**Marketing Analytics**
**Professor. Swagato Chatterjee**
**Vinod Gupta School of Management**
**Indian Institute of Technology, Kharagpur**
**Lecture 48**
**Customer Churn and Customer Lifetime Value (Contd.)**

Hello everybody welcome to Marketing Analytics course. In this particular week, we are discussing about Customer Churn and Customer Lifetime Value. So, we are in session 4 and this is Dr. Swagato Chatterjee from VGSOM IIT, Kharagpur, who is taking this course.

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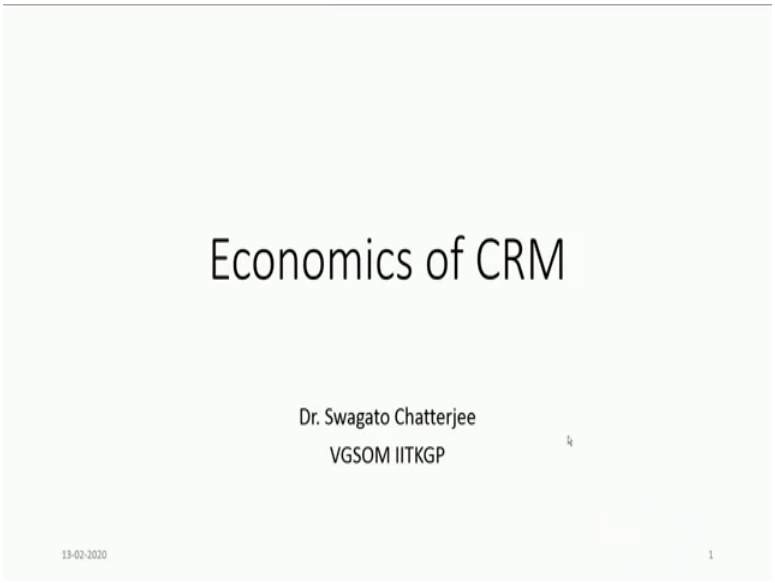


And we in this particular session, we will talk about customer lifetime value or basically economics of CRM. So, CRM is what as I told at the earlier stage of this particular week that you have to maintain relationship with customers because it is like in any relationship for let say personal level relationship.

For example, I have wife and when she was my girlfriend initial days when we were not married in our college days, we have to understand with each other, we have to create the understanding, we have to spend time with each other. So, there was lots of efforts where needed to build a relationship. Now, we have been in this relationship I got married I have a kid now, I have been relationship with for a long time.

And once I have passed this long path with her, now to sustain the relationship, the effort that I have to give has come down much less because I understand her pretty well. She understands me pretty well. So, even the decisions that we take, the shortcomings that we have are generally well understood and well settled.

So, she has changed herself I have changed myself and we are in a steady state and when we are in the steady state, it becomes generally less costly, less effortful to create our satisfaction in this particular case, to have a good relationship or a sustained relationship.

Now sustained relationship has multiple benefits one of the things that as I told the cost or the effort goes away, comes down. So, when you have a long term relationship to sustain the relationship further, the marginal cost that you incur comes down, fair enough. So, cost effectiveness is a major outcome of customer relationship management.

What else, we also gain a little bit of loyalty. For example, let us say any relationship you will see, let us say husband wife relationship as I was telling that if there is a loyalty involved. So, you know that, even if you are away from your home or if you have given enough time in the home for some time, your partner will actually try to help you or try to support you or sometimes that is till a certain point of time will forgive you.

So, you have a little bit of leverage in terms of doing something which is not exactly good for the partner. So, any in the context of services how even if you do something which is bad for a service failure condition, if the customer relationship is strong, the customer will forgive your service failures.

So, the chances of service failure will be lower or chances of dissatisfaction will be lower. The customers will not switch it from you to another service provider just because minute pity reasons. Moreover, for example, let say I can get better because I have been in relationship for quite some time with my wife.

I can get better outcomes from my wife very easily because she understands me very well. She knows that exactly what she will cook or exactly what kind of discussions, conversations we will have. So, that my intellectual stimulation or my food related taste simulation can happen. She knows me very well in and out.

So, she knows that what exactly has to be done to make me happy. So, the chances of our better successful mutually beneficial kind of outcome is much higher and that is the case for CRM also. Even the customer knows that, what the service provider can provide, because the service provider knows what the customers is seeking. More knowledge means more satisfaction as simple as that.

So, these are all further reasons why CRM is important. The next question that comes up is that whether CRM is important, fair enough. So, how will I measure that? How will I monetize or measure that whether keeping relationship with person x versus keeping relationship with person y, which one is more profitable or which one is more, more better? So, that is something where the economies of CRM come in and that is why we will be doing customer lifetime value calculations as well.

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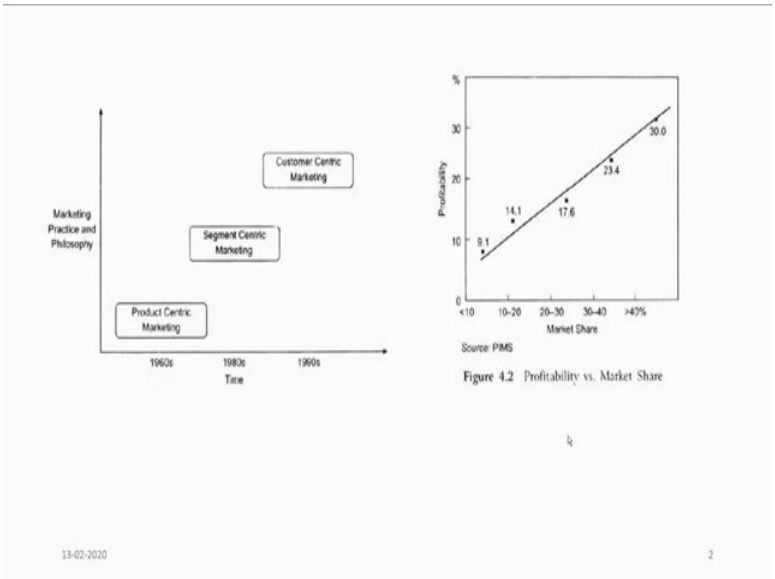


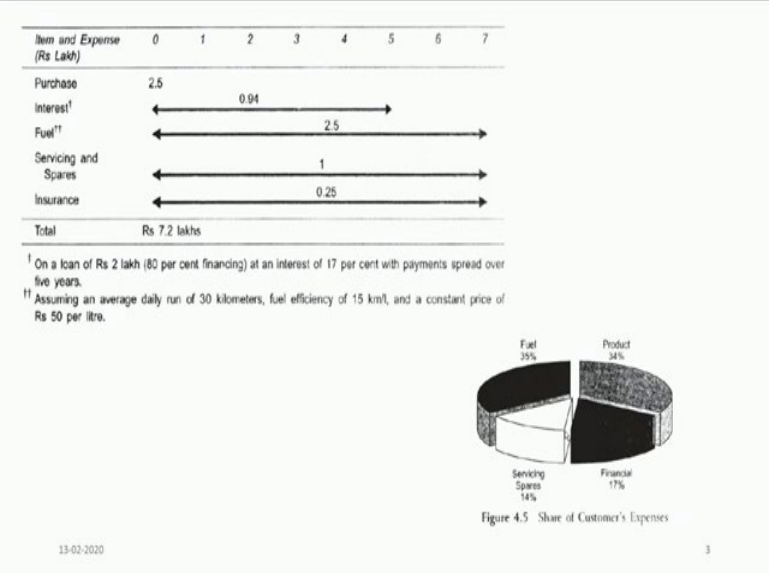


So, if you see this thing that in 1960s, we used to do product centric marketing then we started doing segment centric marketing and then in 1990s onward we have done customer centric marketing and as of market share goes up profitability also goes up this has been focused also, you have to check about the market share and etcetera.

But think about a situation this is a classic situation taken from book from one of my professor in IIM Bangalore. So, he has explained this to us in the class and I have taken that from one of his slides. See, just think about a situation when the, you have bought a car let us say. So, I will not show this thing now. Let us say, you bought a car, at what price do you buy a car. Let us say Alto, around 3 lakhs rupees you buy a car. So, this 3 lakh rupees goes to Maruti.

Now if you buy the car, is it is gone, is it the only thing that you need, your all your travel needs are fulfilled? No. So, somebody has to drive the car, you need a driver. If you know driving then it is okay, if you do not know driving then you have learn driving. So, there is a possible situation that possible service that can be avoided to you, which is driving training services and Maruti has a driving training services and sometimes certified drivers also you can get certified diverse also from Maruti training schools, who can drive for you. That is gone, then is the car and driver is enough?

You might need a fuel. So, Maruti whenever they purchase they have associations for example various automobile companies goes for various kinds of associations with various fuel companies. That whenever you buy my thing if you use this fuel, you will get a share of that.

They can have a relationship with HPCL, IOCL, Reliance and so on. Then if the car goes breaks down, you need a service. So, that is why Maruti has a service center and let us say your maintenance cost is 5000 rupees per month. So, then it is around, around let us say if it is a little bit low around let us say 20-30000 rupees per year. So, then if you keep the car for 6 years then there is around 1 lakh 80,000 rupees of service that you will do on the 3 lakhs rupees car.

So, probably a little bit more or less, that is that can be calculated. But this is something that is also you are incurring this cost and that can be given by Maruti and that is why Maruti has opened up a Maruti service center. Then you need lubricants again for filling up and etc. So, for oil changing and atcectra lubricants they again tied up with fuel companies.

That is also let us say around 2000 or it is around 1000 rupees per year. So, 5 years if you use this particular car 5000 rupees see, they take a share of that. Like these insurance, you do insurance, auto insurance. So, insurance companies from there also you pay premium 5 years and for 5 years they will take some cut from that premium.

So, whenever there is a purchase happening or if you take let us say loan, car loan, they will take certain amount of money from the bank. Because they are giving bank, a customer they are creating a lead for the bank. So, all of these things you will see that total cost is coming up to be 7.2 lakhs for a car which is 2.5 lakhs, the raised 5 lakhs is coming from services only, and that services is being provided in a longer period of time, not in the fast moments of truth.

But multiple moments of truth over a longer period of time can only be obtained if you have customer relationship management. If you have very strong customer relationship management, that is the only way to capture the extra 5 lakhs. So, 35 percent customer expenses, 35 percent fuel, 14 percent is service spares, 7 percent is financial and only 34 percent comes from the product.

So, the most of the money is coming from outside the product. So, frankly speaking there is no product company, there is no concept of product company, you cannot be a product company, you have to be a service company and you have to have customer relationship management through multiple touch points.

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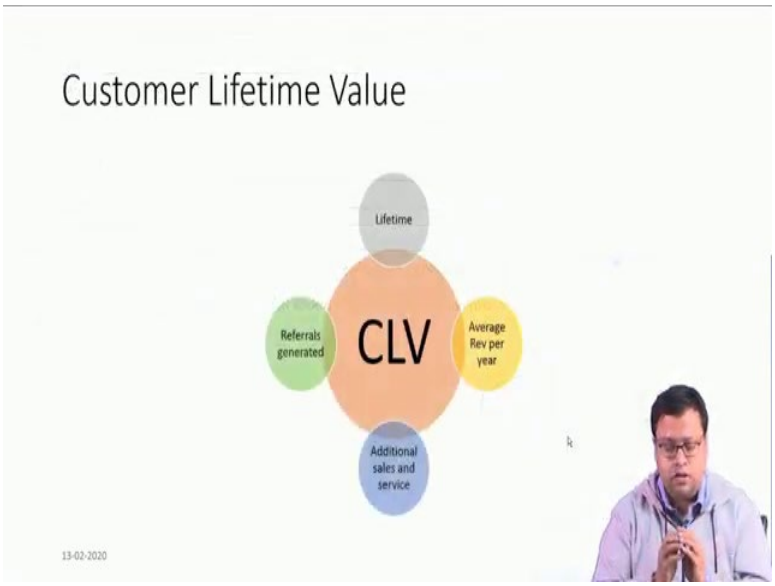


So, customer lifetime value that is why we calculate based on the lifetime there are certain variables that we have to talk about, the lifetime, the average revenue per year, the reference generated. If your lifetime is long, you will consume more and more amount of consumption comes in the picture. If the average consumption per year is high.

Then also the more revenue gets generated, if you talk a lot of good things about me and lots of people know about me and they come and buy that referral generated also contributes towards my customer lifetime value and if you buy something else, additional purchases you do that also contributes to customer lifetime value. So, this is the major four sources, we will discuss about that when we do the calculations.

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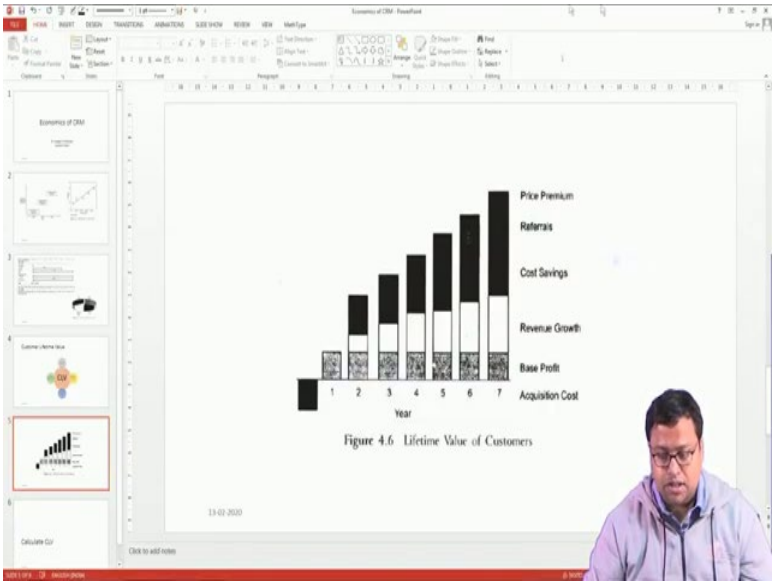


And initial year, it is always a loss and slowly it goes up above and above. So first, it will be only the acquisition cost, then the revenue growth happens by you making more and more purchases, then cost savings happens followed by referrals followed by price premium and etc. So, that is the general sequence of making money in a customer lifetime value calculation.

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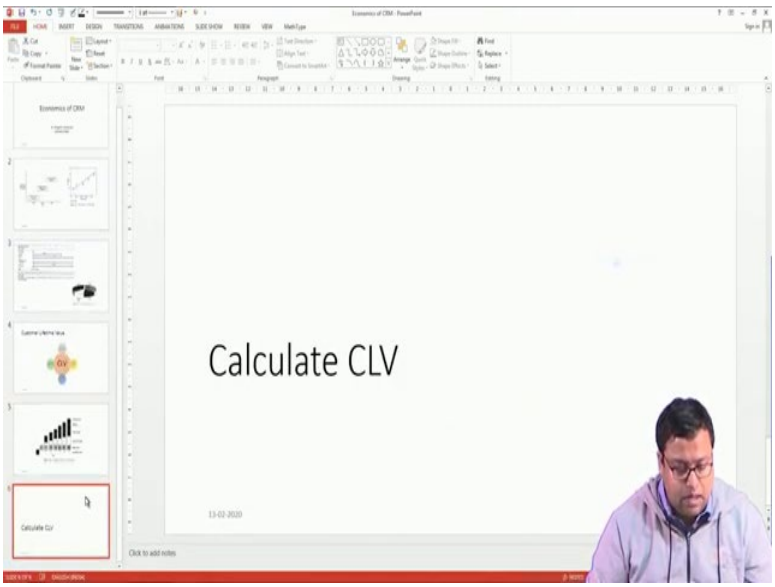
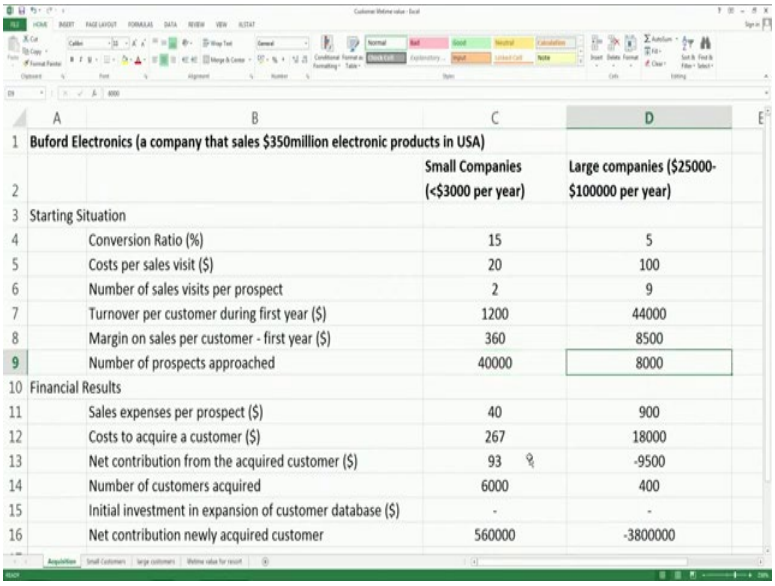
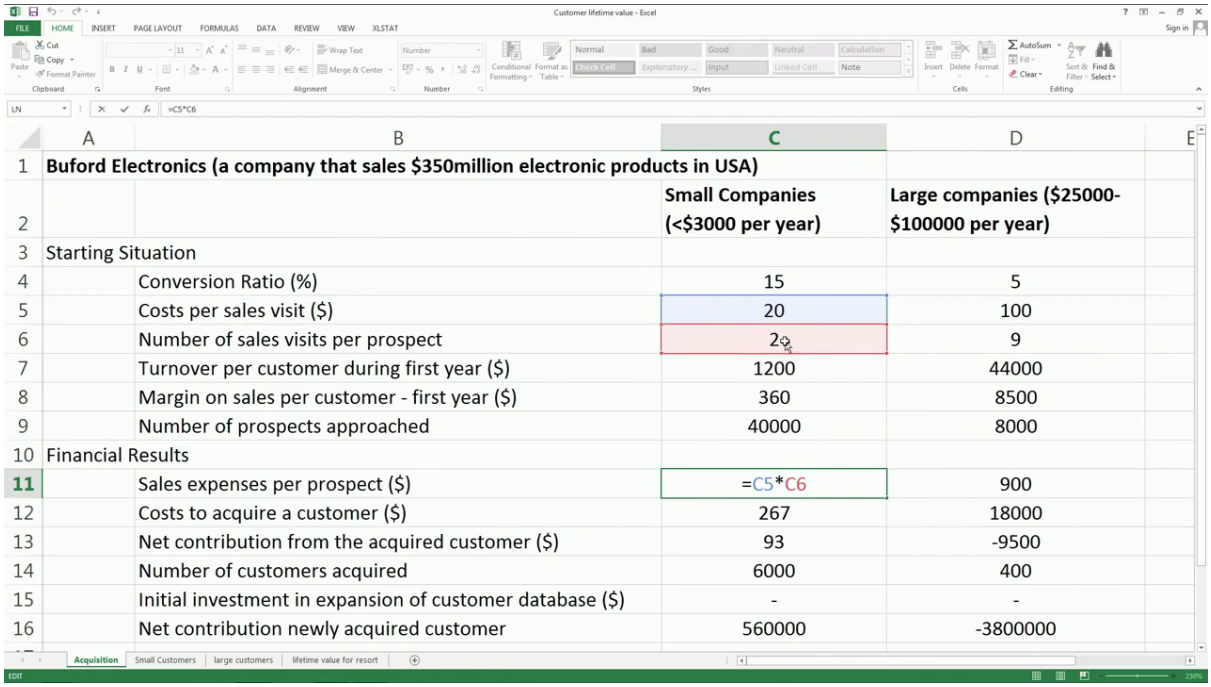


| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | Buford Electronics (a company that sales $350million electronic products in USA) | | | | |
| 2 | | | Small Companies (<$3000 per year) | Large companies ($25000-$100000 per year) | |
| 3 | Starting Situation | | | | |
| 4 | | Conversion Ratio (%) | 15 | 5 | |
| 5 | | Costs per sales visit ($) | 20 | 100 | |
| 6 | | Number of sales visits per prospect | 2 | 9 | |
| 7 | | Turnover per customer during first year ($) | 1200 | 44000 | |
| 8 | | Margin on sales per customer - first year ($) | 360 | 8500 | |
| 9 | | Number of prospects approached | 40000 | 8000 | |
| 10 | Financial Results | | | | |
| 11 | | Sales expenses per prospect ($) | 40 | 900 | |
| 12 | | Costs to acquire a customer ($) | 267 | 18000 | |
| 13 | | Net contribution from the acquired customer ($) | 93 | -9500 | |
| 14 | | Number of customers acquired | 6000 | 400 | |
| 15 | | Initial investment in expansion of customer database ($) | - | - | |
| 16 | | Net contribution newly acquired customer | 560000 | -3800000 | |



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| 9 | | Number of prospects approached | 40000 | 8000 |
| 10 | Financial Results | | | |
| 11 | | Sales expenses per prospect ($) | =C5*C6 | 900 |
| 12 | | Costs to acquire a customer ($) | 267 | 18000 |
| 13 | | Net contribution from the acquired customer ($) | 93 | -9500 |
| 14 | | Number of customers acquired | 6000 | 400 |
| 15 | | Initial investment in expansion of customer database ($) | - | - |
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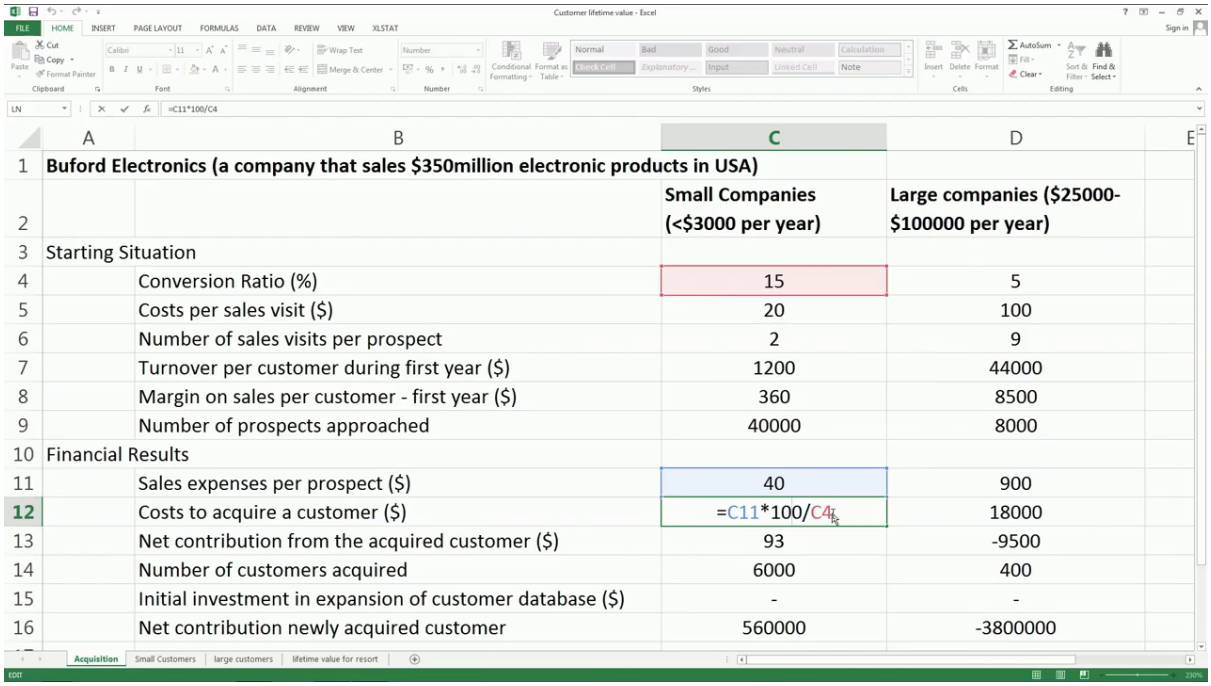

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| 9 | | Number of prospects approached | 40000 | 8000 |
| 10 | Financial Results | | | |
| 11 | | Sales expenses per prospect ($) | 40 | 900 |
| 12 | | Costs to acquire a customer ($) | =C11*100/C4 | 18000 |
| 13 | | Net contribution from the acquired customer ($) | 93 | -9500 |
| 14 | | Number of customers acquired | 6000 | 400 |
| 15 | | Initial investment in expansion of customer database ($) | - | - |
| 16 | | Net contribution newly acquired customer | 560000 | -3800000 |

So, I will calculate customer lifetime value with a small example, which we use for hotels or for restaurants and etc. So, here, I will first do it for B to B and then we will I will do it for B to C there are two types of customers and in case, of B to B, let us say there is a Buford electronics is a electronics company in USA. They are trying to understand that whether they should focus on small companies or large companies, small companies average revenue is less than 3,000 dollars per year, large companies average revenue is 25,000 to 1 lakh dollar per year.

Small companies these are the first data is the basic data that has been given to you and next you actually calculate. So, you have found out that the conversion ratio for small companies is higher than large company 15 percent versus 5 percent. The cost per sales visit, so whenever a salesperson comes to a company, he just he generally gives some gift to the some people some who is sitting there. So, for large company gifts a larger for smaller companies gifts are smaller.

So, that is 20 dollar or 100 dollars. Number of sales visit that you have to do before you close a prospect for a large company it is 9 for a small company it is 2. So, I am just giving an example it might be different and then. So, then turnover per customer during the first year, the values are given 1200 and 44000 and then margin is first year is 360 and 8500 and number of prospects approach is 40,000 here and 8000 here much lower.

Now, then what is the calculation? So, the calculation is saying that then the sales expense per prospect is basically C5*C6 cost per sales into the number of prospect. So, per prospect, I am doing 2 visits and for each visit, I am making 20 dollars and cost spending. So, this into this, these 40 dollars is the cost per prospect. So, let 9 into 100 is 900 that is a sales cost, acquisition cost per prospect.

Then what is the actual acquisition cost C? I am spending 40 dollars but not everybody is getting converted, only 15 percent is getting converted. So, actually net cost of acquisition is that 40 by that 15 percent. So, these divided by these into 100. So, C11 divided by C4 into 100, the cost of acquisition is coming to 267 dollar and here 1800 dollar.

Now, I am making 360 margin in the first year. In the first year, I am spending 267 dollar that how much is my net contribution, net gain 93 and here it is a loss minus 9,500. So, if I have 40,000 customers and 15 percent got converted, then the 6000 here it is 400 here these into these is 560,000 and this is a huge loss. My question here is should I focus on small companies because there is a profit involved? Should I not focus on large companies there because there is no profit involved here?

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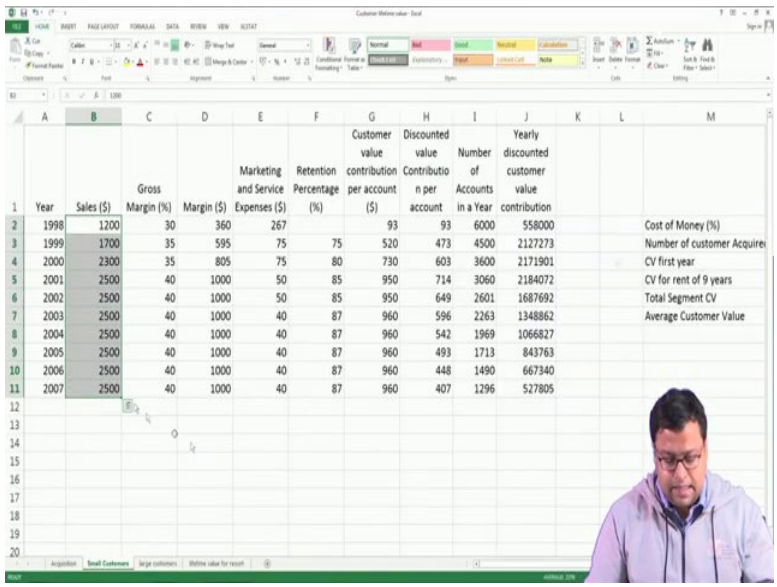
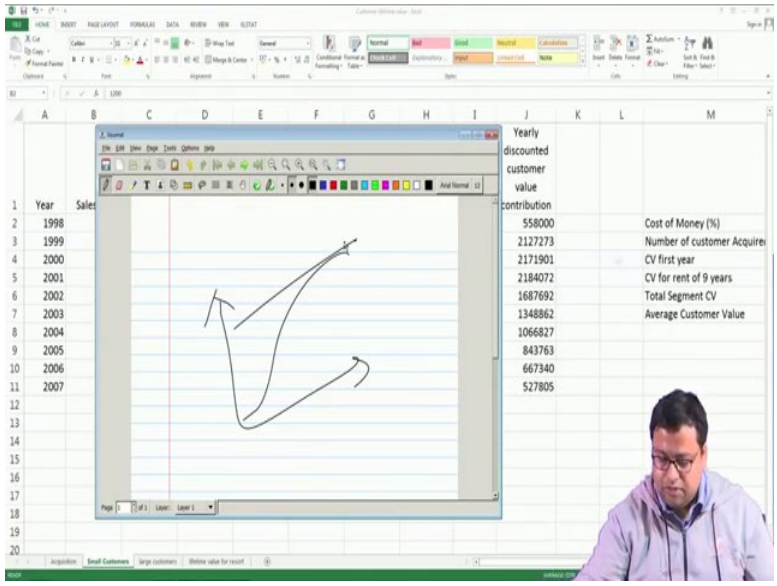


| Year | Sales ($) | Gross Margin (%) | Margin ($) | Marketing and Service Expenses ($) | Retention Percentage (%) | Customer value contribution per account ($) | Discounted value Contribution per account | Number of Accounts in a Year | Yearly discounted customer value contribution | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1998 | 1200 | 30 | 360 | 267 | | 93 | 93 | 6000 | 558000 | Cost of Money (%) |
| 1999 | 1700 | 35 | 595 | 75 | 75 | 520 | 473 | 4500 | 2127273 | Number of customer Acquire |
| 2000 | 2300 | 35 | 805 | 75 | 80 | 730 | 603 | 3600 | 2171901 | CV first year |
| 2001 | 2500 | 40 | 1000 | 50 | 85 | 950 | 714 | 3060 | 2184072 | CV for rent of 9 years |
| 2002 | 2500 | 40 | 1000 | 50 | 85 | 950 | 649 | 2601 | 1687692 | Total Segment CV |
| 2003 | 2500 | 40 | 1000 | 40 | 87 | 960 | 596 | 2263 | 1348862 | Average Customer Value |
| 2004 | 2500 | 40 | 1000 | 40 | 87 | 960 | 542 | 1969 | 1066827 | |
| 2005 | 2500 | 40 | 1000 | 40 | 87 | 960 | 493 | 1713 | 843763 | |
| 2006 | 2500 | 40 | 1000 | 40 | 87 | 960 | 448 | 1490 | 667340 | |
| 2007 | 2500 | 40 | 1000 | 40 | 87 | 960 | 407 | 1296 | 527805 | |



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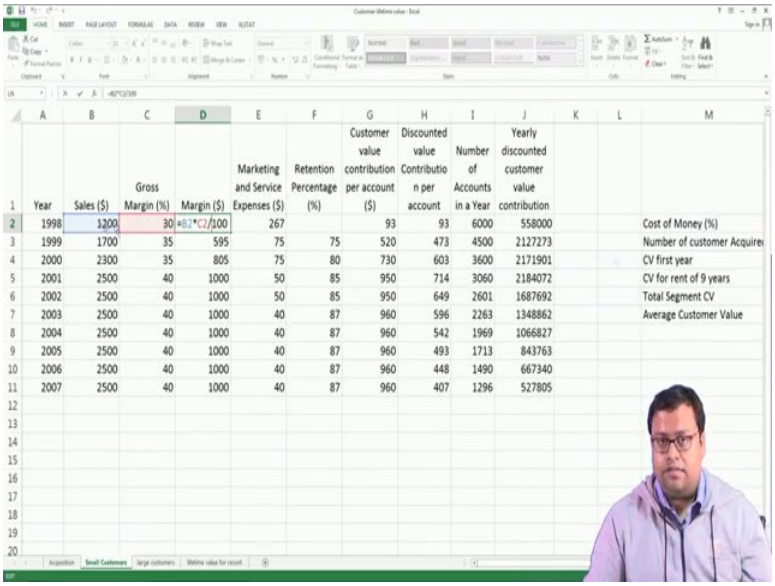

| | A | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Year | Sales ($) | Gross Margin (%) | Margin ($) | Marketing and Service Expenses ($) | Retention Percentage (%) | Customer value contribution per account ($) | Discounted value Contribution per account | Number of Accounts in a Year | Yearly discounted customer value contribution | | | |
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| 3 | 1999 | 1700 | 35 | 595 | 75 | 75 | 520 | 473 | 4500 | 2127273 | | | Number of customer Acquire |
| 4 | 2000 | 2300 | 35 | 805 | 75 | 80 | 730 | 603 | 3600 | 2171901 | | | CV first year |
| 5 | 2001 | 2500 | 40 | 1000 | 50 | 85 | 950 | 714 | 3060 | 2184072 | | | CV for rent of 9 years |
| 6 | 2002 | 2500 | 40 | 1000 | 50 | 85 | 950 | 649 | 2601 | 1687692 | | | Total Segment CV |
| 7 | 2003 | 2500 | 40 | 1000 | 40 | 87 | 960 | 596 | 2263 | 1348862 | | | Average Customer Value |
| 8 | 2004 | 2500 | 40 | 1000 | 40 | 87 | 960 | 542 | 1969 | 1066827 | | | |
| 9 | 2005 | 2500 | 40 | 1000 | 40 | 87 | 960 | 493 | 1713 | 843763 | | | |
| 10 | 2006 | 2500 | 40 | 1000 | 40 | 87 | 960 | 448 | 1490 | 667340 | | | |
| 11 | 2007 | 2500 | 40 | 1000 | 40 | 87 | 960 | 407 | 1296 | 527805 | | | |
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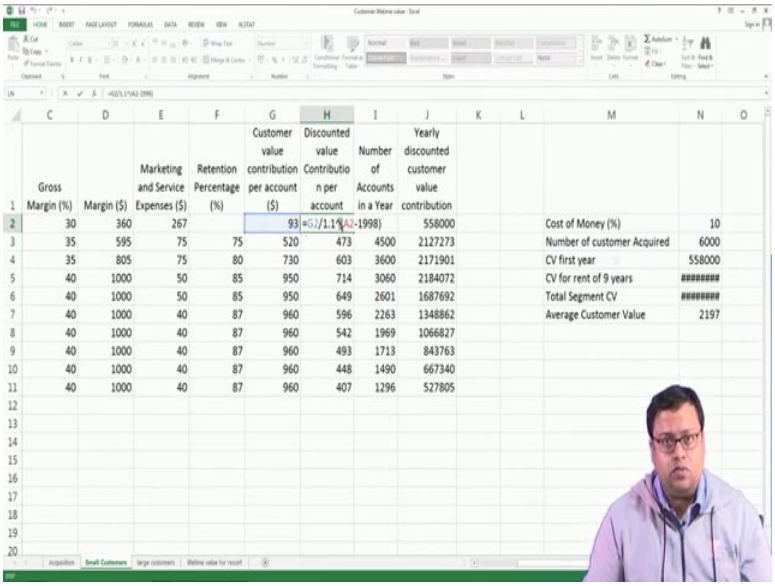

| | C | D | E | F | G | H | I | J | K | L | M | N | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Gross Margin (%) | Margin ($) | Marketing and Service Expenses ($) | Retention Percentage (%) | Customer value contribution per account ($) | Discounted value Contribution per account | Number of Accounts in a Year | Yearly discounted customer value contribution | | | | | |
| 2 | 30 | 360 | 267 | | 93 | =G2/1.1^(A2-1998) | 6000 | 558000 | | | Cost of Money (%) | 10 | |
| 3 | 35 | 595 | 75 | 75 | 520 | 473 | 4500 | 2127273 | | | Number of customer Acquired | 6000 | |
| 4 | 35 | 805 | 75 | 80 | 730 | 603 | 3600 | 2171901 | | | CV first year | 558000 | |
| 5 | 40 | 1000 | 50 | 85 | 950 | 714 | 3060 | 2184072 | | | CV for rent of 9 years | ######## | |
| 6 | 40 | 1000 | 50 | 85 | 950 | 649 | 2601 | 1687692 | | | Total Segment CV | ######## | |
| 7 | 40 | 1000 | 40 | 87 | 960 | 596 | 2263 | 1348862 | | | Average Customer Value | 2197 | |
| 8 | 40 | 1000 | 40 | 87 | 960 | 542 | 1969 | 1066827 | | | | | |
| 9 | 40 | 1000 | 40 | 87 | 960 | 493 | 1713 | 843763 | | | | | |
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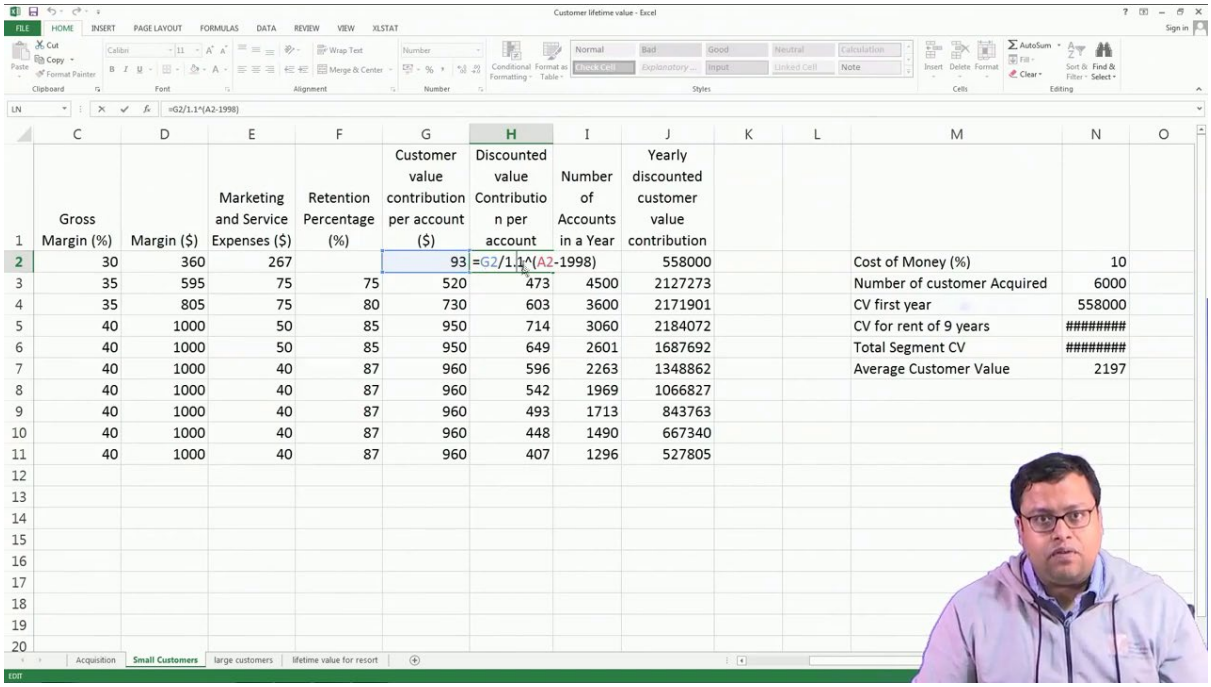


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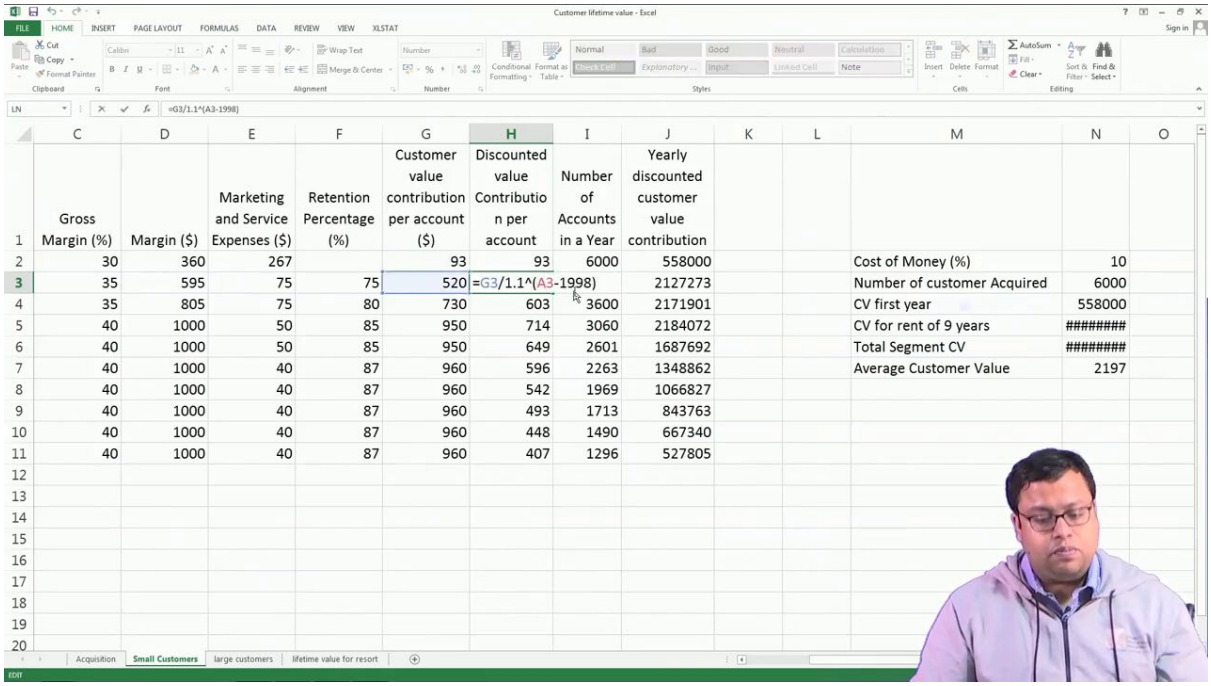


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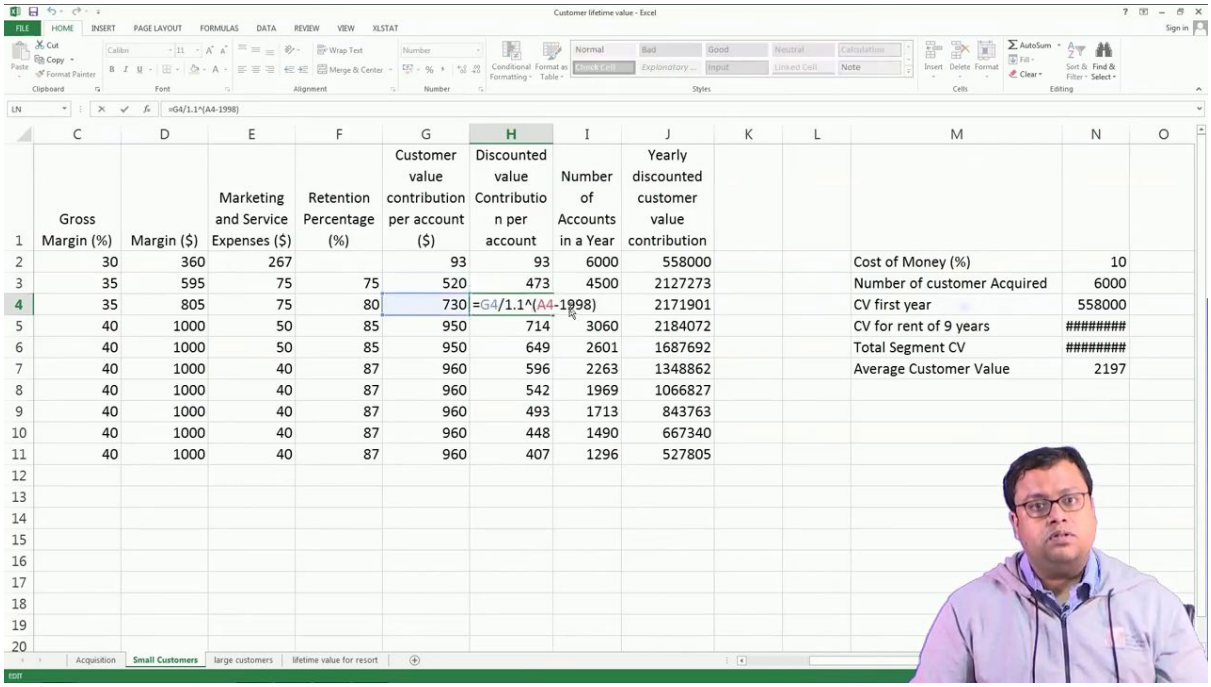
| 3 | 35 | 595 | 75 | 75 | 520 | =G3/1.1^(A3-1998) | | 2127273 | | | Number of customer Acquired | 6000 | |
| 4 | 35 | 805 | 75 | 80 | 730 | 603 | 3600 | 2171901 | | | CV first year | 558000 | |
| 5 | 40 | 1000 | 50 | 85 | 950 | 714 | 3060 | 2184072 | | | CV for rent of 9 years | ######## | |
| 6 | 40 | 1000 | 50 | 85 | 950 | 649 | 2601 | 1687692 | | | Total Segment CV | ######## | |
| 7 | 40 | 1000 | 40 | 87 | 960 | 596 | 2263 | 1348862 | | | Average Customer Value | 2197 | |
| 8 | 40 | 1000 | 40 | 87 | 960 | 542 | 1969 | 1066827 | | | | | |
| 9 | 40 | 1000 | 40 | 87 | 960 | 493 | 1713 | 843763 | | | | | |
| 10 | 40 | 1000 | 40 | 87 | 960 | 448 | 1490 | 667340 | | | | | |
| 11 | 40 | 1000 | 40 | 87 | 960 | 407 | 1296 | 527805 | | | | | |




| | C | D | E | F | G | H | I | J | K | L | M | N | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Gross Margin (%) | Margin ($) | Marketing and Service Expenses ($) | Retention Percentage (%) | Customer value contribution per account ($) | Discounted value Contribution per account | Number of Accounts in a Year | Yearly discounted customer value contribution | | | | | |
| 2 | 30 | 360 | 267 | | 93 | 93 | 6000 | 558000 | | | Cost of Money (%) | 10 | |
| 3 | 35 | 595 | 75 | 75 | 520 | 473 | 4500 | 2127273 | | | Number of customer Acquired | 6000 | |
| 4 | 35 | 805 | 75 | 80 | 730 | =G4/1.1^(A4-1998) | | 2171901 | | | CV first year | 558000 | |
| 5 | 40 | 1000 | 50 | 85 | 950 | 714 | 3060 | 2184072 | | | CV for rent of 9 years | ######## | |
| 6 | 40 | 1000 | 50 | 85 | 950 | 649 | 2601 | 1687692 | | | Total Segment CV | ######## | |
| 7 | 40 | 1000 | 40 | 87 | 960 | 596 | 2263 | 1348862 | | | Average Customer Value | 2197 | |
| 8 | 40 | 1000 | 40 | 87 | 960 | 542 | 1969 | 1066827 | | | | | |
| 9 | 40 | 1000 | 40 | 87 | 960 | 493 | 1713 | 843763 | | | | | |
| 10 | 40 | 1000 | 40 | 87 | 960 | 448 | 1490 | 667340 | | | | | |
| 11 | 40 | 1000 | 40 | 87 | 960 | 407 | 1296 | 527805 | | | | | |
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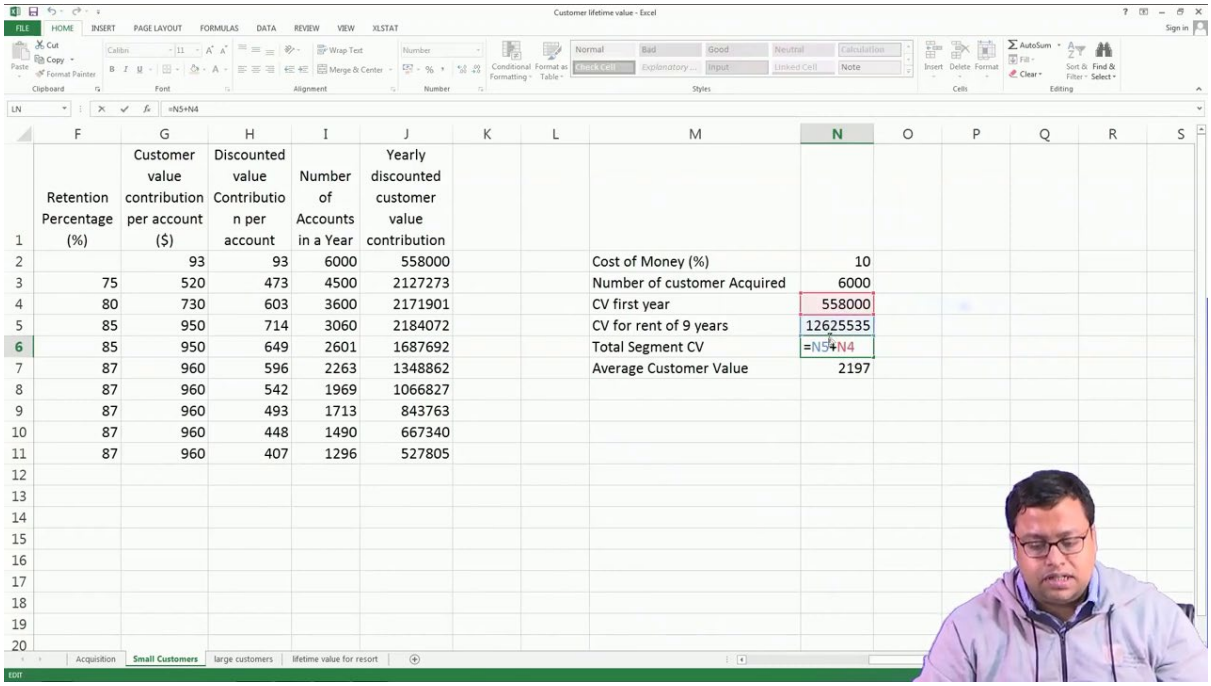


| | F | G | H | I | J | K | L | M | N | O | P | Q | R | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Retention Percentage (%) | Customer value contribution per account ($) | Discounted value Contribution per account | Number of Accounts in a Year | Yearly discounted customer value contribution | | | | | | | | | |
| 2 | | 93 | 93 | 6000 | 558000 | | | Cost of Money (%) | 10 | | | | | |
| 3 | 75 | 520 | 473 | 4500 | 2127273 | | | Number of customer Acquired | 6000 | | | | | |
| 4 | 80 | 730 | 603 | 3600 | 2171901 | | | CV first year | 558000 | | | | | |
| 5 | 85 | 950 | 714 | 3060 | 2184072 | | | CV for rent of 9 years | 12625535 | | | | | |
| 6 | 85 | 950 | 649 | 2601 | 1687692 | | | Total Segment CV | =N5+N4 | | | | | |
| 7 | 87 | 960 | 596 | 2263 | 1348862 | | | Average Customer Value | 2197 | | | | | |
| 8 | 87 | 960 | 542 | 1969 | 1066827 | | | | | | | | | |
| 9 | 87 | 960 | 493 | 1713 | 843763 | | | | | | | | | |
| 10 | 87 | 960 | 448 | 1490 | 667340 | | | | | | | | | |
| 11 | 87 | 960 | 407 | 1296 | 527805 | | | | | | | | | |
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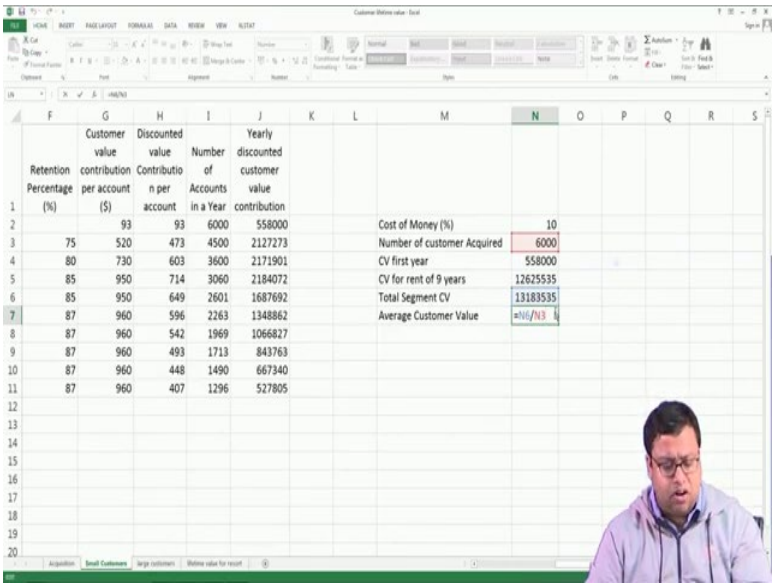

| | F | G | H | I | J | K | L | M | N | O | P | Q | R | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Retention Percentage (%) | Customer value contribution per account ($) | Discounted value Contributio n per account | Number of Accounts in a Year | Yearly discounted customer value contribution | | | | | | | | | |
| 2 | | 93 | 93 | 6000 | 558000 | | | Cost of Money (%) | 10 | | | | | |
| 3 | 75 | 520 | 473 | 4500 | 2127273 | | | Number of customer Acquired | 6000 | | | | | |
| 4 | 80 | 730 | 603 | 3600 | 2171901 | | | CV first year | 558000 | | | | | |
| 5 | 85 | 950 | 714 | 3060 | 2184072 | | | CV for rent of 9 years | 12625535 | | | | | |
| 6 | 85 | 950 | 649 | 2601 | 1687692 | | | Total Segment CV | 13183535 | | | | | |
| 7 | 87 | 960 | 596 | 2263 | 1348862 | | | Average Customer Value | =N6/N3 | | | | | |
| 8 | 87 | 960 | 542 | 1969 | 1066827 | | | | | | | | | |
| 9 | 87 | 960 | 493 | 1713 | 843763 | | | | | | | | | |
| 10 | 87 | 960 | 448 | 1490 | 667340 | | | | | | | | | |
| 11 | 87 | 960 | 407 | 1296 | 527805 | | | | | | | | | |
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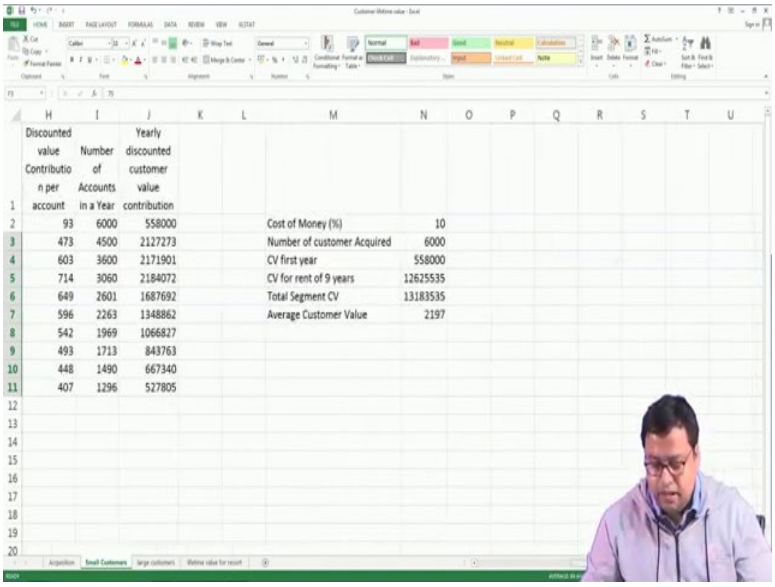

| | H | I | J | K | L | M | N | O | P | Q | R | S | T | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Discounted value Contributio n per account | Number of Accounts in a Year | Yearly discounted customer value contribution | | | | | | | | | | | |
| 2 | 93 | 6000 | 558000 | | | Cost of Money (%) | 10 | | | | | | | |
| 3 | 473 | 4500 | 2127273 | | | Number of customer Acquired | 6000 | | | | | | | |
| 4 | 603 | 3600 | 2171901 | | | CV first year | 558000 | | | | | | | |
| 5 | 714 | 3060 | 2184072 | | | CV for rent of 9 years | 12625535 | | | | | | | |
| 6 | 649 | 2601 | 1687692 | | | Total Segment CV | 13183535 | | | | | | | |
| 7 | 596 | 2263 | 1348862 | | | Average Customer Value | 2197 | | | | | | | |
| 8 | 542 | 1969 | 1066827 | | | | | | | | | | | |
| 9 | 493 | 1713 | 843763 | | | | | | | | | | | |
| 10 | 448 | 1490 | 667340 | | | | | | | | | | | |
| 11 | 407 | 1296 | 527805 | | | | | | | | | | | |
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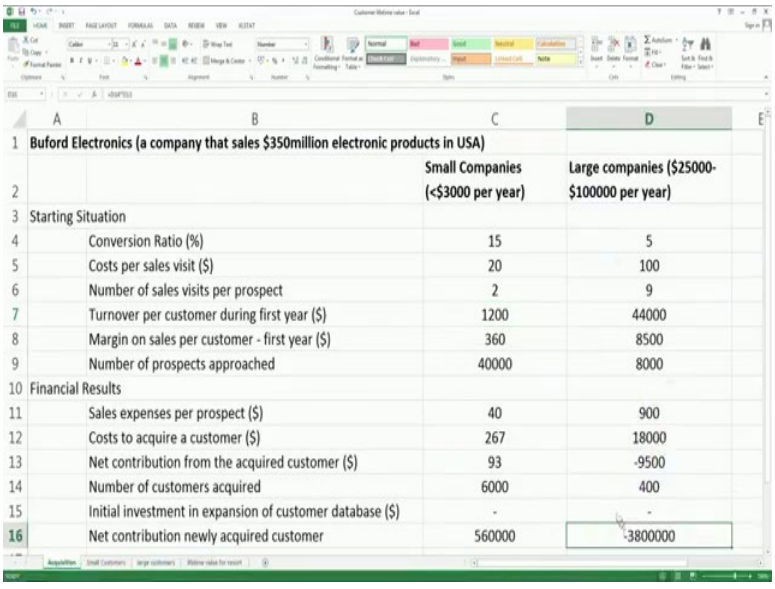

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | **Buford Electronics (a company that sales $350million electronic products in USA)** | | | | |
| 2 | | | **Small Companies (<$3000 per year)** | **Large companies ($25000-$100000 per year)** | |
| 3 | Starting Situation | | | | |
| 4 | | Conversion Ratio (%) | 15 | 5 | |
| 5 | | Costs per sales visit ($) | 20 | 100 | |
| 6 | | Number of sales visits per prospect | 2 | 9 | |
| 7 | | Turnover per customer during first year ($) | 1200 | 44000 | |
| 8 | | Margin on sales per customer - first year ($) | 360 | 8500 | |
| 9 | | Number of prospects approached | 40000 | 8000 | |
| 10 | Financial Results | | | | |
| 11 | | Sales expenses per prospect ($) | 40 | 900 | |
| 12 | | Costs to acquire a customer ($) | 267 | 18000 | |
| 13 | | Net contribution from the acquired customer ($) | 93 | -9500 | |
| 14 | | Number of customers acquired | 6000 | 400 | |
| 15 | | Initial investment in expansion of customer database ($) | - | - | |
| 16 | | Net contribution newly acquired customer | 560000 | -3800000 | |

To answer that we have to do our customer lifetime value calculation and you just take. So, for small companies, I am doing the customer lifetime value calculation. So, let us say from 1998 to 2007, first choice is the lifespan I told you lifetime. So, I am taking a lifetime of 10 years and the sales is as it starts from 1200 and I am forecasting these are forecasting results. This should come from your data that the sales goes up and the sales actually will follow on a this kind of a curve, but sales will follow this kind of a curve, S curve basically. So, if go up and then get saturated somewhere.

So, if it gets saturated somewhere then it gets saturated 2500. So, this value should come from this and then the margin will also grow up slowly. Because as the customer as I told the profitability goes up because you know the customer the cost of making customer happy comes down.

So, let us say it is 30 percent initially and let it is 40 percent. So, what is the margin? It is nothing but this into this by 100 simple thing. So, I will not spend time on, this is a margin that I have calculated. What is the marketing expenditure? Remember the first year it is the acquisition cost. The second year these are values that I, so again comes from this thing. So, second year let us say it is 75 and slowly it comes down, it is just a small cost that you incur to keep the relationship intact.

So, that was a gift, some service extra service and the retention rate also 75 percent and slowly goes up, up to 87 percent it goes up. So, then what is the customer value contribution? So, margin minus the cost, so this much is the contribution every year this minus this D minus E and then how much is the discounted contribution the old contribution, I have taken the cost of money is 10 percent.

So, discounted contribution is nothing but, these by 1.1 to the power 0 in the first case, 1.1 to the power 1 in the second case, 1.1 to the power 2 in the third case and so on. So, this is the time value of money I have considered time value of money and discounted it, with this discounted rate, I will not get the whole money because 93 whoever give me 93 only 75 percent of them will remain.

So, number of accounts first year if it is 6000, number of accounts second year is these into 75 percent, number of account third year is this into 80 percent and so, number of accounts goes down, contribution goes up. So, this contribution into the number of accounts will be the total revenue. Now, new customers might come in 1999 also 2000 also. But that is not my

focus, I am comparing should I focus on 1998 small companies or big companies? So, I will only focus on those people whom I have acquired in 1998.

So, that is why 6000 which comes down to 4500. The actual number of customers for this company might be much higher, because he has again acquired some people in 1999. But that is not the part of my calculation. I am focusing only, on those people, only on that batch, one batch of 1998 where small companies, another batch of 1998 big companies.

I will compare who are better profitable. So, these into this gives me this, this is my total contribution of this year and I am getting contribution of multiple years, if I add them up that is the net contribution of this people. So, if I add them up, the total segment contribution is this, it is nothing but the summation, if you just check the summation of these values is the same value here.

So, if I have 6000 customers acquired in the first year. The corresponding average customer value is this divided by 6000 comes up to be 2197. The same thing I will do it for bigger companies and I will compare whether bigger companies are more profitable or less profitable. So, the assumptions a few will be different.

For example, 44000, I assume that, so it goes double. So, here generally, so generally, I'm assuming that this is becoming double from 1200 to 2500. So, this is also becoming double, almost double is something around. The gross margin is 30 to 40 percent. Now margin goes up a little much more in case of this guy's, 19 percent to 30 percent. So, a little bit more not very high, little bit more.

So, this is the margin then this may expenses now this goes down, this expenses goes down quite a bit after you have acquired. So, that is the marketing service expenses and then what is the retention rate? The retention rate is 40 percent to 70 percent, it goes up that is also standard.

This one is retention rate is going up in a much faster rate. This one is slower than that and then based on that the rest of the calculations were done the first year there is a huge loss. But second year onwards there was some profit. Now, if I calculate the total thing the total segments is small. But the individual customer has average value of 4014, which is pretty big.

But the total segment size is small, you will see it is basically 1.6 million and here it is basically 13 million. So, the total segment size in this case is much bigger. But here the total

segment size is small, but the average customer lifetime value is big. So, you have to take a call that which one average customer lifetime value is big, but total segment size is small.

So, you cannot only focus on large customers, you have to mix and match. But you have to prefer large customers. Provided you can withstand this much of loss in the first year. If you cannot withstand this much of loss in the first year, if you do not have deep enough pockets to better go for small customers. So, that is the customer lifetime value for B to B case.

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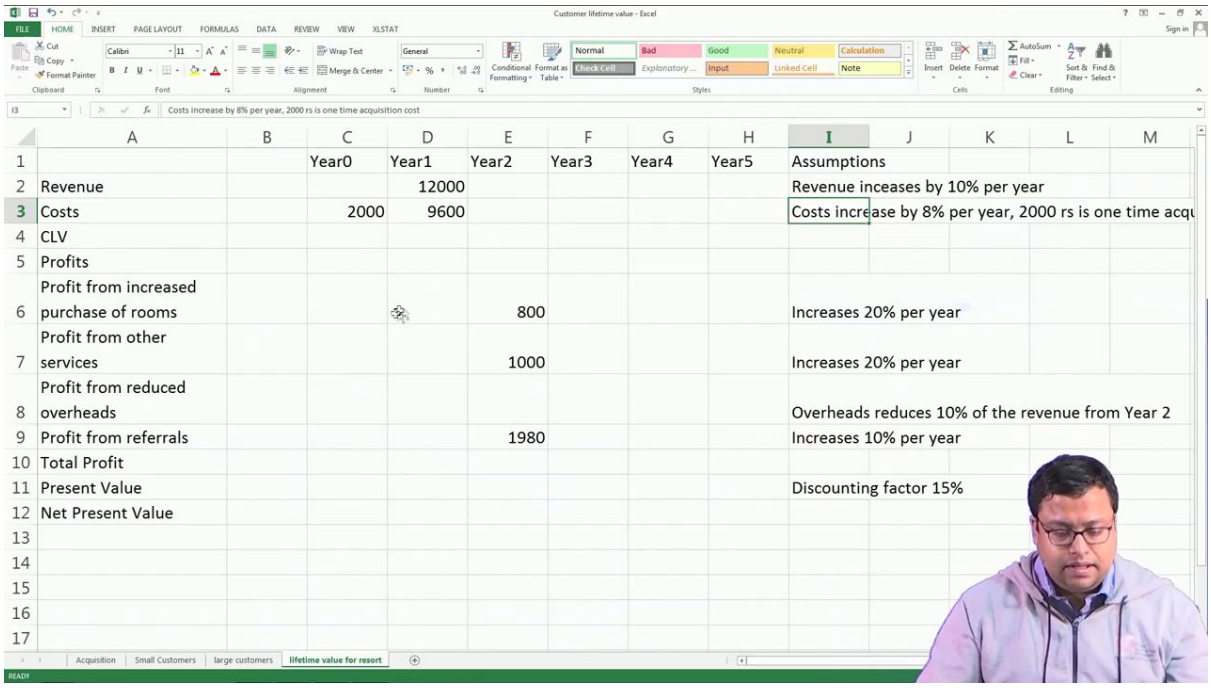


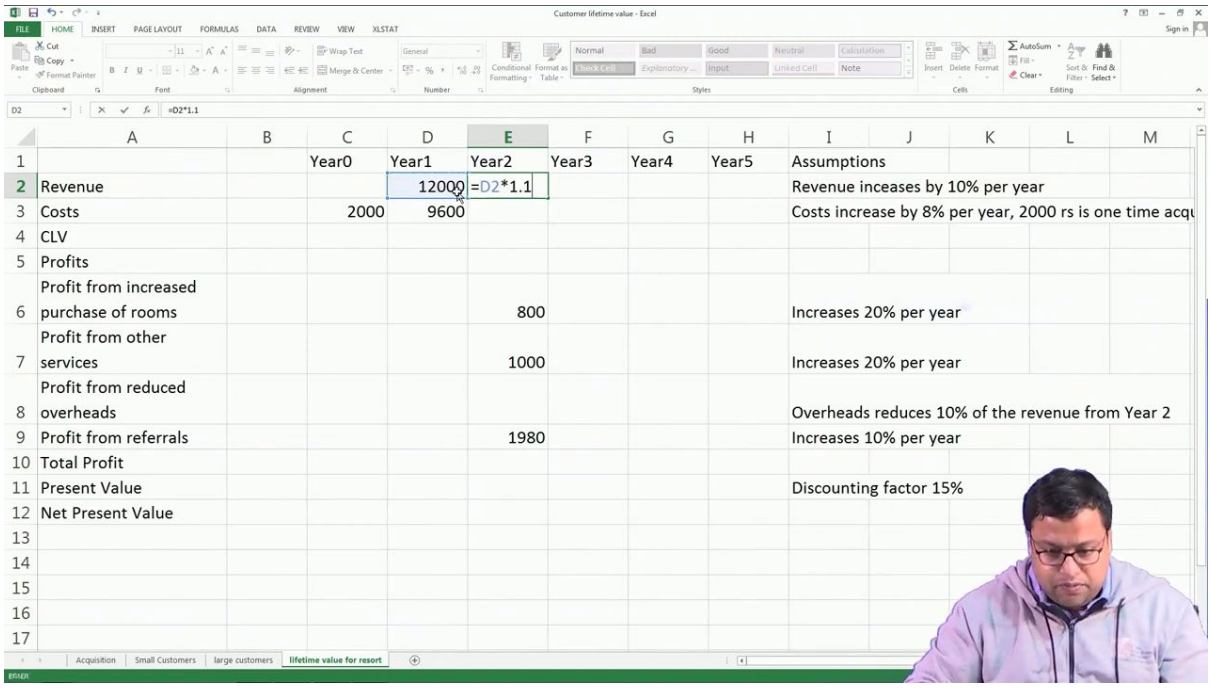

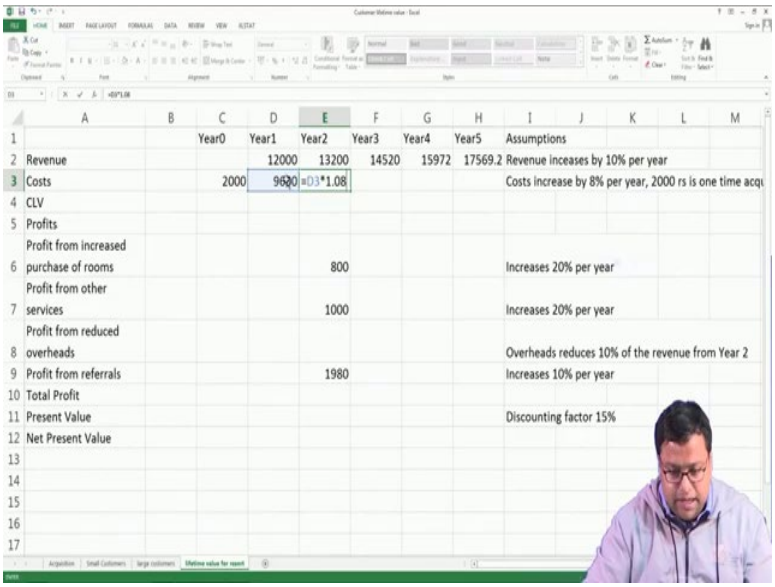

| | A | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | Year0 | Year1 | Year2 | Year3 | Year4 | Year5 | Assumptions | | | | |
| 2 | Revenue | | | 12000 | 13200 | 14520 | 15972 | 17569.2 | Revenue inceases by 10% per year | | | | |
| 3 | Costs | | 2000 | 9600 | =D3*1.08 | | | | Costs increase by 8% per year, 2000 rs is one time acqu | | | | |
| 4 | CLV | | | | | | | | | | | | |
| 5 | Profits | | | | | | | | | | | | |
| 6 | Profit from increased purchase of rooms | | | | 800 | | | | Increases 20% per year | | | | |
| 7 | Profit from other services | | | | 1000 | | | | Increases 20% per year | | | | |
| 8 | Profit from reduced overheads | | | | | | | | Overheads reduces 10% of the revenue from Year 2 | | | | |
| 9 | Profit from referrals | | | | 1980 | | | | Increases 10% per year | | | | |
| 10 | Total Profit | | | | | | | | | | | | |
| 11 | Present Value | | | | | | | | Discounting factor 15% | | | | |
| 12 | Net Present Value | | | | | | | | | | | | |
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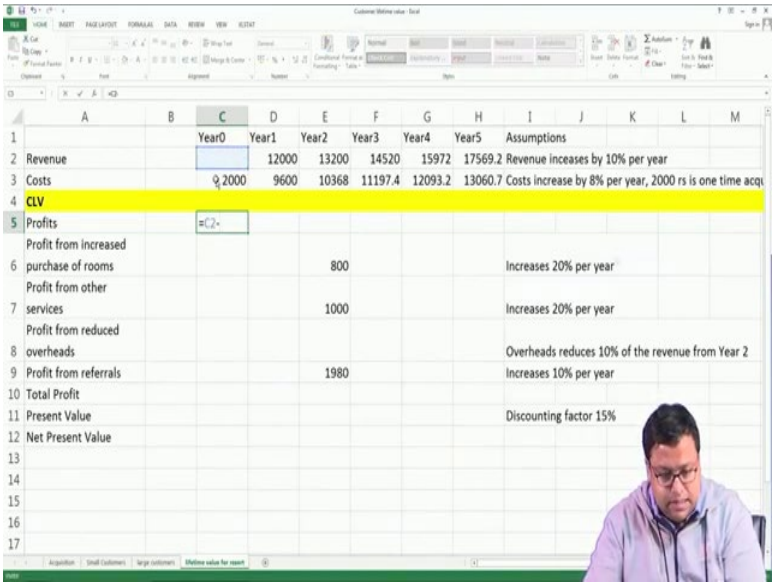

| | A | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | Year0 | Year1 | Year2 | Year3 | Year4 | Year5 | Assumptions | | | | |
| 2 | Revenue | | | 12000 | 13200 | 14520 | 15972 | 17569.2 | Revenue inceases by 10% per year | | | | |
| 3 | Costs | | 2000 | 9600 | 10368 | 11197.4 | 12093.2 | 13060.7 | Costs increase by 8% per year, 2000 rs is one time acqu | | | | |
| 4 | CLV | | | | | | | | | | | | |
| 5 | Profits | | =C2- | | | | | | | | | | |
| 6 | Profit from increased purchase of rooms | | | | 800 | | | | Increases 20% per year | | | | |
| 7 | Profit from other services | | | | 1000 | | | | Increases 20% per year | | | | |
| 8 | Profit from reduced overheads | | | | | | | | Overheads reduces 10% of the revenue from Year 2 | | | | |
| 9 | Profit from referrals | | | | 1980 | | | | Increases 10% per year | | | | |
| 10 | Total Profit | | | | | | | | | | | | |
| 11 | Present Value | | | | | | | | Discounting factor 15% | | | | |
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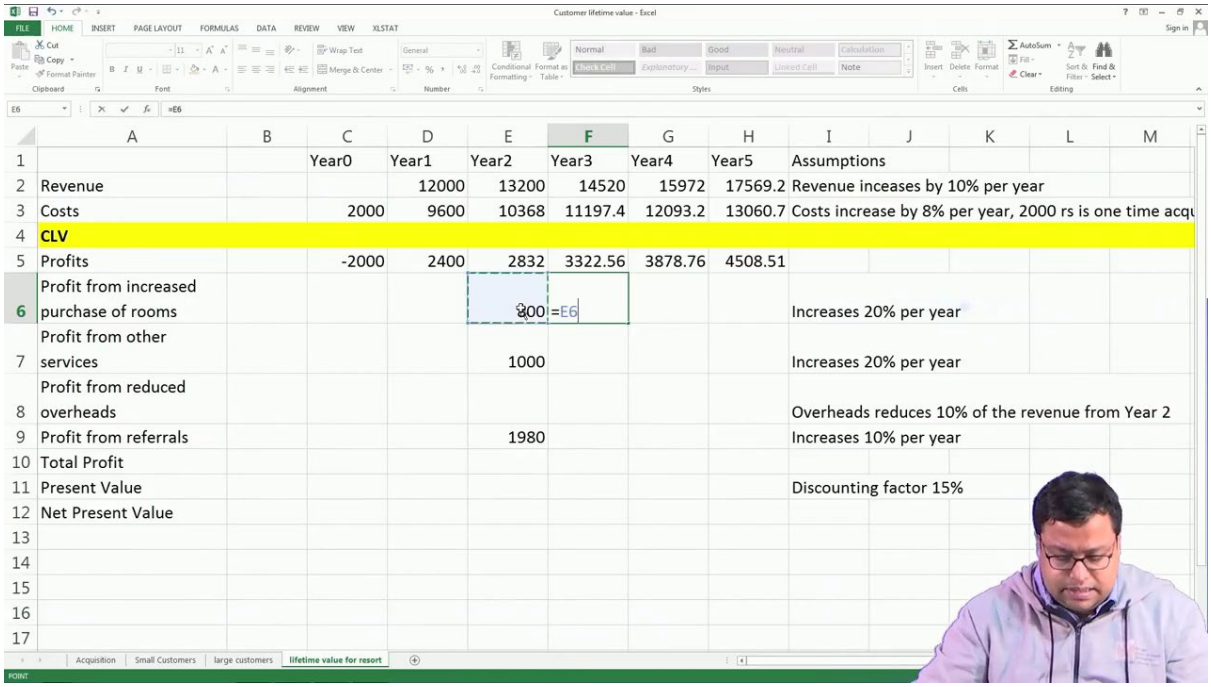


| | A | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | Year0 | Year1 | Year2 | Year3 | Year4 | Year5 | Assumptions | | | | |
| 2 | Revenue | | | 12000 | 13200 | 14520 | 15972 | 17569.2 | Revenue inceases by 10% per year | | | | |
| 3 | Costs | | 2000 | 9600 | 10368 | 11197.4 | 12093.2 | 13060.7 | Costs increase by 8% per year, 2000 rs is one time acqu | | | | |
| 4 | CLV | | | | | | | | | | | | |
| 5 | Profits | | -2000 | 2400 | 2832 | 3322.56 | 3878.76 | 4508.51 | | | | | |
| 6 | Profit from increased purchase of rooms | | | | 800 | =E6 | | | Increases 20% per year | | | | |
| 7 | Profit from other services | | | | 1000 | | | | Increases 20% per year | | | | |
| 8 | Profit from reduced overheads | | | | | | | | Overheads reduces 10% of the revenue from Year 2 | | | | |
| 9 | Profit from referrals | | | | 1980 | | | | Increases 10% per year | | | | |
| 10 | Total Profit | | | | | | | | | | | | |
| 11 | Present Value | | | | | | | | Discounting factor 15% | | | | |
| 12 | Net Present Value | | | | | | | | | | | | |
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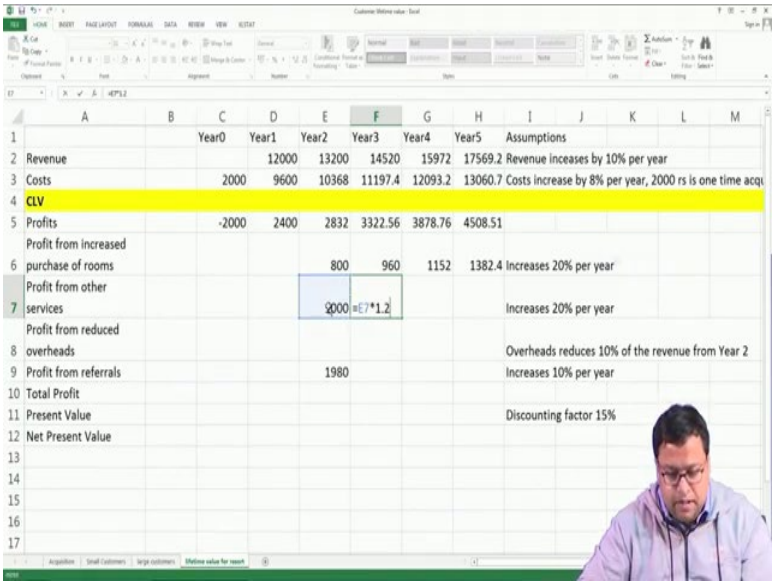


| | A | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | Year0 | Year1 | Year2 | Year3 | Year4 | Year5 | Assumptions | | | | |
| 2 | Revenue | | | 12000 | 13200 | 14520 | 15972 | 17569.2 | Revenue inceases by 10% per year | | | | |
| 3 | Costs | | 2000 | 9600 | 10368 | 11197.4 | 12093.2 | 13060.7 | Costs increase by 8% per year, 2000 rs is one time acqu | | | | |
| 4 | CLV | | | | | | | | | | | | |
| 5 | Profits | | -2000 | 2400 | 2832 | 3322.56 | 3878.76 | 4508.51 | | | | | |
| 6 | Profit from increased purchase of rooms | | | | 800 | 960 | 1152 | 1382.4 | Increases 20% per year | | | | |
| 7 | Profit from other services | | | | 2000 | =E7*1.2 | | | Increases 20% per year | | | | |
| 8 | Profit from reduced overheads | | | | | | | | Overheads reduces 10% of the revenue from Year 2 | | | | |
| 9 | Profit from referrals | | | | 1980 | | | | Increases 10% per year | | | | |
| 10 | Total Profit | | | | | | | | | | | | |
| 11 | Present Value | | | | | | | | Discounting factor 15% | | | | |
| 12 | Net Present Value | | | | | | | | | | | | |
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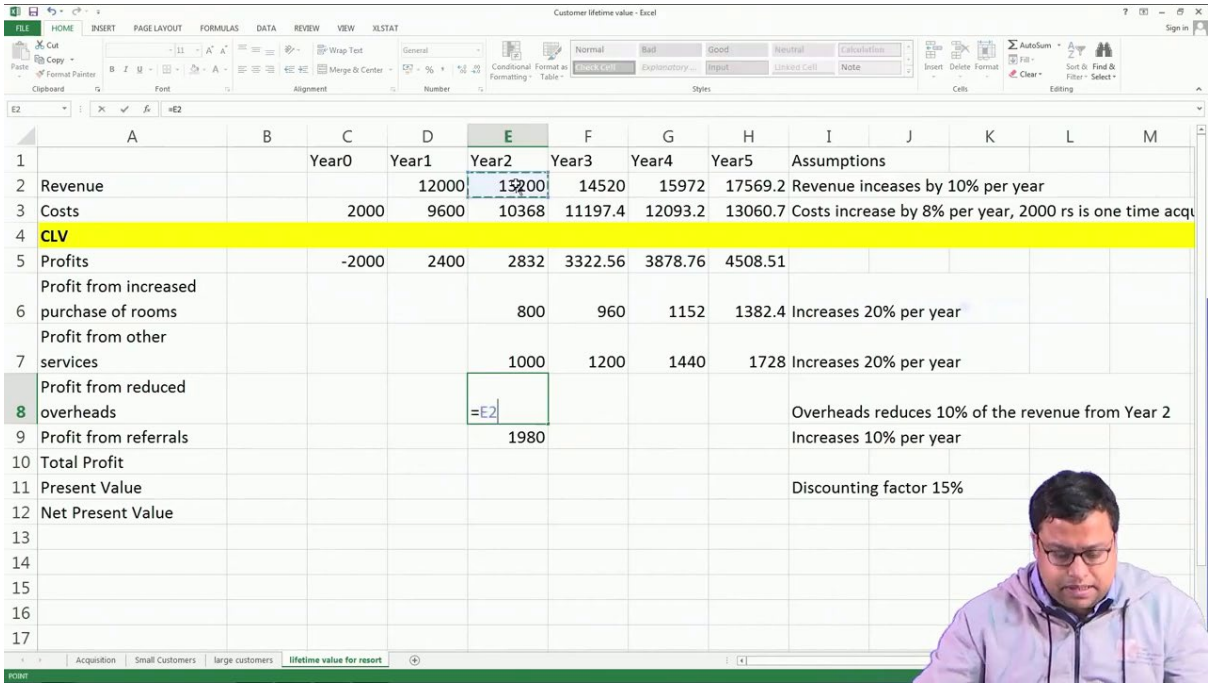
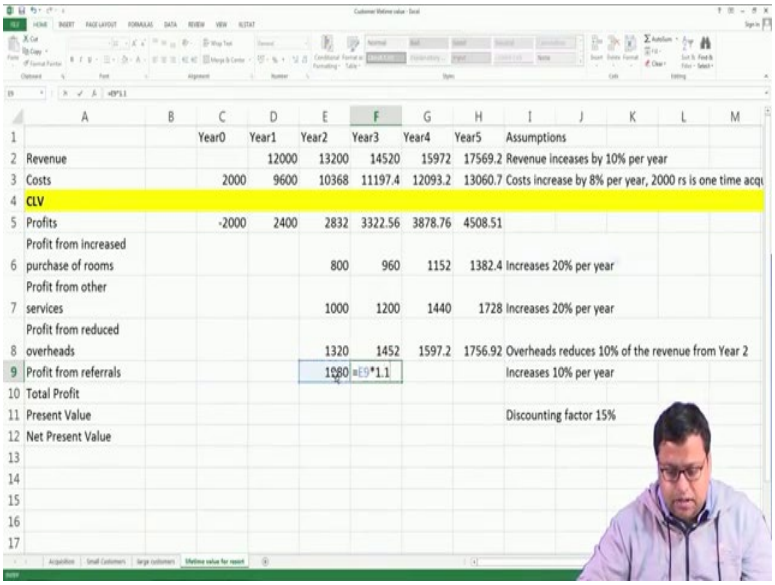
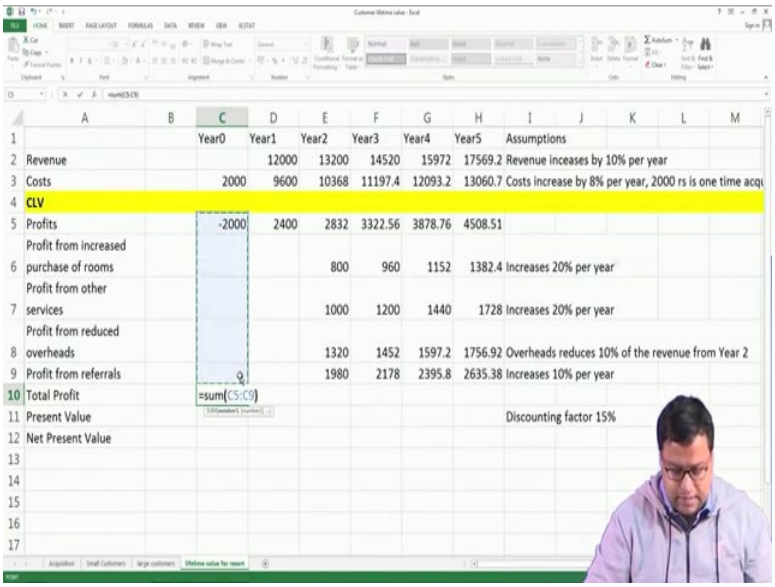


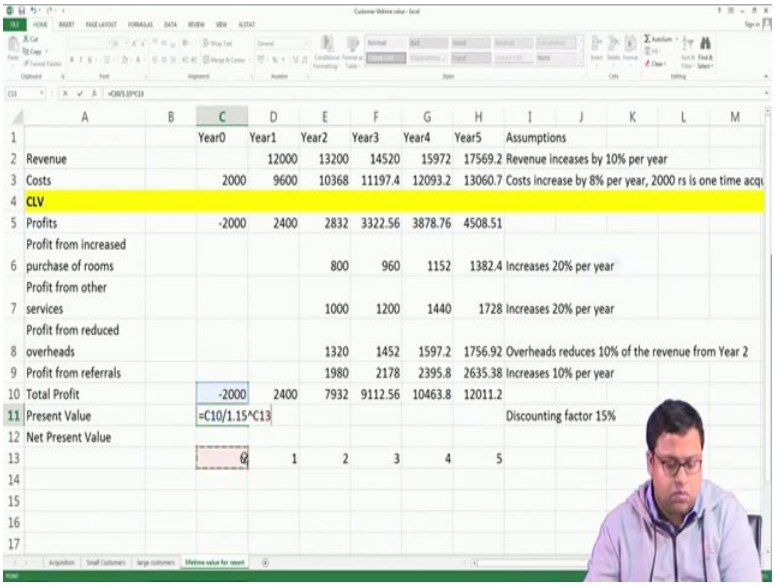

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | | Year0 | Year1 | Year2 | Year3 | Year4 | Year5 | Assumptions |
| 2 | Revenue | | | 12000 | 13200 | 14520 | 15972 | 17569.2 | Revenue inceases by 10% per year |
| 3 | Costs | | 2000 | 9600 | 10368 | 11197.4 | 12093.2 | 13060.7 | Costs increase by 8% per year, 2000 rs is one time acqu |
| 4 | CLV | | | | | | | | |
| 5 | Profits | | -2000 | 2400 | 2832 | 3322.56 | 3878.76 | 4508.51 | |
| 6 | Profit from increased purchase of rooms | | | | 800 | 960 | 1152 | 1382.4 | Increases 20% per year |
| 7 | Profit from other services | | | | 1000 | 1200 | 1440 | 1728 | Increases 20% per year |
| 8 | Profit from reduced overheads | | | | =E2 | | | | Overheads reduces 10% of the revenue from Year 2 |
| 9 | Profit from referrals | | | | 1980 | | | | Increases 10% per year |
| 10 | Total Profit | | | | | | | | |
| 11 | Present Value | | | | | | | | Discounting factor 15% |
| 12 | Net Present Value | | | | | | | | |
| 13 | | | | | | | | | |
| 14 | | | | | | | | | |
| 15 | | | | | | | | | |
| 16 | | | | | | | | | |
| 17 | | | | | | | | | |



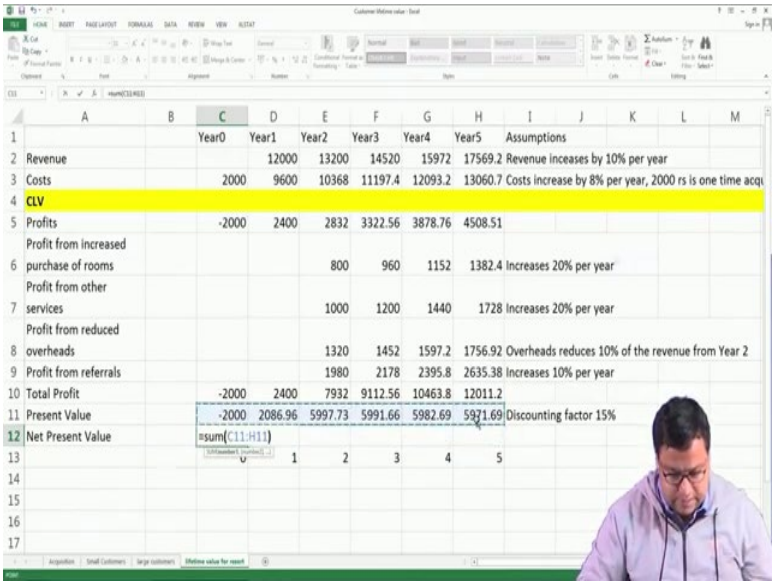

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | | Year0 | Year1 | Year2 | Year3 | Year4 | Year5 | Assumptions |
| 2 | Revenue | | | 12000 | 13200 | 14520 | 15972 | 17569.2 | Revenue inceases by 10% per year |
| 3 | Costs | | 2000 | 9600 | 10368 | 11197.4 | 12093.2 | 13060.7 | Costs increase by 8% per year, 2000 rs is one time acqu |
| 4 | CLV | | | | | | | | |
| 5 | Profits | | -2000 | 2400 | 2832 | 3322.56 | 3878.76 | 4508.51 | |
| 6 | Profit from increased purchase of rooms | | | | 800 | 960 | 1152 | 1382.4 | Increases 20% per year |
| 7 | Profit from other services | | | | 1000 | 1200 | 1440 | 1728 | Increases 20% per year |
| 8 | Profit from reduced overheads | | | | 1320 | 1452 | 1597.2 | 1756.92 | Overheads reduces 10% of the revenue from Year 2 |
| 9 | Profit from referrals | | | | 1980 | =E9*1.1 | | | Increases 10% per year |
| 10 | Total Profit | | | | | | | | |
| 11 | Present Value | | | | | | | | Discounting factor 15% |
| 12 | Net Present Value | | | | | | | | |
| 13 | | | | | | | | | |
| 14 | | | | | | | | | |
| 15 | | | | | | | | | |
| 16 | | | | | | | | | |
| 17 | | | | | | | | | |



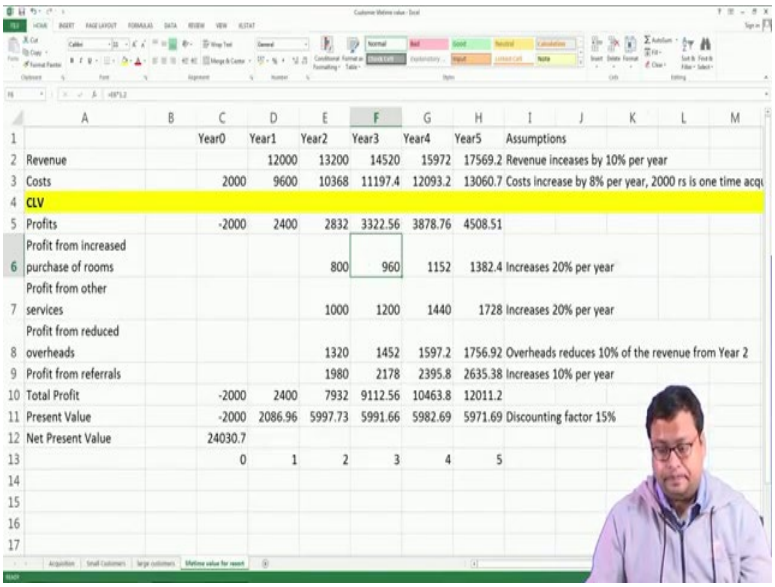
| | A | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | Year0 | Year1 | Year2 | Year3 | Year4 | Year5 | Assumptions | | | | |
| 2 | Revenue | | | 12000 | 13200 | 14520 | 15972 | 17569.2 | Revenue inceases by 10% per year | | | | |
| 3 | Costs | | 2000 | 9600 | 10368 | 11197.4 | 12093.2 | 13060.7 | Costs increase by 8% per year, 2000 rs is one time acq | | | | |
| 4 | CLV | | | | | | | | | | | | |
| 5 | Profits | | -2000 | 2400 | 2832 | 3322.56 | 3878.76 | 4508.51 | | | | | |
| 6 | Profit from increased purchase of rooms | | | | 800 | 960 | 1152 | 1382.4 | Increases 20% per year | | | | |
| 7 | Profit from other services | | | | 1000 | 1200 | 1440 | 1728 | Increases 20% per year | | | | |
| 8 | Profit from reduced overheads | | | | 1320 | 1452 | 1597.2 | 1756.92 | Overheads reduces 10% of the revenue from Year 2 | | | | |
| 9 | Profit from referrals | | | | 1980 | 2178 | 2395.8 | 2635.38 | Increases 10% per year | | | | |
| 10 | Total Profit | | =sum(C5:C9) | | | | | | | | | | |
| 11 | Present Value | | | | | | | | Discounting factor 15% | | | | |
| 12 | Net Present Value | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |



| | A | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | Year0 | Year1 | Year2 | Year3 | Year4 | Year5 | Assumptions | | | | |
| 2 | Revenue | | | 12000 | 13200 | 14520 | 15972 | 17569.2 | Revenue inceases by 10% per year | | | | |
| 3 | Costs | | 2000 | 9600 | 10368 | 11197.4 | 12093.2 | 13060.7 | Costs increase by 8% per year, 2000 rs is one time acq | | | | |
| 4 | CLV | | | | | | | | | | | | |
| 5 | Profits | | -2000 | 2400 | 2832 | 3322.56 | 3878.76 | 4508.51 | | | | | |
| 6 | Profit from increased purchase of rooms | | | | 800 | 960 | 1152 | 1382.4 | Increases 20% per year | | | | |
| 7 | Profit from other services | | | | 1000 | 1200 | 1440 | 1728 | Increases 20% per year | | | | |
| 8 | Profit from reduced overheads | | | | 1320 | 1452 | 1597.2 | 1756.92 | Overheads reduces 10% of the revenue from Year 2 | | | | |
| 9 | Profit from referrals | | | | 1980 | 2178 | 2395.8 | 2635.38 | Increases 10% per year | | | | |
| 10 | Total Profit | | -2000 | 2400 | 7932 | 9112.56 | 10463.8 | 12011.2 | | | | | |
| 11 | Present Value | | =C10/1.15^C13 | | | | | | Discounting factor 15% | | | | |
| 12 | Net Present Value | | | | | | | | | | | | |
| 13 | | | 0 | 1 | 2 | 3 | 4 | 5 | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |



| | A | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | Year0 | Year1 | Year2 | Year3 | Year4 | Year5 | Assumptions | | | | |
| 2 | Revenue | | | 12000 | 13200 | 14520 | 15972 | 17569.2 | Revenue inceases by 10% per year | | | | |
| 3 | Costs | | 2000 | 9600 | 10368 | 11197.4 | 12093.2 | 13060.7 | Costs increase by 8% per year, 2000 rs is one time acq | | | | |
| 4 | CLV | | | | | | | | | | | | |
| 5 | Profits | | -2000 | 2400 | 2832 | 3322.56 | 3878.76 | 4508.51 | | | | | |
| 6 | Profit from increased purchase of rooms | | | | 800 | 960 | 1152 | 1382.4 | Increases 20% per year | | | | |
| 7 | Profit from other services | | | | 1000 | 1200 | 1440 | 1728 | Increases 20% per year | | | | |
| 8 | Profit from reduced overheads | | | | 1320 | 1452 | 1597.2 | 1756.92 | Overheads reduces 10% of the revenue from Year 2 | | | | |
| 9 | Profit from referrals | | | | 1980 | 2178 | 2395.8 | 2635.38 | Increases 10% per year | | | | |
| 10 | Total Profit | | -2000 | 2400 | 7932 | 9112.56 | 10463.8 | 12011.2 | | | | | |
| 11 | Present Value | | -2000 | 2086.96 | 5997.73 | 5991.66 | 5982.69 | 5971.69 | Discounting factor 15% | | | | |
| 12 | Net Present Value | | =sum(C11:H11) | | | | | | | | | | |
| 13 | | | 0 | 1 | 2 | 3 | 4 | 5 | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |



| | | Year0 | Year1 | Year2 | Year3 | Year4 | Year5 | Assumptions |
|---|---|---|---|---|---|---|---|---|
| 2 | Revenue | | 12000 | 13200 | 14520 | 15972 | 17569.2 | Revenue inceases by 10% per year |
| 3 | Costs | 2000 | 9600 | 10368 | 11197.4 | 12093.2 | 13060.7 | Costs increase by 8% per year, 2000 rs is one time acq |
| 4 | CLV | | | | | | | |
| 5 | Profits | -2000 | 2400 | 2832 | 3322.56 | 3878.76 | 4508.51 | |
| 6 | Profit from increased purchase of rooms | | | 800 | 960 | 1152 | 1382.4 | Increases 20% per year |
| 7 | Profit from other services | | | 1000 | 1200 | 1440 | 1728 | Increases 20% per year |
| 8 | Profit from reduced overheads | | | 1320 | 1452 | 1597.2 | 1756.92 | Overheads reduces 10% of the revenue from Year 2 |
| 9 | Profit from referrals | | | 1980 | 2178 | 2395.8 | 2635.38 | Increases 10% per year |
| 10 | Total Profit | -2000 | 2400 | 7932 | 9112.56 | 10463.8 | 12011.2 | |
| 11 | Present Value | -2000 | 2086.96 | 5997.73 | 5991.66 | 5982.69 | 5971.69 | Discounting factor 15% |
| 12 | Net Present Value | 24030.7 | | | | | | |
| 13 | | 0 | 1 | 2 | 3 | 4 | 5 | |

Then B to C case, let us give an example, as a resort, let us say. So, again from the past value, it has been seen that initially in the first year, you have to make a 2000 rupees cost you have to pay you will incur that much of acquisition cost for each customer.

But the customer stays two days if you had a five star hotel two days or four star hotel even, 2 days he stays, the revenue you get is 12,000 dollars, 12000 rupees and that increases at a 10 percent rate every year let us say it came. The cost is 9600 rupees in the first year and the cost increase 8 percent every year. So, that makes sense.

So, then if that is the case, then how much will be? So, this is like point 1.1 and so on and this will be nothing but this into 1.08 and so on. So, what is the customer lifetime value is something that can be calculated. So, how much is the profit? The profit is nothing but this minus this and first year it is a loss and second year onwards there is some profit that I am getting.

Then there are other revenue sources, profit from increased purchase of room. So, if I in the room I will purchase more and more stuff in room purchases, let us say you order some food you order some these and that, you take more services in the room. So, then it is 800 rupees in the second year first year you do not take it has been seen and a second year onwards this increase at a rate of 1.2.

So, this is your in room services that you take. Other services like beverage spa, bla bla bla. So, that is this into again 1.2. So, these values will come these assumptions that I took will come from your CRM data that you have. So, how reduced from profits from reduced overhead. So, overhead cost also comes down, if you know that the same customer will come

and if you fix the room then the overhead cost also comes up. So, overhead reduces as a 10 percent rate from the revenue.

So, it is basically 10 percent of the revenue. So, that much overhead costs are coming down and then profit from referrals is 1980 means you are referring to other customers or they are also buying and this is also increasing at a rate of 1.1. Because those guys are also referring somebody, they are also referring somebody and so on.

So, it is a chain effect which is going on. So, what is the total profit there? So, this is the total profit is nothing, but the sum of all of these things. So, first year you were still making a loss, second year you are only getting from your own purchases. But third year onward or year two onward basically in this case, you are getting purchases from profits from multiple sources.

But see I am taking 15 percent discounting factor for a hotel industry, you have to check how much is the profitability that could be a discounting factor. So, in the first year, the discounting factor means the thing that we will multiply with it is basically, this is nothing but this divided by, so let me put it in this way, this is 0, this is 1, this is 2 and if I just drag it. So, 1, 2, 3, 4, 5, so this one will be this divided by 1.15 to the power 0 and if I just drag that will be the various money. So, 1.15 to the power 1, 1.15 to the power 2 just one minute, 1.15 to the power 3, 1.15 to the power 4 and 1.15 to the power 5.

So, that is how this is the total discounting factor that I am getting and then if that is the discounting factor, then the net present value of this person is nothing but the sum of all this. This is the net present value of this person for each customer I am getting that if I acquired this customer with the cost of 2000 rupees today, the net money that I will gain over 5 years is 24,000, which is good enough which is double of whatever is your, probably 10 times of whatever is your income in the first year.

So, this is something this kind of money you can make when you keep relationship with the customer properly. So, that is why customer relationship management is a very important factor of the business. So, that is what we have discussed. I will see you in the next video. Thank you very much.