

Lecture 8

Monopoly pricing – part III



micro2
first module (m2)

Tying

- ★ Tying is when the seller **requires** the customer to purchase one good in order to purchase another
 - ◆ IBM mainframe and computer cards
 - ◆ PlayStation and game discs
- ★ Allows firm to **measure/estimate** demand and practice price discrimination more effectively
- ★ Goal is to extract more surplus from **enthusiasts** while not discouraging the usual **consumers**
- ★ It is **profit maximizing** because heavy users have more **inelastic demand**.

Case study

- ★ We will now examine the famous case of tying, that **Polaroid** applied in 1971
- ★ From the 60's to date the industry of photography **has changed** dramatically.



The amazing instant photography

- ★ In 1971, Polaroid **introduced** the SX-70 camera
- ★ Of course, Polaroid had filed for a **patent** for the camera thus, Polaroid had a **monopoly** in instant cameras
- ★ Polaroid **did not intend** to make profit from the camera!
- ★ The plan was that
 - ◆ the **camera** would be used as the **entry fee, A**
 - ◆ and **film roll** would be used as **per unit price, p**
- ★ So, profit would come from the **film sales!**
- ★ The only problem was that Polaroid **did not** have a monopoly in **film roll**.

Polaroid special film

- ★ Monopoly in film was the **most essential** for Polaroid if **ordinary film** could be used, its **price** would be close to MC
- ★ Polaroid **solved** this problem by making the camera **work only** with **Polaroid special film**
- ★ Polaroid developed a **monopoly** in both counterparts and used **tying** as a **two-part tariff** buying the **camera** was like an **entry fee**, then the real money were made from film sales!
- ★ Of course, producing a camera is **not free of cost** to the producer as is the entrance in a **bowling alley**, for instance.

Second-degree PD Tying

Polaroid's profit

★ Analytical framework

Price of film

Quantity of film

Cost of cameras

$$\Pi = p \cdot Q + n \cdot A - C_1(Q) - C_2(n)$$

Quantity of cameras

Price of camera

Cost of film

★ There was considerable **heterogeneity** of consumer demands in the industry of photography.

© 2013-18 Kosmas Marinakis, HSE m2 – Lecture 8 7

Second-degree PD Tying

Prices and success

★ Prices:

- ◆ The film's price was significantly **above** marginal cost
- ◆ The price of the camera was **cheaper** than what it would have been if the camera was priced monopolistically

★ Compared to what they would have paid **if regular** monopoly pricing was used:

- ◆ Usuals ended up **spending less** with the 2PT, because they did not consume much film
- ◆ Enthusiasts ended up **paying more** with the 2PT, because they used a lot of film.

© 2013-18 Kosmas Marinakis, HSE m2 – Lecture 8 8

Bundling

★ Bundling is **packaging** two or more different products together to gain a pricing advantage

★ Bundling might be a **profit maximizing** method of pricing, when simple PD is not possible

★ Bundling **requires** two things to work:

1. **Heterogeneous** customers
2. Demands must be **negatively correlated**.

© 2013-18 Kosmas Marinakis, HSE m2 – Lecture 8 9

Bundling

Case study

★ In 2004, Universal™ was the **distributor** of two great motion pictures:

- ◆ *Crash*
- ◆ *The Notebook*

★ Universal decided to **bundle** the two films, so that no movie theater could lease one without the other

★ **Why** would a company do this?.

© 2013-18 Kosmas Marinakis, HSE m2 – Lecture 8 10

Bundling

Without bundling

★ Willingness to pay by theater

	<i>The Notebook</i>	<i>Crash</i>
NY Theater	\$50,000	\$25,000
GA Theater	\$30,000	\$40,000

★ Renting the movies **separately** would result each theater paying the **lowest reservation price** per movie:

- ◆ If we charge 50K for *The Notebook*, revenue is 50K
If we charge 30K, revenue will be $2 \times 30K = 60K$
- ◆ If we charge 40K for *Crash* revenue is 40K
If we charge 25K, revenue is $2 \times 25K = 50K$
- ◆ Total revenue is $60K + 50K = 110K$.

© 2013-18 Kosmas Marinakis, HSE m2 – Lecture 8 11

Bundling

With bundling

★ Willingness to pay by theater

	<i>The Notebook</i>	<i>Crash</i>
NY Theater	\$50,000	\$25,000
GA Theater	\$30,000	\$40,000

★ Now assume that movies **are bundled**

- ◆ NY is willing to pay 75K for the bundle
- ◆ GA is willing to pay 70K for the bundle

★ If we charge 70K for the bundle, **both** theaters will buy
total revenue will be 140K

★ That is, **30K more**, just because of bundling!.

© 2013-18 Kosmas Marinakis, HSE m2 – Lecture 8 12

Bundling

Reversed relative valuations

- ★ Willingness to pay by theater

	The Notebook	Crash
NY Theater	\$50,000	\$25,000
GA Theater	\$30,000	\$40,000

- ★ More profitable to bundle because **relative valuations** of two films are **reversed**
- ★ Demands are **negatively correlated**
 - ◆ NY is willing to pay **more for The Notebook** than Crash
 - ◆ GA is willing to pay **more for Crash** than The Notebook

© 2013-18 Kosmas Marinakis, HSE m2 – Lecture 8 13

Bundling

Non-reversed relative valuations

- ★ Another case with **positively correlated** demands

	Kill Bill 2	Alexander
LA Theater	\$20,000	\$12,000
TX Theater	\$15,000	\$9,000

- ★ If movies were offered **separately**:
 - ◆ Kill Bill 2 will go for 15K and Alexander for 9K
 - ◆ Revenue would be $(2 \times 15K) + (2 \times 9K) = 48K$
- ★ If the movies are **bundled**:
 - ◆ Price for the bundle should be set to 24K
 - ◆ Revenue would be $2 \times 24K = 48K$ again!
- ★ Bundling makes **no difference**

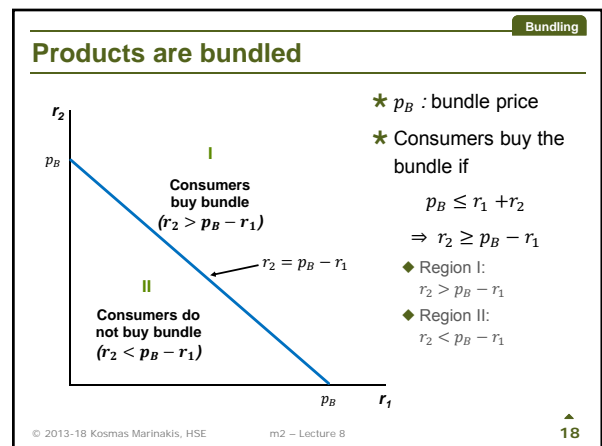
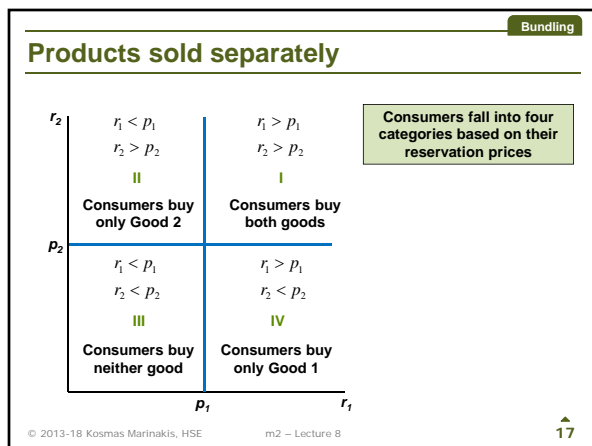
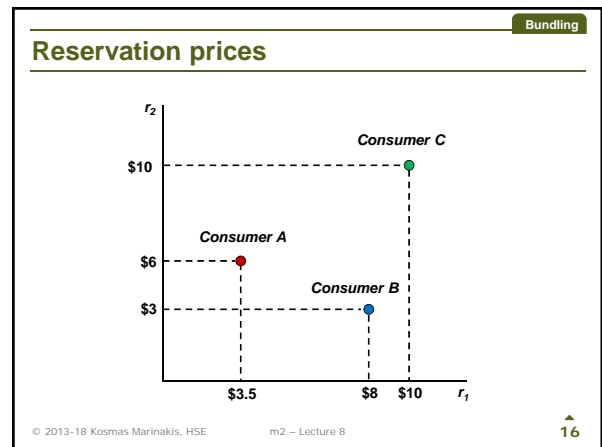
© 2013-18 Kosmas Marinakis, HSE m2 – Lecture 8 14

Bundling

Two goods – many consumers

- ★ What if we have **many** consumers with **different** combinations of reservation prices for the two goods?
- ★ We can represent consumption decisions **graphically**
 - ◆ r_1 is **reservation** price of consumer for **good 1**
 - ◆ r_2 is **reservation** price of consumer for **good 2**

© 2013-18 Kosmas Marinakis, HSE m2 – Lecture 8 15



Bundling

Effectiveness

- ★ The effectiveness of bundling depends upon the **degree of negative correlation** between the demands of the two goods
best when consumers who have **high** reservation price for Good 1 have a **low** reservation price for Good 2 and vice versa
- ★ We can see this **graphically** looking at positively and negatively correlated prices

© 2013-18 Kosmas Marinakis, HSE m2 – Lecture 8 19

Bundling

Positively correlated demands

© 2013-18 Kosmas Marinakis, HSE m2 – Lecture 8 20

Bundling

Negatively correlated demands

© 2013-18 Kosmas Marinakis, HSE m2 – Lecture 8 21

Bundling

Mixed bundling

- ★ Practice of selling two or more goods **both** as a package and individually
- ★ This **differs** from pure bundling where products are sold only as a package
- ★ Mixed bundling is good strategy when **one** of the following happens
 - ◆ Demands are somewhat negatively correlated
 - ◆ Marginal cost of production is significant

© 2013-18 Kosmas Marinakis, HSE m2 – Lecture 8 22

Mixed bundling

Mixed vs. pure bundling with MC

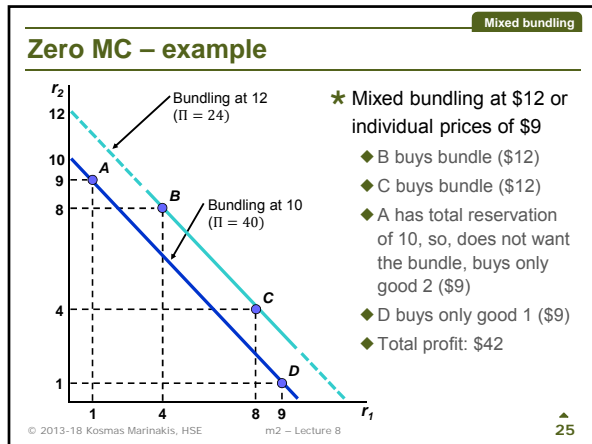
© 2013-18 Kosmas Marinakis, HSE m2 – Lecture 8 23

Mixed bundling

Mixed bundling with no cost

- ★ Even if **MC is zero**, mixed bundling can still be more profitable if consumer demands are **not perfectly** negatively correlated
- ★ Lets see a **figure** with an **example...**

© 2013-18 Kosmas Marinakis, HSE m2 – Lecture 8 24



Mixed bundling

Bundling in practice

- ★ **Car purchasing**
bundles of extras such as *subwoofer* with *vanity mirrors*
- ★ **Vacation travel**
bundling *hotel* with *air fare*
- ★ **Subscription television**
sports and *fashion* channels bundled together

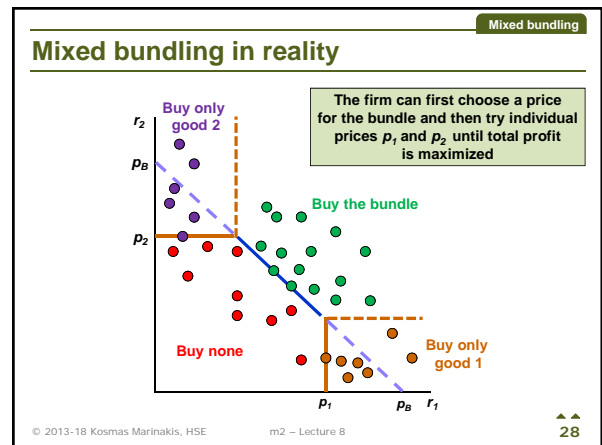
© 2013-18 Kosmas Marinakis, HSE m2 – Lecture 8 26

Mixed bundling

Mixed bundling with data

- ★ **Real firms** use market **surveys** to estimate reservation prices
- ★ The **goal** is to design a **pricing strategy** from the survey results
- ★ The following **example** illustrates how a company will **interpret** the data to conduct mixed bundling

© 2013-18 Kosmas Marinakis, HSE m2 – Lecture 8 27



ευχαριστώ!
(thank you!)

- Kosmas Marinakis
- www.kmarinakis.org
- kmarinakis@hse.ru
- kosmas_marinakis
- Kosmas Marinakis
- t.me/kosmas_teaching
- @Kos_Marinakis

WARNING

This printout is provided as a courtesy, so that lecture time can be dedicated to note taking. These slides are **not standalone material** and should be used strictly as **reference**, side by side with notes taken in the lecture. Studying solely from the slides **is not recommended** and might in some cases **mislead** those who have not attended the relevant lecture. **Less than 5% of tasks in tests and exams can be answered from the slides.**