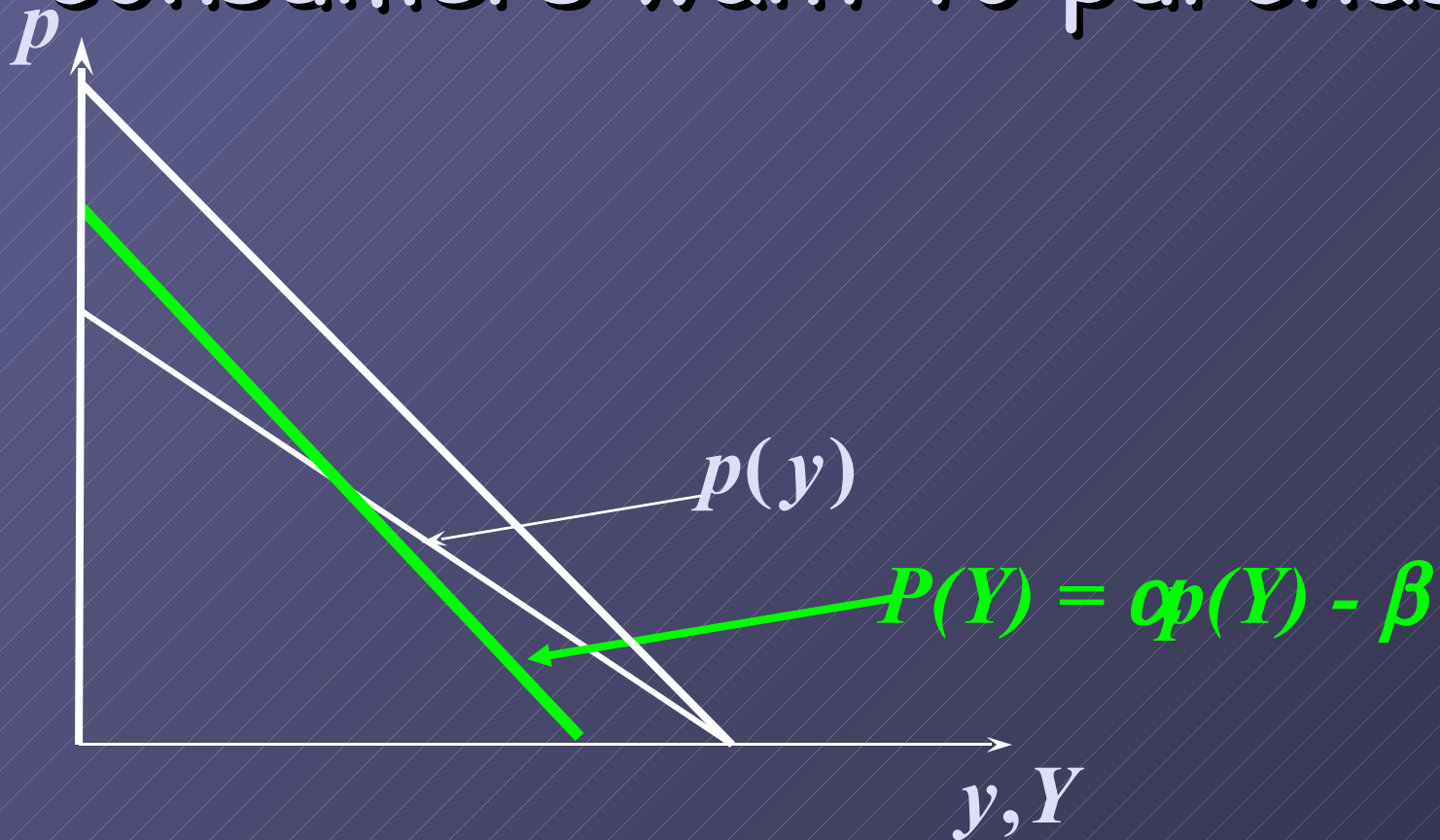
Profit maximization with both "flexibility" and "piracy" effects

$P(Y) = \alpha p(Y) - \beta$

$p(y)$

$MR(y)$

$MR(Y)$

$Y^* < y^*$

$Y^* \quad y^*$

p

y, Y
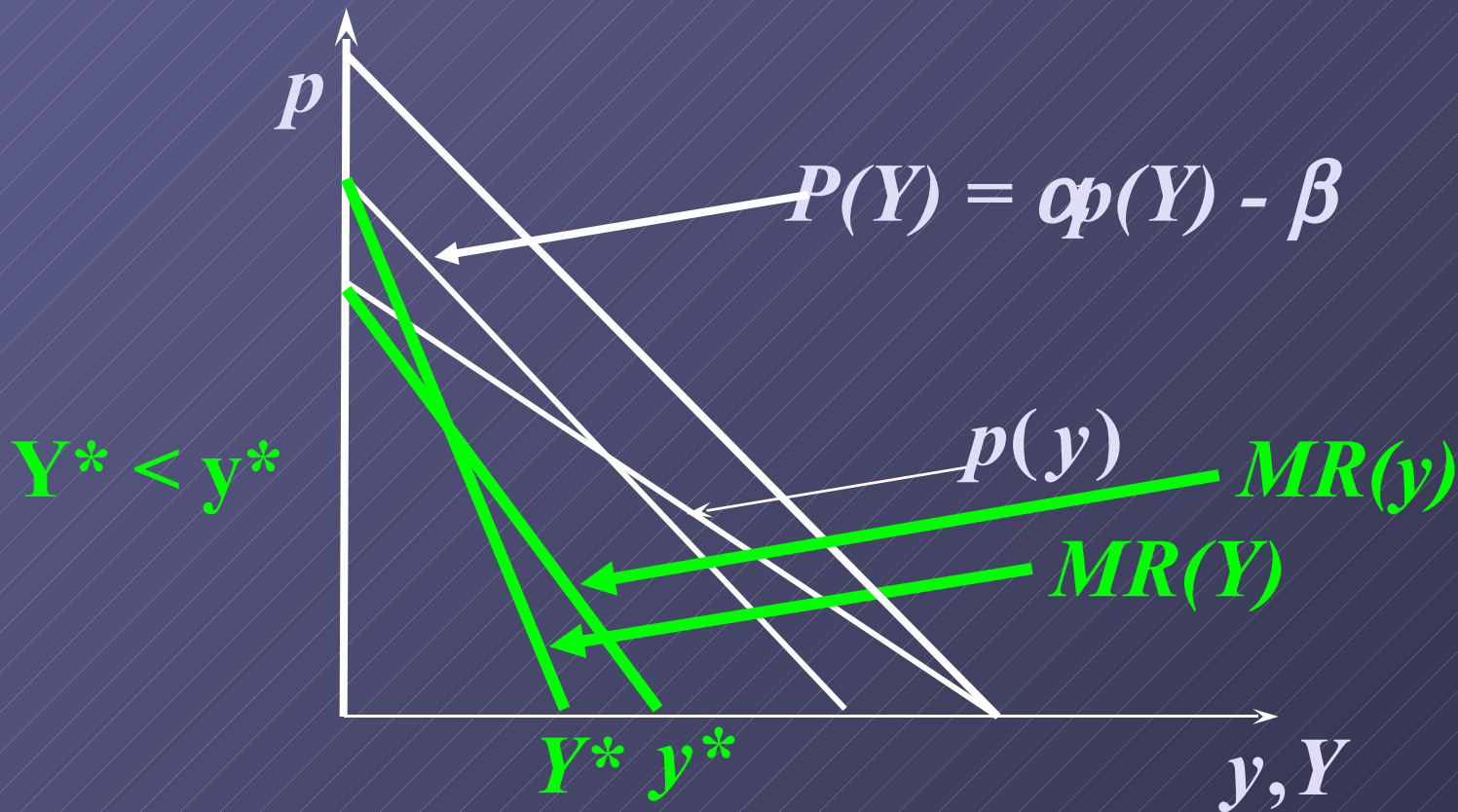
Shapiro and Varian provide historical examples of lower reproduction and distribution costs leading to higher content revenues.

"[Book] publishers and movie producers understood their *own* industries, but they didn't understand their *complementors'* industries."

SV p. 97

What does this mean?

Source: Shapiro, C. and H. Varian (1998). Information Rules (Harvard Business School Press). 97.

What is Jobs's argument?

Should music publishers abandon DRM?

What is RIAA/Warner argument?

If cheap to make perfect digital copies, how do you avoid losing most revenue to "sharing" and piracy?

Free trials

- Suppose rights owner considers increase in flexibility that gives consumers more options. This causes
  - an increase in consumption

$$Y = \beta y, \ \ \beta > 1$$

DRM flexibility

- The rights owner now allows a free trial period. This causes

  - an increase in consumption

$$Y = \beta y, \ \ \beta > 1$$

  and a decrease in sales per unit of consumption

$$y = \frac{Y}{\beta}.$$

DRM flexibility

- The rights owner now allows a free trial period. This causes

  - increase in value to all users $\Rightarrow$ increase in willingness-to-pay *per paid unit*

  - Let Y be units of consumption of the "higher quality" good (each unit obtained lasts longer, so Y units worth β y units of old good)

  - Firm can charge
    $P(Y) = \alpha p(Y), \alpha > 1$
    (that is, can charge a premium because the good lasts longer)

DRM flexibility

$$P(Y) = \alpha\, p(Y)$$

$$p(y)$$

p

y, Y
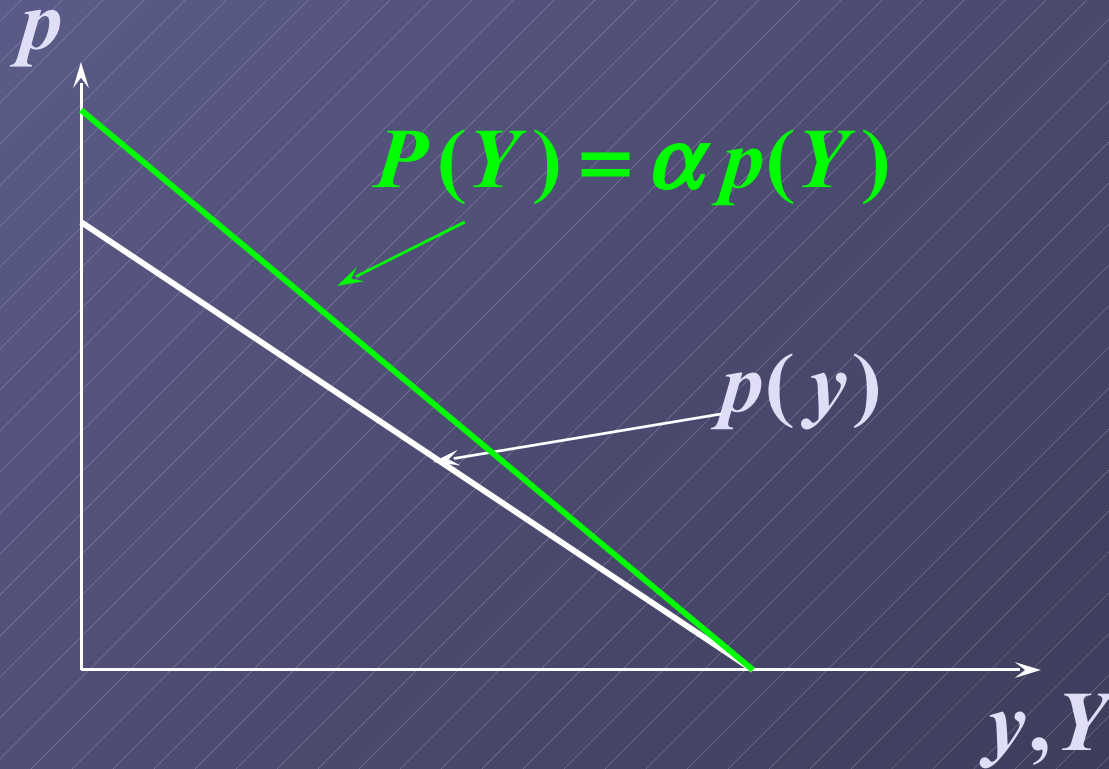
DRM flexibility

- The firm's problem is now to

$$\max_{Y} \; P(Y)\frac{Y}{\beta} = \alpha\, p(Y)\frac{Y}{\beta} = \frac{\alpha}{\beta} p(Y)Y.$$

DRM flexibility

- The firm's problem is now to

$$\max_{Y} \; P(Y)\frac{Y}{\beta} = \alpha\, p(Y)\frac{Y}{\beta} = \frac{\alpha}{\beta}\, p(Y)Y.$$

- This problem must have the same solution as

$$\max_{y} \; p(y)y.$$

DRM flexibility
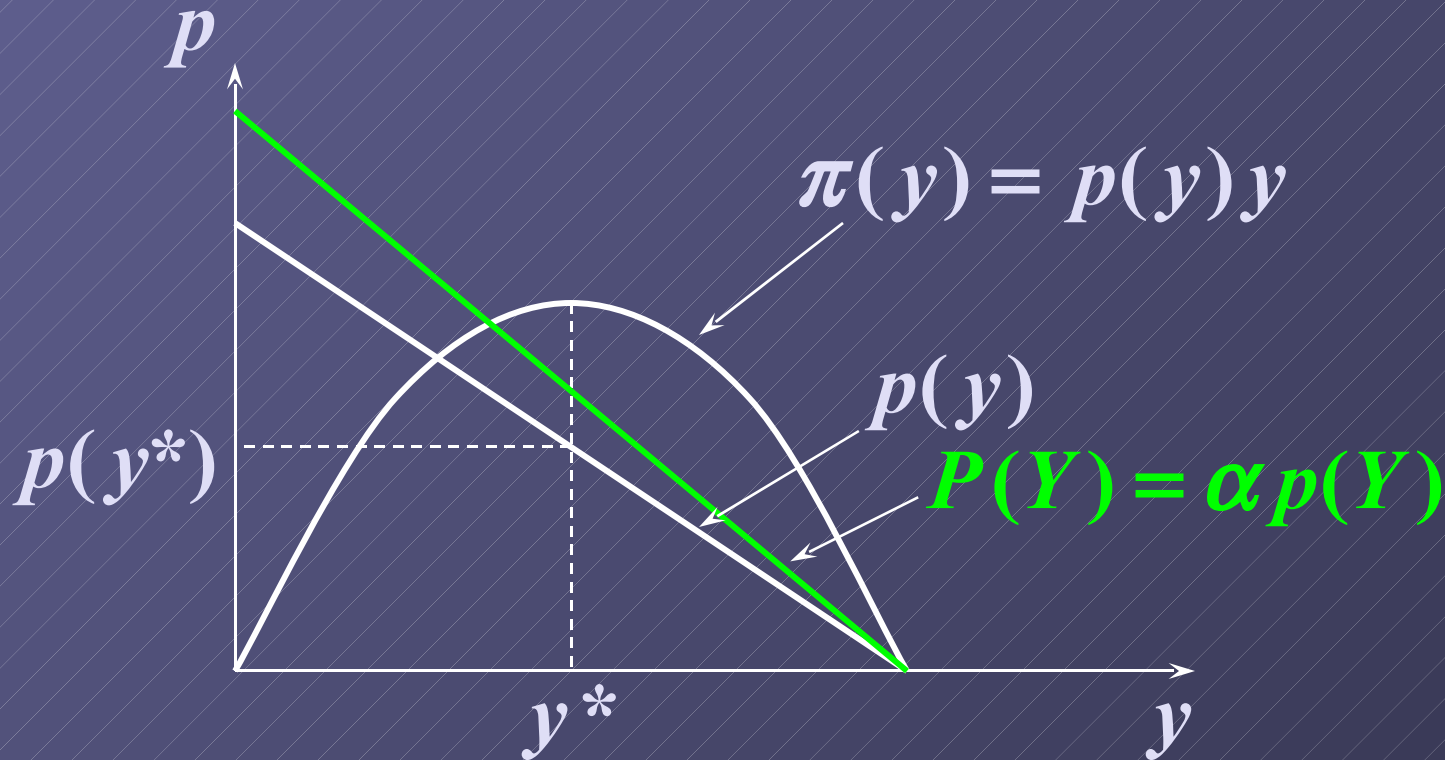
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$$\max_{Y} \ P(Y)\frac{Y}{\beta} = \alpha\, p(Y)\frac{Y}{\beta} = \frac{\alpha}{\beta}\, p(Y)Y.$$

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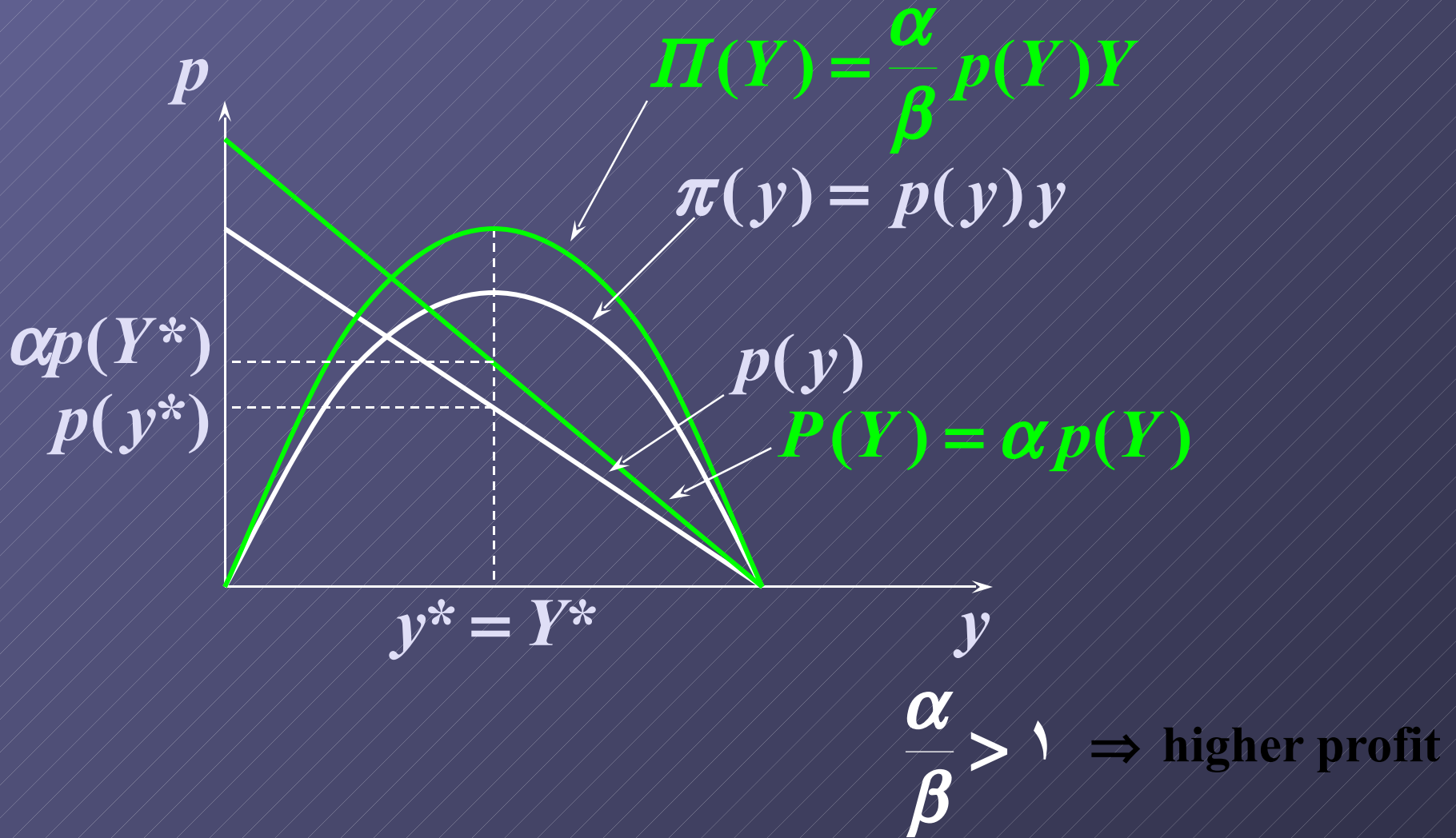
$$\max_{y} \ p(y)y.$$

- So

$$y^* = Y^*.$$

DRM flexibility

DRM flexibility

$$\Pi(Y) = \frac{\alpha}{\beta} \, p(Y) Y$$

$$\pi(y) = p(y) y$$

$$P(Y) = \alpha \, p(Y)$$

$$\frac{\alpha}{\beta} > \text{`} \implies \textbf{higher profit}$$

DRM flexibility

$$\Pi(Y) = \frac{\alpha}{\beta}\, p(Y)Y$$

$$\pi(y) = p(y)y$$

$$P(Y) = \alpha\, p(Y)$$

$p(y)$

p

$\alpha p(Y^*)$

$p(y^*)$

$y^* = Y^*$

y
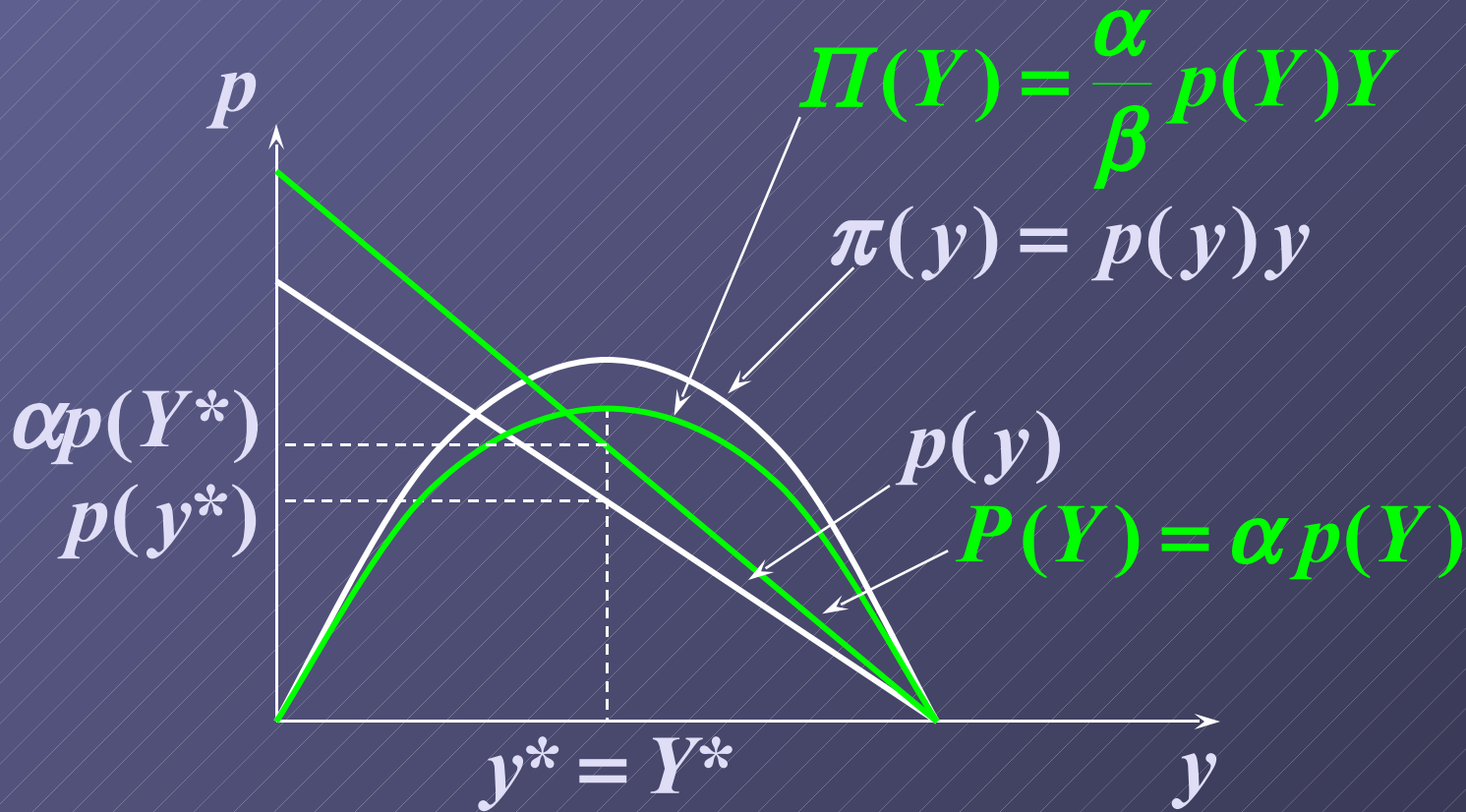
$$\frac{\alpha}{\beta} < 1 \;\Rightarrow\; \text{lower profit}$$

XXX When is giveaway profitable?

- When is $\alpha/\beta = 1$?

  - Suppose this was soap, and the giveaway is "20% free"

  - If user would buy same soap again anyway, then reasonable to assume gets approx. constant value from each ounce. So 20% "free" is worth 20% more: $\alpha=\beta=1.2$ (20% more uses, 20% more value)

  - Profit same

When is giveaway profitable?

- When is α/β < 1?
  - Suppose this is a "normal" good with diminishing marginal utility (e.g., ice cream)
  - 20% extra worth less than 20% of original quantity: α/β < 1, not profitable

When is giveaway profitable?

- When is $\alpha/\beta > 1$?
  - When the incremental *value* is greater than the average value
    - Free trial provides information for better purchase decision (option value)
    - Ensures against risk of running out