**W10 V3 Types of Price Discrimination**

0:09  
In this video, we're going to talk about some types of price discrimination that are not perfect.

0:14  
And for each one of these, we're going to focus on the conditions needed because that's what differentiates them.

0:19  
Again, a reminder that we're focusing on a monopolist doing this, but the general insights hold through for other contexts as well.

0:25  
As long as firms have market power, OK.

0:29  
So we're still working under the condition that the firms have those three conditions of price discrimination that they're looking for.

0:36  
These two are given, right?

0:37  
Because for now, we're not going to focus on that.

0:39  
And this entire video is going to be focused on the different types of information that are available to the firm and how they can use or operationalize that different information differently depending on the context that they're in.

0:55  
Let's start off with the most common One of the things that you may be most familiar with, this idea of group or third degree price discrimination.

1:03  
OK, so assuming arbitrages, you know, can be restricted and for some market power, the information that the firm requires for 3rd degree price discrimination is the following.

1:13  
One is they know what Group A firm, an individual belongs to.

1:21  
OK, This is clearly stamped on the individual's forehead.

1:26  
The firm can see it and the consumer either cannot change it or it is really hard for a consumer to change.

1:34  
Example, Ioffer different prices to children versus adults.

1:38  
It's really hard for an adult to pretend to be a child and vice versa, right?

1:42  
So we're looking for something that's a clearly identifiable label that's on your forehead.

1:47  
The firm can see it and you can't get rid of that label.

1:49  
OK #2 information on willingness to pay.

1:55  
I would like as much information as possible.

1:58  
In fact, I would like information on individual willingness to pay, but I do not have this here.

2:04  
Individuals within a group can be different, but all I know is group demand.

2:10  
OK, so for example, this is demand for students.

2:15  
All of the students in their willingness to pay students are different.

2:19  
Some students have a high willingness to pay.

2:20  
Some students have a low willingness to pay.

2:23  
But I don't know an individual student's willingness to pay.

2:26  
I just know this person here belongs in the student group.

2:31  
That's their group, OK?

2:33  
And for all students?

2:34  
For the group of all of the students together, I put them all in one room.

2:37  
I know what the entire market demand for students is, but I do not know an individual student's willingness to pay.

2:45  
OK do I have any more restrictions?

2:47  
Yes, you have some more restrictions in that you are allowed by the contacts by whatever is easiest for you.

2:55  
But this is another condition that we impose for 3rd degree is that we can only charge people a per unit price.

3:01  
In the previous video we talked about how nice fixed fees are and we will explore them.

3:05  
But one of the restrictions you're imposing when you do group degree price discrimination is that you can only charge a per unit price and everyone in the same group gets the same price.

3:17  
So every student, regardless of whether where they are in the willingness to pay, gets the same student price.

3:23  
Every non student gets the same non student price per unit price.

3:27  
But student price can be different from non student price, right?

3:30  
That's what price discrimination is.

3:32  
Same good, same movie.

3:34  
Student price is different from the non student price.

3:37  
OK, this is where I want you to start.

3:40  
When you are thinking about group price, price discrimination, lots of students jump immediately to the predictions.

3:46  
Do not go there because we cannot get to predictions unless we're looking at whether these conditions are possible, whether I have this information or not.

3:53  
So start here and then go to the predictions.

3:57  
OK, So what are the predictions?

4:00  
Basically what we're doing is we're starting out in a group where everybody's all mixed up, OK?

4:05  
This is the entire demand for movie tickets, the entire market demand.

4:11  
If I'm the only monopolist for movie tickets, then I'm going to do what we've done before, find my marginal revenues, hit marginal revenue equal to marginal cost to find my quantity, project that back up.

4:23  
And that's going to be the market price for a movie ticket.

4:26  
All the entire market gets that same price per movie, OK.

4:33  
But now you have some enterprising, you know, people you've hired and they start digging a little bit more and they're like, you know what, hidden in this market you've got two separate groups, students and non students, right, or people who like movies and people who don't like movies, whatever it is, you've got two separate market segments.

4:51  
So in this market, I want to break up the market into two separate segments.

4:58  
So segment one and segment 2.

5:04  
Now you can divide the world into many different ways, right?

5:07  
Or people are different on many different dimensions.

5:10  
What you are looking for is 2 separate market segments that are sufficiently different in their demands.

5:19  
OK, Sufficiently different in their group demands.

5:23  
Because if you're going to charge people different prices, then you're really going to make sure it's worth your while.

5:27  
And if they're not very different, then just keep them all together, right?

5:30  
So two different market segments.

5:33  
Now, if I want to do group price discrimination, not only do I need to have two segments, but I need them to have this label on their head that they cannot erase in order to get a lower price.

5:45  
OK, so for example, if my segments were people who love movies and people who don't care too much about movies, but they're willing to go for a movie or two in that sense, great.

5:55  
I can clearly anticipate that those demands will be different across the groups, but it's going to be really hard for me to observe a label on the head that said you love movies and you don't.

6:04  
Because if I'm going to get a lower price, if I don't claim I don't like movies, I'm going to pretend very easily.

6:09  
I'll say that I hate movies, right?

6:11  
On the other hand, if I've got students versus non students, and students get a lower price, the only way to get the lower price is to have a student ID card.

6:21  
And that's, let's assume harder to get then that's a segment that I can start exploring, right.

6:28  
So I need to have two segments that are sufficiently different in their demands and each segment has a label on their head that's very hard for them to get to be able to switch.

6:39  
OK.

6:39  
So let's take this thing, let's take the starting price.

6:43  
So this is the starting price, this, this black price here, OK, this is the price that everybody is charged.

6:50  
I'm going to take this, this market demand curve and I'm going to break it up into the two segments to see do I want to adjust this price across the segments or not.

7:00  
Now remember I have a restriction in here that I can only charge a per unit price.

7:07  
OK.

7:07  
So I'm going to, if I'm breaking these up in here, I'm looking for a per unit price for students, per unit price for non students, making sure that everyone within the group gets the same price.

7:18  
OK.

7:18  
So here's what I'm doing.

7:20  
And I know that these demand curves don't actually match the ones that I drew in the on the previous slide, but I've chosen it to make this case stronger if you were OK.

7:29  
So I've taken that market demand curve and my analyst has broken it down into two segments, segment one with the red demand curve, segment 2 with the blue demand curve.

7:40  
These are group market demands.

7:45  
OK, so individual people, students, non students will be different but the lines correspond to the group demand.

7:54  
Now this here is the original price.

7:57  
This is the original price.

8:01  
And now I want to come in and say, if I can break these two markets up into separate groups and figure out an optimal price for each group separately, do I want to stay with this original price or do I want to change it?

8:16  
OK, Now it's hard to put those two on this on the same diagram.

8:19  
So let's separate them out here.

8:20  
OK.

8:21  
So these are my two separate markets.

8:26  
Each one of them has their demand curve.

8:28  
These are my costs, right?

8:30  
I'm just going to make the simplifying assumption that I've got the same marginal cost across both of those markets, OK.

8:36  
And I'm starting off with this price in the market.

8:38  
Do I want to keep this price or do I want to change it?

8:43  
Now if you think about what I've done is I've separated these two markets out.

8:46  
I'm in complete control because I have the market power.

8:49  
I get to choose the price in the red market and the price in the blue market.

8:54  
I'm not going to pay attention to the black market price, right?

8:58  
The combined market price.

8:59  
I'm going to go in and say what's my marginal revenue, right and set P equals to MC and continue on from there.

9:08  
So I'm not necessarily going to even pay attention to this black price.

9:11  
I'm going to pretend as if it doesn't exist and then see whether I can adjust prices up or down.

9:19  
Now you can do that with a calculation and you are going to have to do that as a calculation on the problem set.

9:24  
But let's take a step back and say what's the largest story are happening in here?

9:27  
OK, so I have chosen a price based on the combined market.

9:33  
Now I'm going to break up this market into two separate markets and I'm going to come in here and see do I want to keep this price or do I want to change it.

9:44  
Since these are now effectively little tiny monopoly markets of its own, I can use the insights from monopoly, right?

9:51  
Where on the curve do I want to price?

9:55  
So for example, we can bring in the concept of elasticity in here, right?

10:00  
So if I'm looking at this demand curve, the red demand curve, and I'm saying you know what, this price, the original starting price ends up being on the elastic portion of the demand curve, right?

10:15  
This is the unit elastic and this is the inelastic.

10:21  
OK, same thing for here, except here it's the opposite.

10:25  
This is the unit elastic, this is the elastic and this is the inelastic.

10:34  
OK.

10:35  
So again I've drawn it a little bit arbitrarily, but I hope you you get the idea that I'm I'm going for.

10:41  
So if I'm looking at the blue market, right and I'm saying look, the current price that I'm charging in the sub market happens to be on the inelastic portion of the demand curve.

10:51  
In that sense, what am I going to do?

10:53  
We use the insight from monopoly, raise the price because on the inelastic portion of the demand curve, raising price increases revenue and lowers cost, right.

11:04  
So in this market here, you are going to raise prices.

11:10  
Now that's going to be good for you because we know from before raising prices increases profits, right.

11:16  
But what about consumers?

11:19  
They're not necessarily going to be happy about that, right?

11:21  
Before they were buying, let's just say we end up at this portion here, right?

11:25  
This becomes our new price.

11:27  
Let me put it in blue, since this is our new blue.

11:31  
So this is the price in market two, OK.

11:35  
Consumers are not going to be happy because they are going to face higher prices.

11:39  
Their consumer surplus is going to go down because of that and they're going to get lower quantities.

11:43  
So consumers are going to be very unhappy, right?

11:46  
Total surplus in the market is going to be lower because they're selling fewer units compared to before in this sub market, OK.

11:53  
But producers are going to be happy, right, Because now they're able to increase their producer surplus.

11:57  
They wouldn't do that if it was not profit increasing, right?

12:01  
Profit maximizing increase producer surplus.

12:04  
What about in this case where they're right now on the elastic portion?

12:07  
It could be in this depends on the calculations, right?

12:10  
You potentially want to lower prices a little bit over here to P1.

12:16  
Why?

12:16  
Because remember elastic demand, you lower the price of teeny tiny bit, you get this huge increase in quantity and that's good for you, that increases your profits.

12:25  
So here consumers are going to be happy because now this is their consumer surplus compared to before they're really happy, right?

12:32  
Lower prices and higher quantity and you're willing to do it as well because you're producer surplus is increasing because otherwise you wouldn't do it right.

12:39  
So in this market here I get consumer surplus increasing, producer surplus increases and total surplus increases because I'm producing more this market.

12:48  
On the other hand, producer surplus is going up.

12:51  
Otherwise I wouldn't do this, but consumer surplus and total surplus are going down because I'm kind of producing less.

12:57  
Notice again that I'm kind of taking a shortcut here by assuming no externalities.

13:02  
That's just because we haven't.

13:04  
We don't have a way to deal with externalities just yet.

13:08  
OK, so group or third degree price discrimination, I'm able to separate the group with different demands, OK.

13:17  
But remember I need to be able to do those for groups that have a label on their head that that was going to prevent them from getting a lower price.

13:25  
If there's a way that I can pretend to be the other group, then there's no way I'm going to get the higher pay, the higher price.

13:30  
I'm going to sneak in and get the other group price right.

13:33  
The restriction that we're imposing on on 3rd degree price discrimination is that the you get the same per unit price.

13:41  
And this is something that students sometimes forget per unit price for all group members, but it can differ across groups.

13:48  
OK, so label different group demands because I know group demand, I don't know individual demand and I have a restriction with the per unit price, What are the implications going to be right?

13:59  
I'm now going to pretend to be a little monopolist in each one of those groups.

14:02  
I'm going to choose the group price by.

14:05  
Marginal revenue equals marginal cost.

14:08  
And relative to the combined market price, you're going to notice patterns, right?

14:14  
One simple, simple pattern going to be like, you know what higher willingness to pay higher price, but more generally and kind of more tied to this idea of elasticity.

14:25  
If you've got inelastic demand at that starting point, your price is going up, right, because that's the way that firms can scoop up surplus.

14:33  
You're not going to be happy about that.

14:35  
But that's what's going to happen if we can separate it out.

14:39  
So pay attention to those details and think about who's going to be happy, who wins, who loses and why.

14:44  
The firm wants to do what they're doing for this because consumer surplus will be different across those two groups.

14:55  
Now let's switch to 2nd degree price discrimination.

14:58  
Again, the difference between third, first, second is all going to boil down to what information do we have and what are we able to do here?

15:06  
The information we have is that I know as a firm that there are different consumer types.

15:11  
I know how many types there are and I know how many consumers there are of each type.

15:16  
OK, And even better, not only do I know the different types, I know each types demand curve so I can go narrow down to the individual and I know the individual's Marshall willingness to pay.

15:28  
This sounds fantastic, and it gets even better because now you can charge a per unit fee, but you can also charge a fixed fee so you can scoop up a whole bunch of surplus, right?

15:39  
Second degree price discrimination sounds really great because you have more information and you can have a more flexible pricing schedule.

15:47  
However, it has a big downside in that it doesn't know an individual consumers type.

15:54  
So if I knew your type, I would do all kinds of stuff because I have all of this information and I have flexibility.

16:00  
But when you come to me as a firm, I do not know your type.

16:05  
Which means that now you can pretend, right?

16:07  
If you actually are the high willingness to pay type, you're going to pretend that you really don't care about this good at all, because that's going to give you a lower price.

16:17  
And this is what makes it really hard and really complicated for the firm to deal with Good lots of information, flexible prices, bad.

16:25  
You cannot tell them apart.

16:27  
You do your best, right.

16:29  
It's done as much as you can at the firm in terms of market research, in terms of identifying it.

16:34  
But at some point they all these consumers look identical to the firm and that's when we start thinking about second degree price discrimination.

16:43  
OK, so the knowledge of an individual demand curve means that I can now scoop up additional surplus in terms of fixed fees.

16:54  
So when you're thinking about second degree press discrimination, you now have an additional tool at your disposal to scoop up surplus, which is fixed fees.

17:05  
OK, since I cannot identify an individual's type, I now have to offer multiple pricing schemes.

17:15  
OK, because I know that there are multiple types Ioffer what we call a menu of prices or multiple price.

17:28  
You can do price schemes, price quantity, packages, however you want to Think about this.

17:35  
More flexibility means more flexibility in terms of package design.

17:38  
But you have to offer more than one because you're designing for different types and you are saying you're going to end up, if I've done my job correctly, as the firm choosing the package that's meant for you.

17:52  
You happen to be the high willingness to pay.

17:54  
I'm going to choose a package where you want to choose a package with a high price.

18:00  
Like why would you do that?

18:01  
Right.

18:01  
If there's a lower price, you would choose a lower price.

18:04  
If the firm can't tell.

18:05  
But somehow I've got to be smart as a firm think about what you're going to do and then decide no, you know what as a high willingness to pay consumer I don't want.

18:15  
It's actually worse for me to choose the lower price package.

18:20  
What could that be right?

18:21  
What on earth is going to get a person to choose a higher price?

18:26  
And the answer is your price, the low price, which is the good thing is gonna come at with an obstacle.

18:34  
Now this obstacle looks at many different forms in depending on how creative you are and forms can get really creative and here can be fantastic, right?

18:44  
But the key here is if you want the lower price, you're gonna have to jump this hurdle.

18:49  
So only the people who really don't want to jump this hurdle are going to pay the higher price.

18:54  
And if I choose the hurdle correctly, I can make sure that I find a hurdle that the high willingness to pay people don't want to jump and that way I can charge them the higher price.

19:08  
So I'll give you an example that I get caught on a lot of times, this idea of when a book is being released.

19:15  
OK, so I love to read books.

19:17  
There's books that release and when they're released, they're released in a hardcover versions and the price is much higher.

19:24  
You want the cheaper paperback version.

19:25  
You've got to wait.

19:27  
OK, now for the firm, they're effectively identical because the cost of producing A hardcover is very similar to the cost of producing A paperback.

19:34  
They're not that different.

19:36  
But to me, right, again, it's the same book.

19:39  
So again, it's identical.

19:40  
I'm really reading the book.

19:41  
I don't care whether it has a hardcover or not, but the difference is the waiting time.

19:46  
The obstacle with that is going to be waiting right time.

19:51  
So if you're gonna say, oh, you can get the book now, it's released right now, you can get the book.

19:56  
We gotta pay a higher price because if you wait long enough, you can get the lower price, but you're gonna have to wait to read the book that the time is the hurdle now for the people who have the high willingness to pay, which is people like me.

20:11  
For my specific thing, if time is what I really don't want to wait, so that's a good obstacle to choose for me.

20:16  
Don't choose anything else in there.

20:18  
Don't say, oh, here you have a paperback, but the paperback is going to look pretty.

20:21  
I don't care about that.

20:22  
I want to read the book.

20:24  
So if you choose the right obstacle, which is time, I don't want to wait for long.

20:28  
I would rather pay a higher price that makes me better off.

20:32  
OK, that's one example of second degree price discrimination.

20:35  
Another example is end of season sales.

20:37  
Right here comes this jacket you love this jacket.

20:40  
It's bright pink and it just makes you so happy to see it.

20:44  
You can pay a lot of money for it now and have it now and wear it in winter when everyone's wearing this winter and look really good.

20:51  
Or you can wait for the end of season sales, but that happens at the end of winter and you're going to get a very few chances to to to wear them.

20:59  
So I'm going to give you a lower price, but I'm going to take away some of the enjoyment from that.

21:02  
And if I've chosen it correctly, people with a high willingness to pay will buy the jacket at the high price because they're not willing.

21:10  
The obstacle is too costly for them compared to someone with a low willingness to pay, right?

21:16  
You can also see this in terms of bargaining.

21:18  
I can determine your willingness to pay by talking to you and making you go through this process of negotiating for prices.

21:25  
And I really don't like to negotiate.

21:26  
I want this good now and this process is is hard for me.

21:29  
So I will just pay the higher price.

21:32  
OK.

21:32  
That's what I really want you to focus on.

21:34  
When we have Game theory introduced next topic, we'll kind of see a better way of thinking about the strategic interactions.

21:42  
Here's another way of thinking about second degree of price discrimination, quantity discounts.

21:46  
You guys have seen this, right?

21:48  
You'll say, oh, buy the 1st 5 units or the first, let's say Q1 units, you pay the high price, OK.

21:58  
And then they say you want to buy more, please buy more because the next units, let's say from Q1 to Q2, I give you a lower price on that.

22:10  
Now why does the firm want to do that?

22:11  
Because what the firm is saying, here's the high price, and at this high price, I'll offer this per unit price for up to Q1 units.

22:24  
Now I want you to buy more, so I've got to drop the price.

22:27  
And if I drop the price to, let's say place, you're gonna want to buy more units, right?

22:33  
So you can buy more units.

22:35  
But I don't want to lose the surplus from this first unit.

22:37  
So I'll say this lower price is only available for these next few units.

22:42  
This way I'm keeping you paying the high price for those first few units.

22:48  
Your consumer surplus is really low.

22:50  
This consumer surplus that you would have gotten if I had charged all of the units as PL.

22:56  
which I would have done before.

22:58  
I'm now scooping up this producer surplus.

23:00  
It's coming to me, right?

23:02  
Because I'm saying no, first 2 units, you pay the higher price and then fine, great, you get some additional consumer surplus on these units.

23:08  
But that's OK because I've managed to scoop out the green consumer surplus, which I wouldn't have if I had to charge the same price for all of these units anyway.

23:17  
So you can kind of see second degree coming up in a many different ways.

23:21  
But it happens when I don't know whether what your type is, so I don't know what your type is.

23:26  
But if it turns out you're the high demand type, you want to buy a lot of units, great, buy the extra units.

23:31  
But I'm able to scoop out the green surplus from you and increase my profits.

23:38  
There are other examples in here, for example, bundling 2 part tariffs, right.

23:43  
I would refer you to the textbook to look for, look through them and maybe we'll consider some of those in class.

23:49  
But the idea is always the same.

23:51  
Anytime you have a more sophisticated pricing scheme, what is the information you have, right?

23:58  
And then think about how consumers react.

24:00  
So if consumers have the option of hiding, then you're going to have to give them a lower price along with something else.

24:08  
That makes it harder for those people who are willing to pay more to, you know, get the lower price obstacles or you have a label on their head that they cannot get rid of.

24:17  
And then that's why you offer students a lower price compared to non students given their elasticity of demand.

24:25  
OK, so when you're doing price discrimination, here's a process I want you to follow.

24:29  
Number one, check if the conditions for price discrimination hold.

24:34  
You do not go any further without that step.

24:38  
Step 2, What information do I have on consumers?

24:43  
I can have lots of information, but if I can't tell them apart, then that's a problem.

24:46  
Or I can tell them apart because of the label on their head, but I don't have that much information or I'm restricted with the the price that I can charge.

24:53  
OK, so that's what I want you to focus on.

24:55  
That's what distinguishes first, second and third degree price discrimination.

24:59  
You should be able to work with that.

25:01  
The other thing that I want you to get flexible with doing and this I encourage you to do in reality because price discrimination is everywhere, right?

25:08  
Look around with different pricing schemes.

25:10  
Look around where you see pricing structures that offer either multiple prices or prices for certain groups are lower and higher than other groups.

25:19  
See if you can back out the type of price discrimination and why forms are making that choice right.

25:25  
It could be that you know students versus non students is easier to do instead of offering five different movie ticket prices combined with obstacles, and so that's why they choose that.

25:35  
Focus on that, Working it backwards.

25:36  
And this is a really good exercise to get you to understand all of those differences without memorizing, and also to observe price discrimination in reality, yeah.