Marketing Analytics
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Lecture 49
Customer Churn and Customer Lifetime Value (Contd.)

Hello, everybody welcome to Marketing Analytics Course. This is Dr. Sawagato Chatterjee from VGSOM IIT, Kharagpur who is taking this course. We are in week 9 and we are discussing about Customer Churn and Customer Lifetime Value. So, till the last video we have discussed about how to calculate customer lifetime value in this particular video, we will discuss about how in a specific case this can be applied.

So, as you know, so, what is customer lifetime value, customer lifetime value is the total amount of profit that a company can generate, from a customer. So, it can be the, over the lifetime of the customer. So, lifetime of the customer means not his whole till his death but till the customer is there with this company. Now lifetime varies depending on what kind of services it is, for example, as I told in case of education and etc. it can be, let us say 6 years at max 4 years to 6 years, 8 years is the lifespan of the student in an educational institute.

If I think about the same thing in terms of, let us say, how the cars, you use the cars. Let us say, generally when you buy a car, you use it for 5 years at max 5 years, 6 years. So, in that case, that 5 year, 6 year, whenever you are using this particular car, before you switch to another car or before you buy another car or before you stop using this car. That particular time period is called the lifetime and the amount of money that our value basically, that can be generated the amount of value that to be generated for the customer and in exchange amount of money that can be generated from the customer within this lifetime is called customer lifetime value.

So, we have discussed about how to calculate that. We have discussed about how in a B 2 B context we can calculate that. How in a B 2 C context we can calculate that, mainly used in case of services. But also in case of products like let us say I have discussed how, when you buy a Maruti car, how Maruti creates a network of services which can be given to this particular customer over his lifetime.

That includes the services related to let us say, DPS services. That can be related to the driving license services. That can be related to the second hand card selling services or that can be related to money which comes from the insurance company from the fuel company and spare parts blah, blah, blah.

So, there can be so many avenues, after you buy the car, what the company can generate value and in an exchange can take, can generate profit for itself over the lifetime of the customer. So, here we will be dealing with such kind of a problem. The case study that we will be discussing is something called Redwoods.

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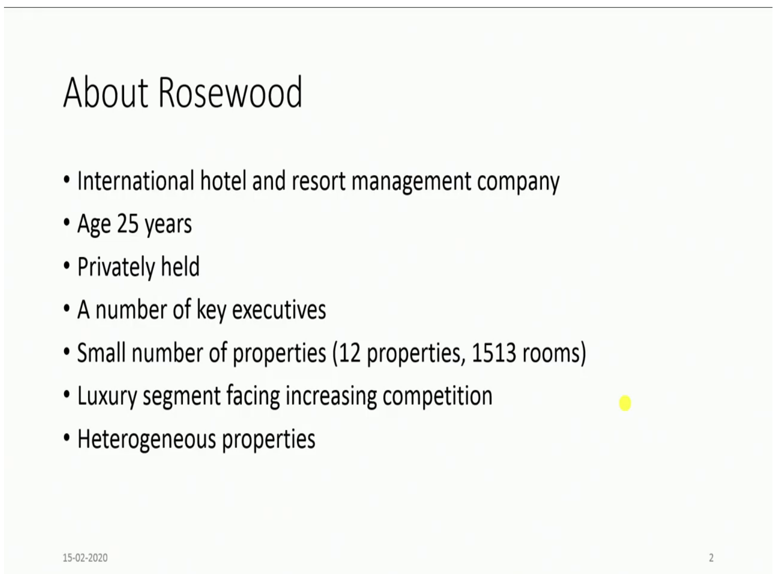

So, its Redwoods case study, Redwoods is a hotel chain, which is a International Hotel and resort management company. So, what they do is they very, very good to do properties at various parts of the world and they acquire them. Now these properties have their own history, they have their own culture, they have their own, I would say the designs and etc and because they have their own history, own culture, own designs, they are the customers who go to these properties will also look forward to have those kinds of feeling.

For example, if you go to, let us say, a palace in, there are lots of palaces which is converted which has been converted to a hotel. So, let us say if you go to a palace in, Udaipur or in Jaipur and you that is a palace converted it to a hotel. You might want to have experiences of Rajputs and their life habits, their historical information you want to get, your room should look like that, your bed should look like that, your food should look like that.

So, that kind of thing can happen. On the other hand, the same thing if you go to Mysore, you might want a Mysore related history, Mysore related, various kind of architecture and etc or southern architecture. You do not want the Rajputana Architecture in the south. So, if we have different palaces, the same thing when you go to come to Calcutta to a old school, let us say, let us Great Eastern kind of a hotel which is old hotel, that gives you a feeling of the colonial India the British or English architecture should be there the food will be similar it will give the colonial history of India, it will give a idea about the colonial history.

So, each of these hotels let us say the Taj palaces in Jaipur and then let us say some Hotel in Mysore or similar areas and then one palace, which is Great Eastern in Kolkata. All of these guys will have different history with it, it will not have the similar kind of history, you should not expect the similar kind of experiences there. So, rosewood used to actually acquire this kind of properties at various parts of the world. It has 25 years privately held and there were a number of key executives in this particular company because it was diversified.

So, it has a small number of properties, 12 properties only they had and there were 1513 rooms. So, not very large chain, small chain and I would say limited number of rooms and it is majorly focusing the luxury segment, facing increasing competition. So, there were lots of other hotels which were coming up which were not focused on this history part or heritage part and this and that, there were more focusing on the luxury segment.

So, oftentimes what happens is the customer who actually want to spend money on this kind of a heritage, heritage buildings and heritage stays and etc, are also luxury customers and if they are luxury customers, they have a so, they have a choice whether they will go to a five star hotel which is normal contemporary type, design, five star hotel or will they go for heritage hotel.

So, unless that feelings of our attitude towards heritage history and etc is ignited, unless that is ignited when it is a normal stage, you are these Rosewood and let us Hilltown is probably targeting the same type of customers which is the luxury segment and because the competition in this luxury segment was going up slowly Rosewood had an issue that how I can manage this kind of a competition.

How I can probably fight with this kind of a competition and make my niche segment very strong, so that nobody can come into this. So, they have very heterogeneous properties as I was telling. The properties where each of them has their own situations.

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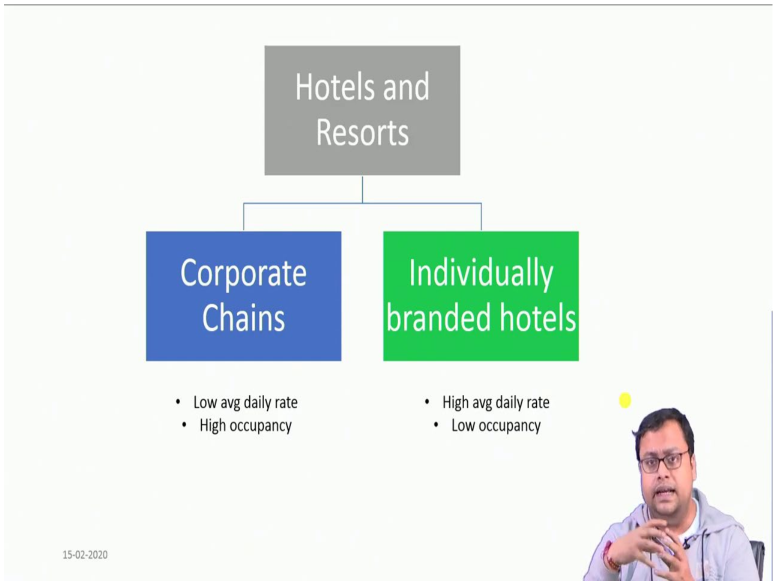

Now, this is the major problem statement was like because there was competition that was going on that was the major problem. Now, Hotels and Resorts if I just break it into two groups. One are like corporate chains and another are individually branded hotels. So, corporate chains are actually, so let us say it is like, if I am not wrong, let us say it is any particular single brand which has business in multiple cities and all under the same name that is a corporate chain kind of thing.

So, for example Marriott, Marriott is a classic corporate chain. What they have presence in multiple cities all over the world and they have the similar kind of atmosphere, similar kind of services, some a little bit of localization is there. But mainly very global service, may be global, I would say, experience you can expect whenever you go into the Marriott Hotel.

So, their are average daily rate is low, low means in comparison to the luxury segment. It is low and then the occupancy rates are high. On the other hand, individually branded hotels have very high daily rate and their occupancy rates are low. So, obviously price goes up, the occupancy rates goes down the demand goes down that is one thing.

Another major problem that individually branded hotels used to face is there is no cross selling. See in corporate chain if you have a loyalty card, you can use the points of loyalty card that has been acquired from a particular hotel of Marriott chain, can be redeemed in another particular hotel also of Marriott chain.

So, if there is a focus on cross selling, if you had a push in cross selling the chances that a guy who will come in Marriott New York will also come to Marriott Kolkata if by chance visits Kolkata, and the chances of having a particular customer within the network becomes much higher. So, when the chance the probability that a customer will be staying within my network will not switch to another network, the churn comes down and that is what the occupancy rates goes up.

So, there are two reasons, one is obviously that is enough daily rate. But one may ask a daily rate can, individual hotels can reduce the daily rate and that will increase their occupancy rate that is true. But, also you have to think that whether there are other external drivers of the demand or not. If you can increase your demand without compromising your daily rate, then that is something which you have to which you should do. So, that is why this particular case comes in.

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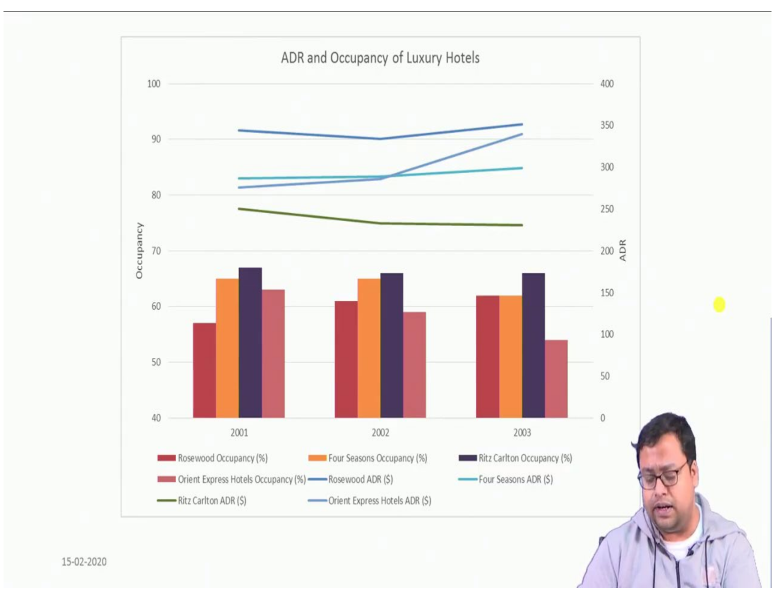

So, for example, here there are I think four hotels are there, the bar charts are occupancy rates and the lines are average daily rate. So, you can see that Rosewood is which is the red one, which is the leftmost one, we will have lowest occupancy rate in 2001-2 and slowly it is going up and the yellow one is basically the Four Seasons. Four Seasons was quite high and then it dropped actually and then the next was is Ritz Carlton, Ritz Carlton was always be the leader.

So, Four Seasons was almost equal to Ritz Carlton at some point of time in 2001 and 2002. But in 2003 it dropped and then comes Orient Express Hotels, which was slowly deteriorating. So, it was high and then low and then further lower. So, this is the occupancy rate situation. So, slowly I would say that rosewood was improving, but we have to further study that how much is the actual improvement and this is and how they can they can actually do farther better.

On the other hand, if I check the lines, you will see that the green line is for this Ritz Carlton which is the lowest and this blue line is for Rosewood, which is the highest. So, obviously the ADR is high in the middle 2002 all of them did a little bit lower price other than this one which is Orient Express.

Orient Express was increasing their price like anything and that is why broadly their occupancy rate got affected. But overall this is the situation of this business. So, that is how I can say that Rosewood was not doing very bad. But it had a opportunity to do further better. Now, the question is how?

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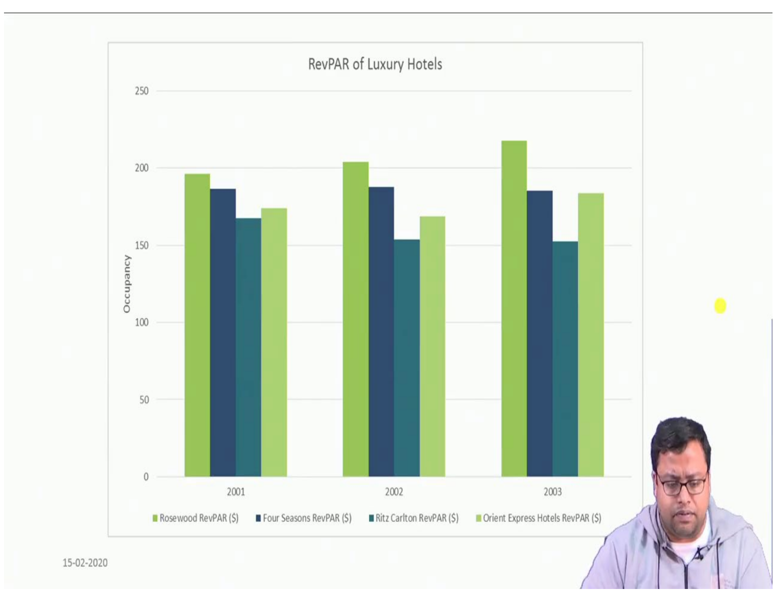

Another important metrics is rough parts which is revenue per average night or whatever I forgot. Which is basically how many occupancy is something that they have to calculate. So, rosewood draft per in dollars is almost close to 200 and then. So, this is revenue that you can incur, revenue that you generate, per occupancy is something that we are checking here. So, which is which is very close to 200 and then this one has improved in 2002 and in 2003 it has further improved. So, this is not exactly based other than your room rates, one or the other money that you can generate is actually told in RevPAR.

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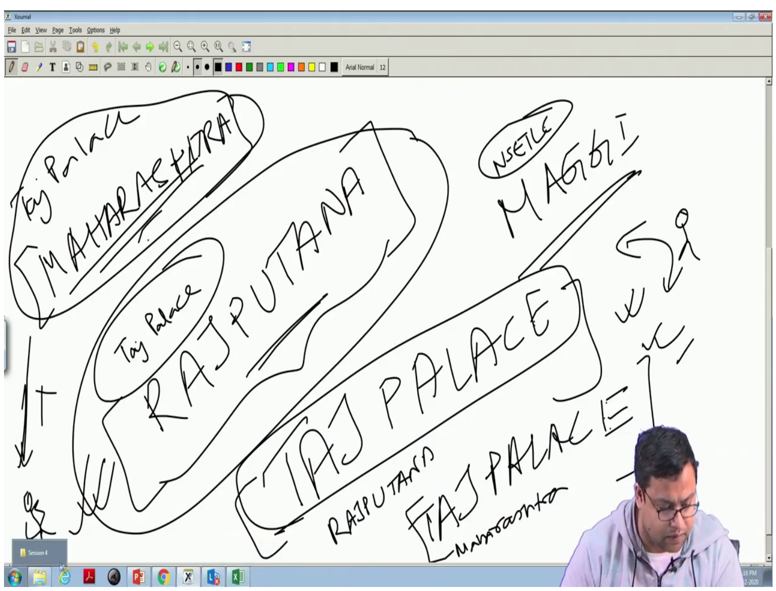

Now the branding strategy is was the major problem for Rosewood. Rosewood because it was individually branded house it was focusing on individual branding strategy. So, what is the individual branding strategy? So, you will see individual branding strategy looks like this. So, I will just open it so, just one minute.

Okay, so, the individual branding strategy looks like this. Where let us there are two options, there I can say that okay, let us say if I have Taj palace. Which is in there in Jaipur, I can say Taj palace and then I can say Rajputana something like that. I am just giving an example Rajputana which will focus on this Rajputana as a brand and Taj palace is actually the umbrella brand, is the sub. But this is majorly the brand, like what we do it for Nestle, Maggie.

So, Nestle is something that you it is there you remember that Maggie is under Nestle. But you also remember and Maggie is the major brand. So, Taj palace and Rajputanaa or you can say, Taj palace and then Rajputana. So, the idea is that the moment I am doing this, I am focusing on the fact that there is something called Taj palace and I will expect a palace and I will expect a palace in Rajputana that is what I will expect.

So, in Udaipur, I would expect palace. So, if I by chance have the experience of Taj palace in somewhere else and whatever experience I got there. Let us say beautiful room, the king like bed and King like services and King like food and blah blah blah. Similar thing I want to expect in Rajputana. On the other hand, if I focus on Taj palace Rajputana and like these where Rajputana is big and that is why it is low.

So I will actually expect Rajput oriented history. So, the expectation will not be services expectation will not be any more the similar kind of stamp that I have got in some other Taj palace, it will be majorly focused on the history of Rajput. I will see spears and probably swords and these and that and some historical events, which the pictures of historical events will be there, wars will be there. Probably great kings of Rajputs will be there.

So, these kind of things I would expect. So, the expectation changes and that is how the. Now, let us say I am a customer who is more interested in the history of the Raj, the western part of India, let us say. I focus and I like the granger and etc I love this war stories and etc. So, then in those kind of cases, I would be preferring Rajputana and now if I go to, let us say some other Taj palace.

So, I am not sure whether there is I found out there if there are other Taj palaces. Let us I am just writing. Let us I am saying that there is a Taj palace and then some other king. Let us say Maharastra our thoughts is Shivalika something like that? So, question is that, the things that I have expected here, will I get the similar thing here. The expectations will change because here I am focusing on Rajputana. Rajputana's history is being focused, here some other history we will be focused, a person who is fond of this history might not be fond of this history.

So, if that is the case, then a customer who comes here cannot be to him, cross selling of this thing cannot be done. On the other hand, if you focus on Taj Palace as a thing and Rajputana is a small sub part of the brand, the sub brand. Then another thing which is Taj place and then small Maharastra, here you are focusing on Taj palace, you are not focusing on Rajputana or Maharashtra or something else.

So if that is the case, then a person who has experiences of Taj Palace might be sold. He might try to cross sell stuff here as well. So, that is where the individual branding and the umbrella branding comes into this picture. So, coming back to whatever I was saying in the context of our case. So, there was a individual branding facility of unique properties and that is why the ads were property specific.

The sub, there was sub branding of Rosewood names. So Rosewood was small and then the property name was big and there was a sense of place. So, everything was around that the heritage and etc as I told and that is why the service and product was very much flexible because if the local manager whoever was managing that property.

He was given, all the independence to do whatever with this property. Because he knows about the heritage, the culture the history much more than a brand manager at a group level sitting at some other city. So, then he was more focusing because it was flexible, it was costly and that is why the margin was low.

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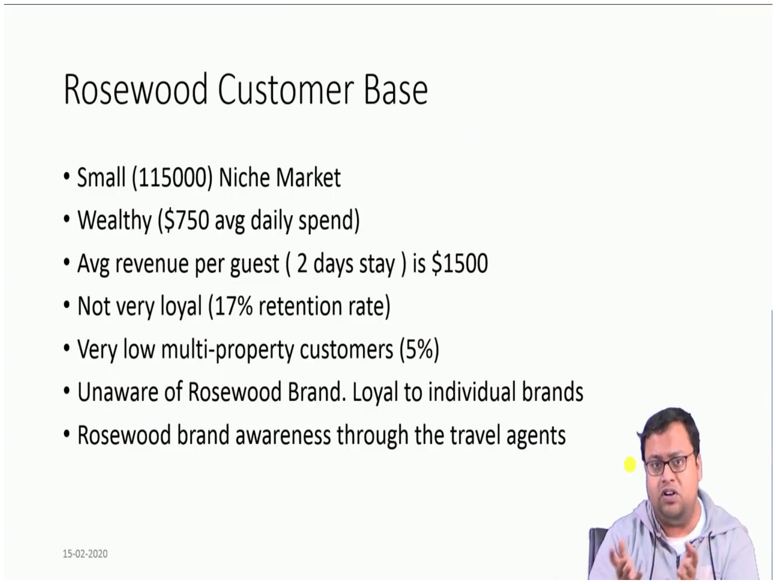

Now that is why there were the problem. So, they have a very small niche market only 12 properties are there and average ADR was 750 dollars which is very high, average daily spend, if not daily ADR, average revenue per guest over two days was 1500 dollars, which is was also high.

But the problem was the customers were not loyal. Because as I told the customer have Taj Palace Rajputana will not go to Taj palace or well as Shivalika, Shivaji or something like that, might not be interested or there might be some customers who are more focused on Rajput history, not so focused on Maharashtra history and then there can be a less amount of cross selling similar things were happening here.

So retention rate was only 17 percent very low multi property customer. So, our customers who was showing their face into multiple places, the history loving customer let us say, were very low 5 percent. Unaware of, they were not knowing about this Rosewood brand. They were loyal to the individual brands, individual Rajputana brand or Shivaji brand and etc and Rosewood brand awareness through the travel agents. So, majorly all the awareness was generated by the travel agents. So, that was the problem.

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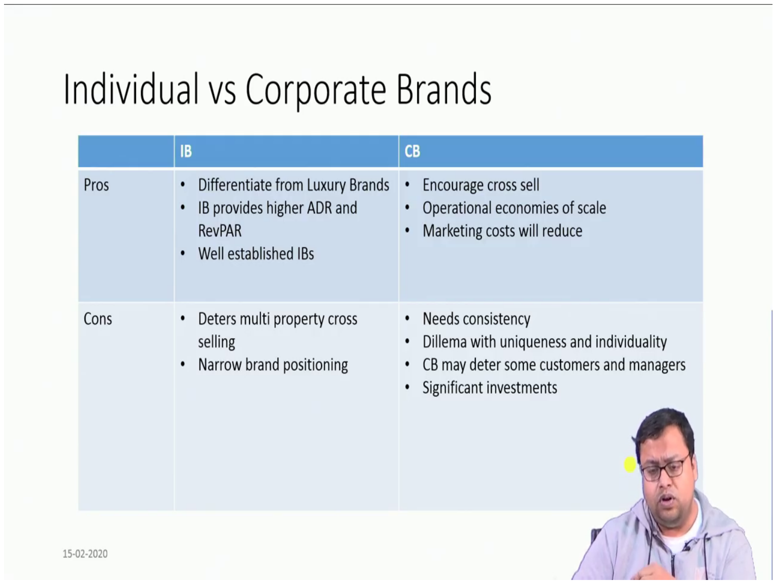

So, in this kind of a case there was a individual branding versus corporate branding issue. So, individual branding differentiate from luxury brands. Individual branding provides higher rates, higher money. But the problem is cross selling is low positioning is also low, very narrow. On the other hand, when you do a corporate branding or overall Rosewood branding. Then it encourages cross sell, it operation economies of scale is high, marketing costs reduce, but you need consistency.

You know, it is similar kind of service experiences everywhere, which these guys who were there for quite a few years let us say 25 years. Those 25 year old company, they might not be interested all of a certain to give certain Rajput food in a Maharashtra based hotel or some Maharashtrian food in Rajput based hotel. They might be not be interested in giving that kind of products and services because they might not be interested in giving a standardized thing. But that was needed.

It needs consistency when you do a corporate branding. Dilemma with uniqueness and individuality. So, that is something that as I just told, covered branding by details some customers and managers also. Because some customers might want that flavour, the local flavour, some managers might be more interested to give the local flavour, these guys will deter and then there were significant investments involved. So, that was a business problem. Now, which one should I grew, I have both pros and cons in both the site in mathematically which one should I go.

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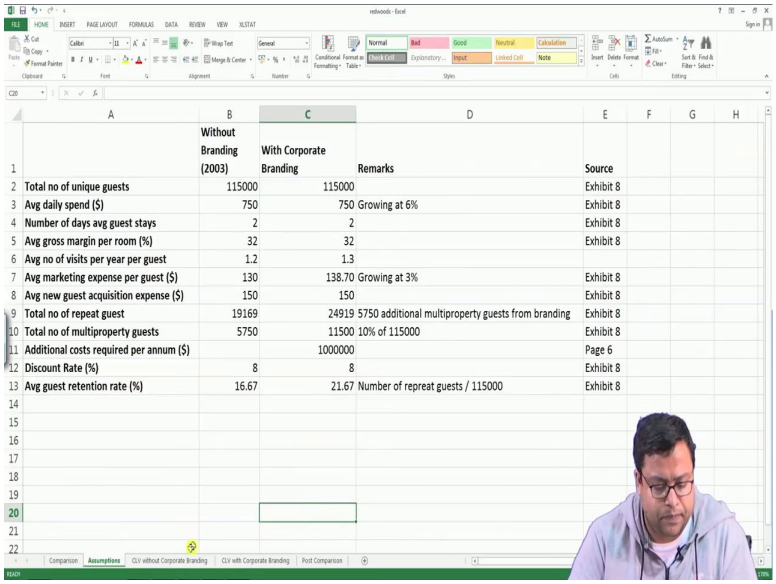
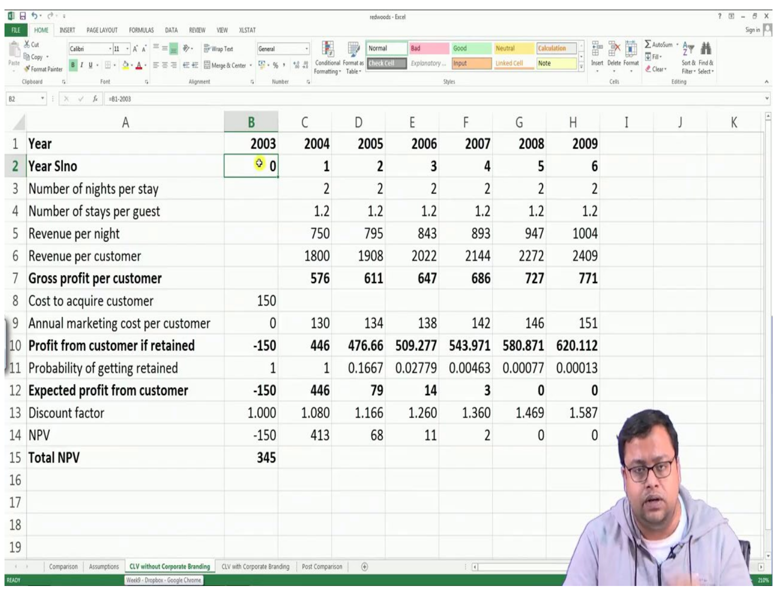
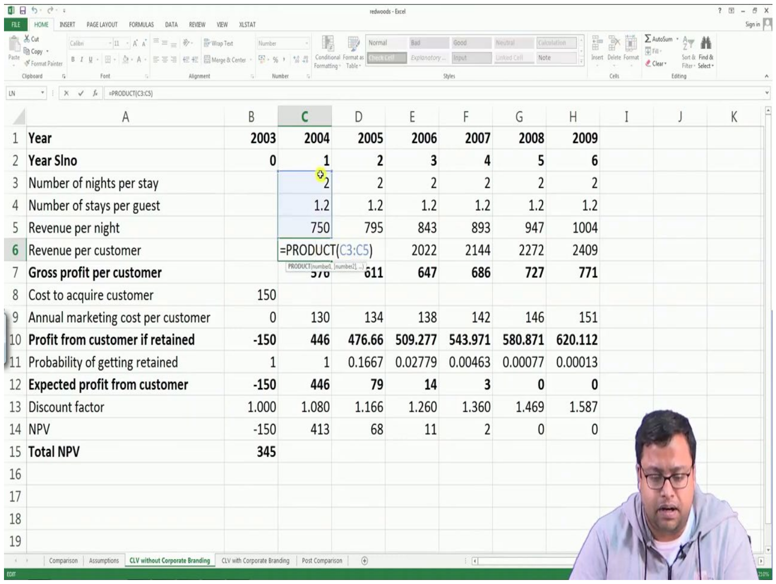
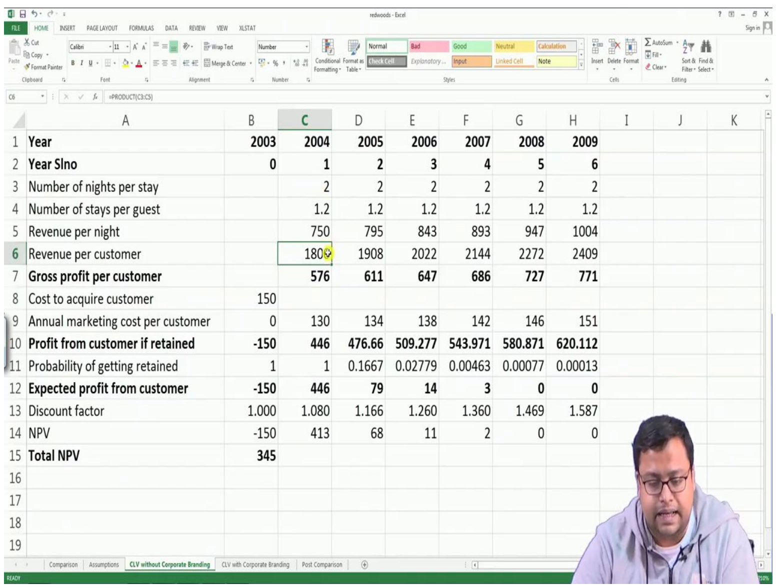






	A	B	C	D	E	F	G	H
1	**Year**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
2	**Year Slno**	**0**	**1**	**2**	**3**	**4**	**5**	**6**
3	Number of nights per stay		2	2	2	2	2	2
4	Number of stays per guest		1.2	1.2	1.2	1.2	1.2	1.2
5	Revenue per night		750	795	843	893	947	1004
6	Revenue per customer		=PRODUCT(C3:C5)		2022	2144	2272	2409
7	**Gross profit per customer**		**576**	**611**	**647**	**686**	**727**	**771**
8	Cost to acquire customer	150						
9	Annual marketing cost per customer	0	130	134	138	142	146	151
10	**Profit from customer if retained**	**-150**	**446**	**476.66**	**509.277**	**543.971**	**580.871**	**620.112**
11	Probability of getting retained	1	1	0.1667	0.02779	0.00463	0.00077	0.00013
12	**Expected profit from customer**	**-150**	**446**	**79**	**14**	**3**	**0**	**0**
13	Discount factor	1.000	1.080	1.166	1.260	1.360	1.469	1.587
14	NPV	-150	413	68	11	2	0	0
15	**Total NPV**	**345**						



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	Without Branding (2003)	With Corporate Branding	Remarks	Source
Total no of unique guests	115000	115000		Exhibit 8
Avg daily spend ($)	750	750	Growing at 6%	Exhibit 8
Number of days avg guest stays	2	2		Exhibit 8
Avg gross margin per room (%)	32	32		Exhibit 8
Avg no of visits per year per guest	1.2	1.3		
Avg marketing expense per guest ($)	130	138.70	Growing at 3%	Exhibit 8
Avg new guest acquisition expense ($)	150	150		Exhibit 8
Total no of repeat guest	19169	24919	5750 additional multiproperty guests from branding	Exhibit 8
Total no of multiproperty guests	5750	11500	10% of 115000	Exhibit 8
Additional costs required per annum ($)		1000000		Page 6
Discount Rate (%)	8	8		Exhibit 8
Avg guest retention rate (%)	16.67	21.67	Number of repreat guests / 115000	Exhibit 8

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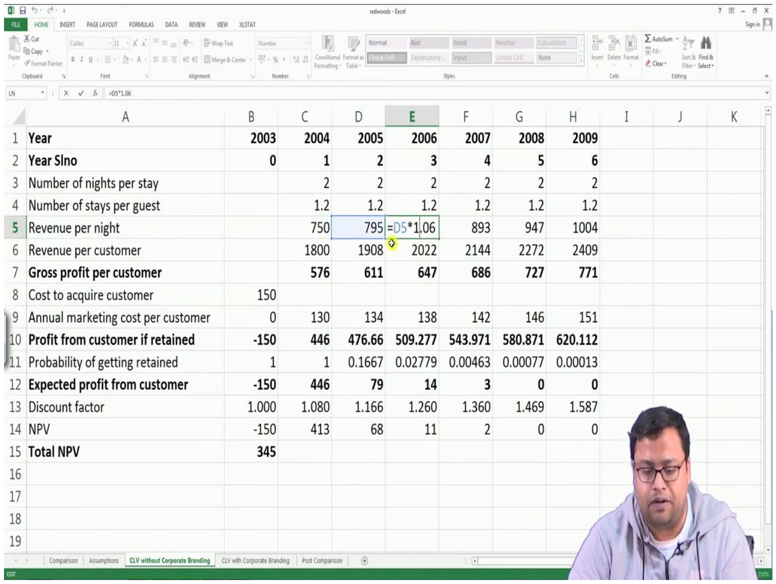

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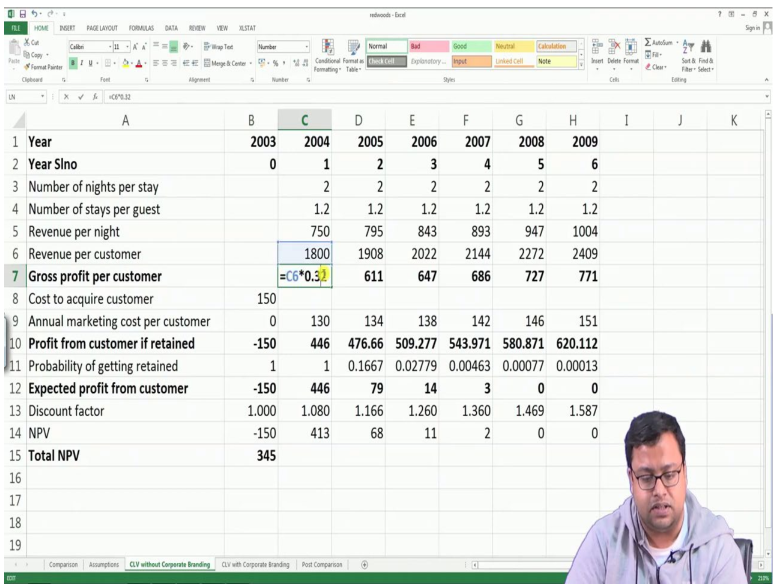

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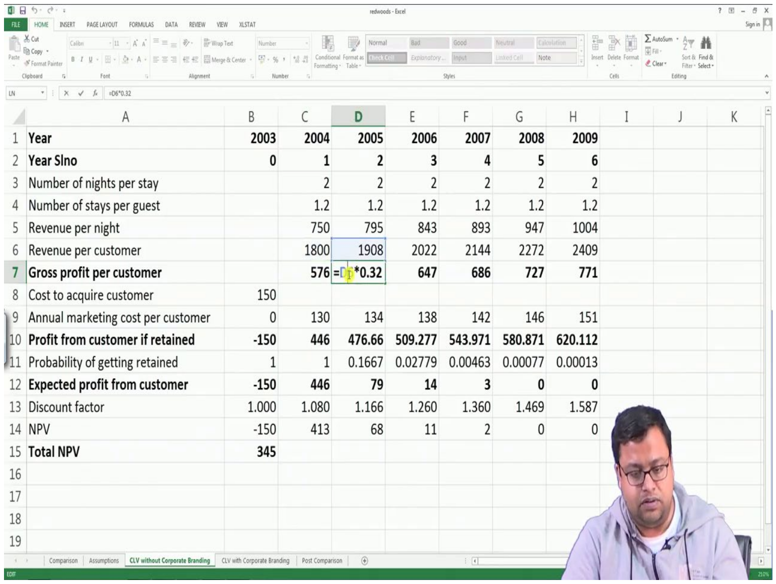

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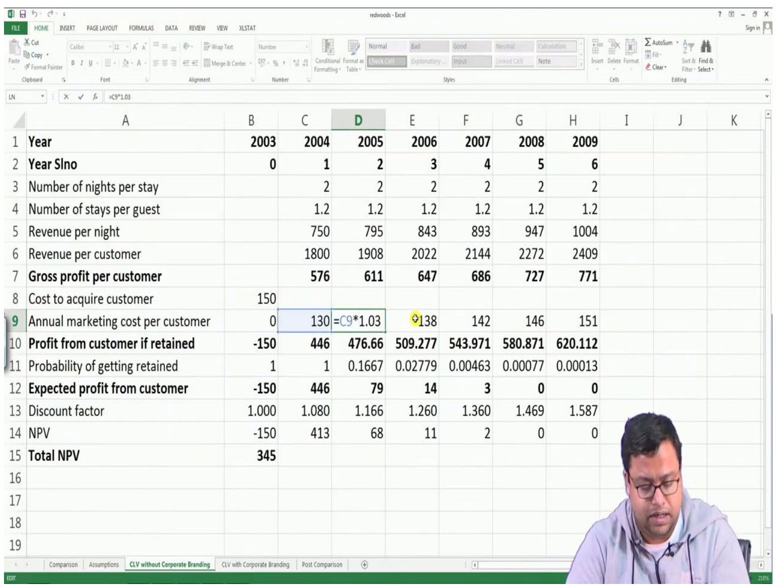
2	**Year Slno**	**0**	**1**	**2**	**3**	**4**	**5**	**6**
3	Number of nights per stay		2	2	2	2	2	2
4	Number of stays per guest		1.2	1.2	1.2	1.2	1.2	1.2
5	Revenue per night		750	795	843	893	947	1004
6	Revenue per customer		1800	1908	2022	2144	2272	2409
7	**Gross profit per customer**		**576**	**=D6*0.32**	**647**	**686**	**727**	**771**
8	Cost to acquire customer	150						
9	Annual marketing cost per customer	0	130	134	138	142	146	151
10	**Profit from customer if retained**	**-150**	**446**	**476.66**	**509.277**	**543.971**	**580.871**	**620.112**
11	Probability of getting retained	1	1	0.1667	0.02779	0.00463	0.00077	0.00013
12	**Expected profit from customer**	**-150**	**446**	**79**	**14**	**3**	**0**	**0**
13	Discount factor	1.000	1.080	1.166	1.260	1.360	1.469	1.587
14	NPV	-150	413	68	11	2	0	0
15	**Total NPV**	**345**						



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1	**Year**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
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8	Cost to acquire customer	150						
9	Annual marketing cost per customer	0	130	=C9*1.03	138	142	146	151
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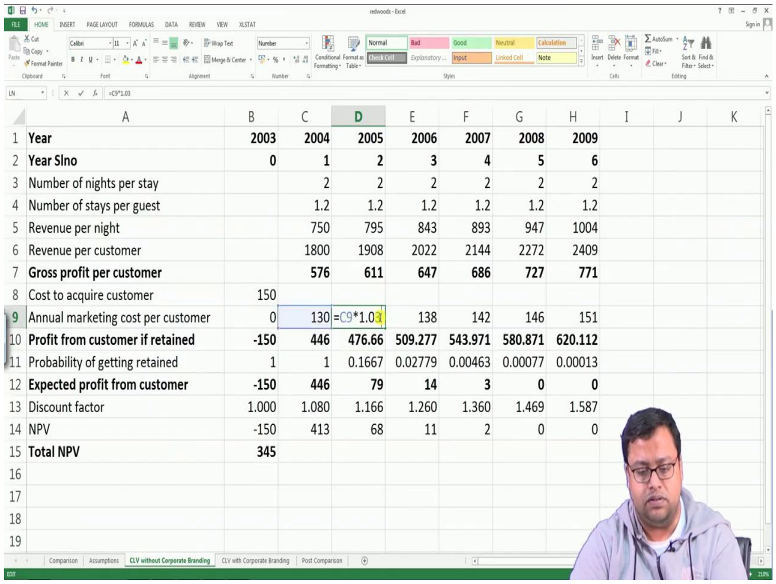

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1	**Year**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
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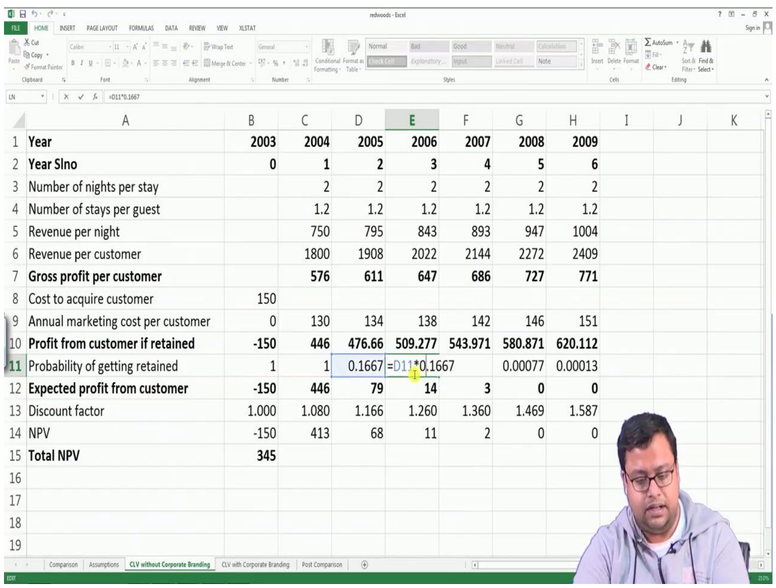

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10	**Profit from customer if retained**	**-150**	**446**	**476.66**	**509.277**	**543.971**	**580.871**	**620.112**
11	Probability of getting retained	1	1	0.1667	=D11*0.1667		0.00077	0.00013
12	**Expected profit from customer**	**-150**	**446**	**79**	**14**	**3**	**0**	**0**
13	Discount factor	1.000	1.080	1.166	1.260	1.360	1.469	1.587
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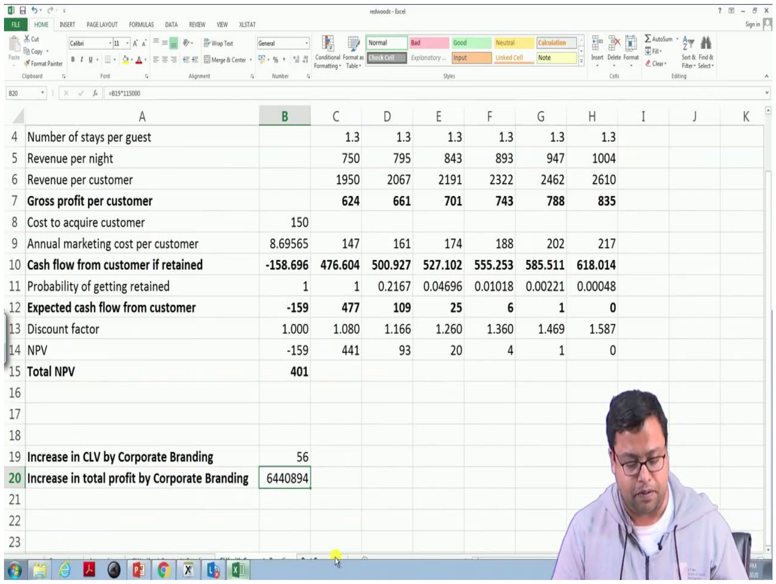

So, there was some information that they collected and the assumptions and the information were given here. So, number of unique guest were around 115000 this value was given. Average daily spend with branding without branding both was 750. But with corporate branding, it was growing at a 6 percent rate and then average number of stays is two days, average gross margin is 32 percent in both cases. Average number of visits per year per guest because cost branding will increase a little bit of number of visits. It is 1.2, it has gone up to 1.3 average marketing expenses much higher in case of corporate branding.

What is more interesting is that the total number of repeat guests is 5750 number of additional. So, this is something which is important to understand. So, there are 5750 number of additional customers and number of multi property guest is 10 percent of this. So, previously it was 5 percent that goes up to 10 percent of this.

So, that is what this additional 5750 comes up and to do as I told there is a marketing cost involved in doing this to the additional marketing cost is almost 10 million dollar, 1 million dollar and the discounting rate is 8 percent is what I have considered and retention rate also increased by 5 percent as I told So, 21.67 percent. So, these are some of the basic figures that they calculated from their exhibits various kinds of information, various charts, reports and etc. So, from here this CLV calculation is done just take check what I have done.

So, first I have done, without corporate branding. So, without corporate branding in the 0, you are number 0 the acquisition cost if you check here it is 150 dollars, see 150 is the guest acquisition cost. So, that is what is the only cost, there is no marketing cost in the first year. Because you are not doing anything. So, that is the cost and what is the benefit you generate 0.

But in a second year, this guy stays for two nights and average number of times, he comes is 1.2 and per night he spend his 750 rupees. So, then revenue per customer is nothing, but the multiplication of 2 into, so 750 rupees per night, two nights in an average you stay.

So, 1500 rupees and 1.2 times in an average you come to me. So, then another into 1.2 is coming up to be 1800 and that is increasing this particular value is increasing at a rate of 6 percent. So, you see this formula is C5 into 1.06 this formula is D5 into 1.06. So, slowly it is increasing, and that is why your revenue is also increasing and if your revenue is increasing like this.

What is the profit? Profit, I told that the margin is how much, 32 percent margin in both the cases. So, this value into 0.32, this value into 0.32 this value into 0.32. So, this is the money that we generate and this is the first year acquisition So, no other acquisition costs and first year marketing cost is 0, second years marketing cost is 130 and that is increasing at a rate of 3 percent. So, 130 then 130 into 1.03 that into 1.03 that into 1.03 of so on it is increasing.

So, that is why the profit is nothing but the gross profit minus the cost gives me the profit if the customer is retained and that is how I am getting here. Which is nothing but this minus this minus this. So, 576 minus 130, 446, 0 minus 150 minus 150 611 minus 134. That is why I am coming 476.66. So, this values are actually up two decimal points. So, you can check that and so on, I am getting certain values.

Now what is the probability, the retention rate is 16.67 percent. So, the guy whoever and spending the acquisition cost and here the assumption is whoever, I am trying to according gets acquired. So one, second year is also coming, that is why one. After that the acquisition, the retention comes in. So, up to here, it is the probability that this guy will be here is one. After that the retention is 0.1167, then this into 0.1167, then this into 0.1167. So, basically 0.1167, 0.11167 squared, 0.11167 cube and so on.

So, if this is the probability and this is the probability of retention and this is the profit if retained, then what is the expected profit? This into this probability into x. So, there gives me the expected profit if I consider the discount factor which is I have taken as 1.08. So, this discount factor has to be not into 1.08. So, this is a discount factor means this is basically the denominator by which I will divide basically.

So, this is the discounting factor. So, the values I am getting is 446 divided by 1.8 which is 413 79 divided by 1.16, which is something like that, and so on. So, this kind of discounting factor I got, if I add them up, I am getting 345. This is my net present value. I just copied and pasted the whole calculation here. In case of, the only thing that changes instead of 1.2, it was 1.3 fair enough. Then, instead of 150 along with that, there was a marketing cost, which is 1 million divided by 115000, these are the number of customers.

So, that is the acquisition cost, then this remains same, it starts from 138.7 and this acquisition cost is still there. Fair enough, so I got certain amount here and the rest of the calculation is still absolutely same. You see the probability of retention also increased 0.1667 to 0.2167 and the calculation gave me that the total NPV is coming up to be 401. So, the additional money that I am generating about 345 and this is 56 and increase in total profit is 56 into the number of customers which is this much.

So, if you are saying that your cost of doing the branding is lower than this then you should go for corporate branding. So, that is what we can get a generate. So, based on that it is a positive value, based on that they have gone for a corporate branding and after corporate branding. This is the post branding comparison you will see that up to 2013 this was the situation for Rosewood. If I just plot only rosewoods thing, I forgot about the other one. So, I will just focus on rosewood’s performance.

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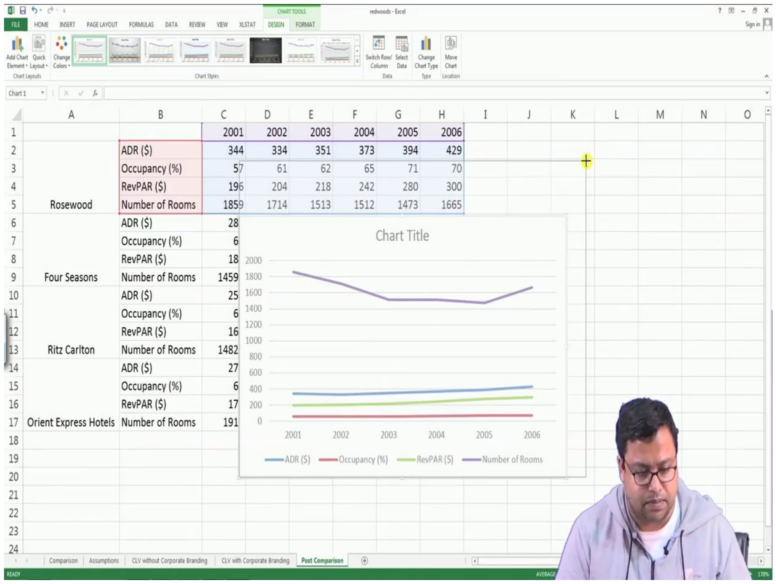

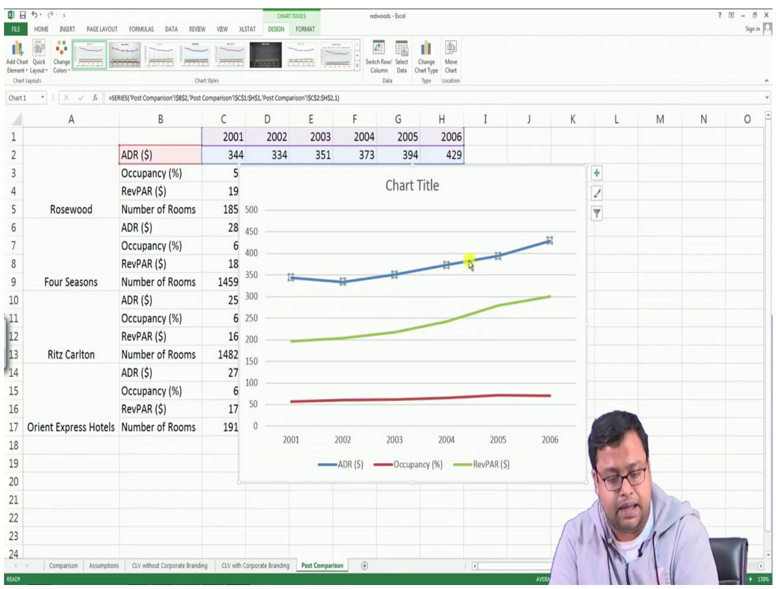

So, just check rosewood's performance that and what was the big number of rooms I will just delete I do not need that. Now check that, the occupancy rate, which is the rate was more or less same if I just delete these two you will understand that this is not exactly same. But slowly the revenue per night has also gone up and the ADR rate they could increase over the time.

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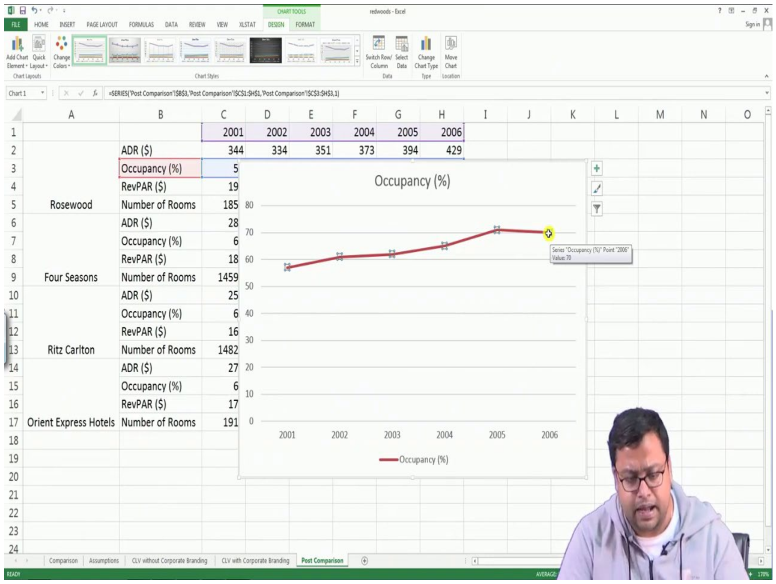

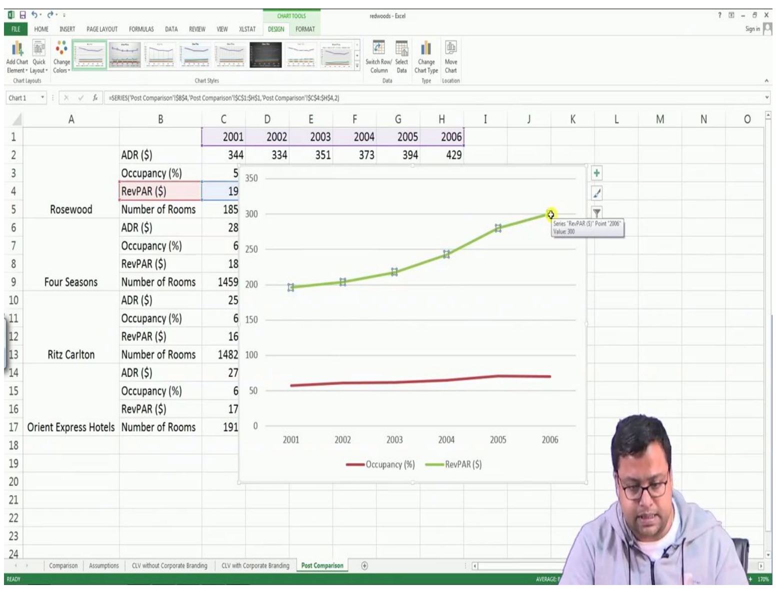

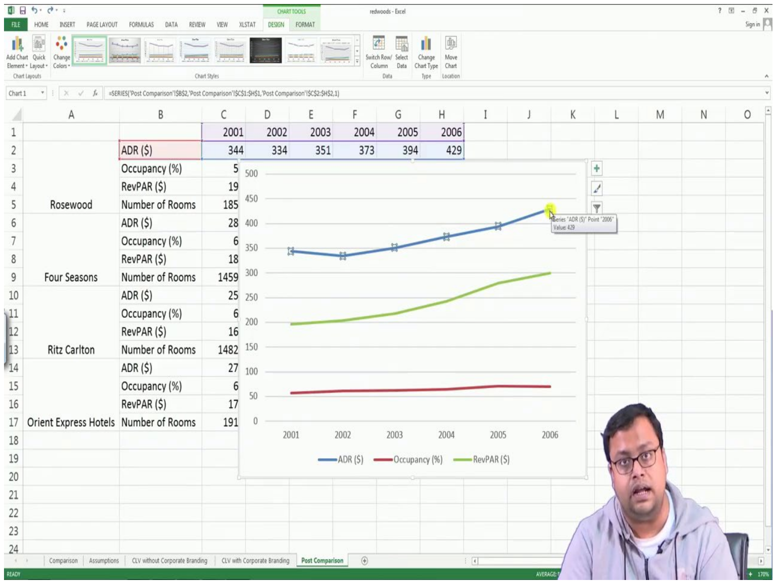

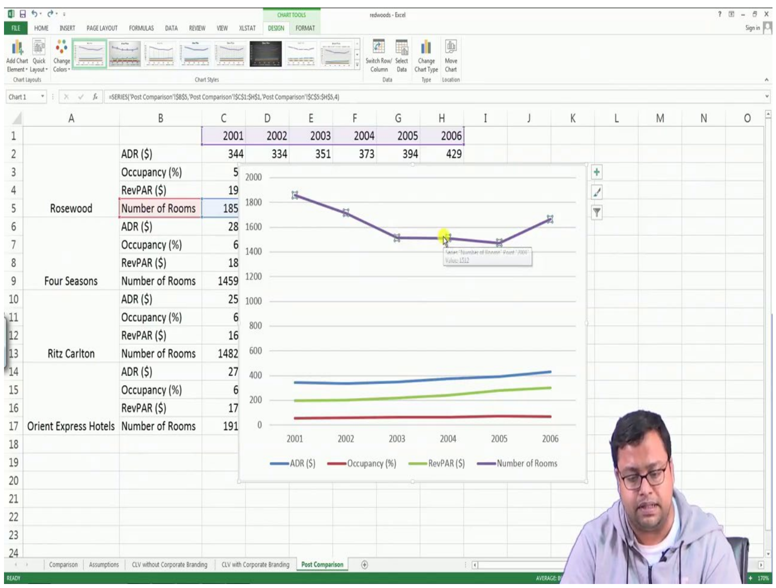

But even after increasing ADR, you see after 2003 when they did this corporate branding after that it increased, the occupancy rate also increased from 50 percent or let us say this one is how much 65 percent it increased to 71 and then the value is here also. Here it is how much 65. So, from 62 it increased to 65 and then 71 and then it got saturated there probably 71 and 70 percent.

So, almost 7-8 percent increase in occupancy rate happened and repeat customers, as I told went up by 5 percent and the revenue also, went up from around 280 to 300 dollars and then ADR also went up from 351 dollars per night average daily rate to 429 dollars which is very high.

So, and then this is the number of rooms, number of rooms they actually reduced a little bit over time because some of the properties they cancel and then then again they acquired some other properties. So, that is the situation for Rosewoods, you can compare the values with other hotels also and see that whether Rosewood in a comparative scale was doing good or bad. So, this is how you calculate customer lifetime value and take a strategic decision whether you should go for.

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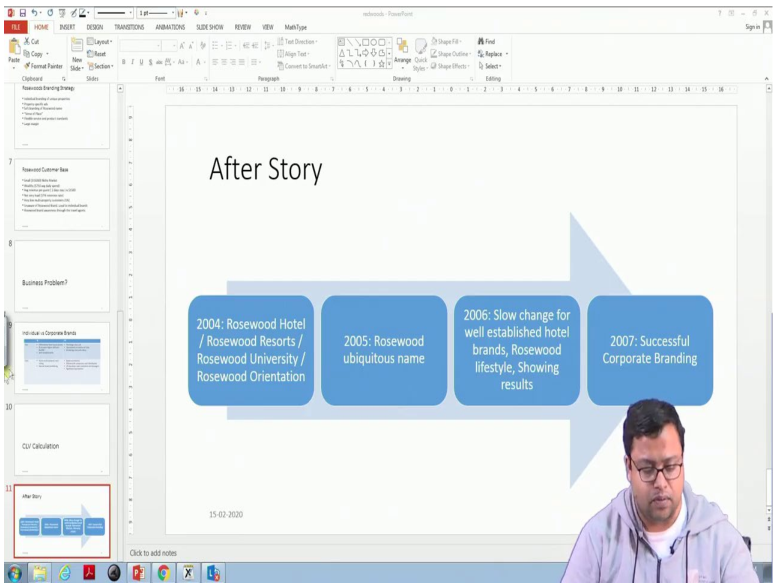

So after story is, in 2004 for Rosewood hotel, Rosewood resorts, Rosewood university and Rosewood orientation was done and in 2005, Rosewood, become a big name, non-ambiguous name. In, 2006 slow change for well-established hotel brands were down, but Rosewoods lifestyle was showing results and then in 2007, they could actually say after three years of calculations, they would say that their branding strategy the corporate leve,l umbrella branding strategy was working. So, that is where I will stop this particular video with a case study and I will meet you with survival analysis in the next video. Thank you very much. See you in the next video.