Financial Accounting
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Lecture – 112
8.6 Tutorial - Break Even Point

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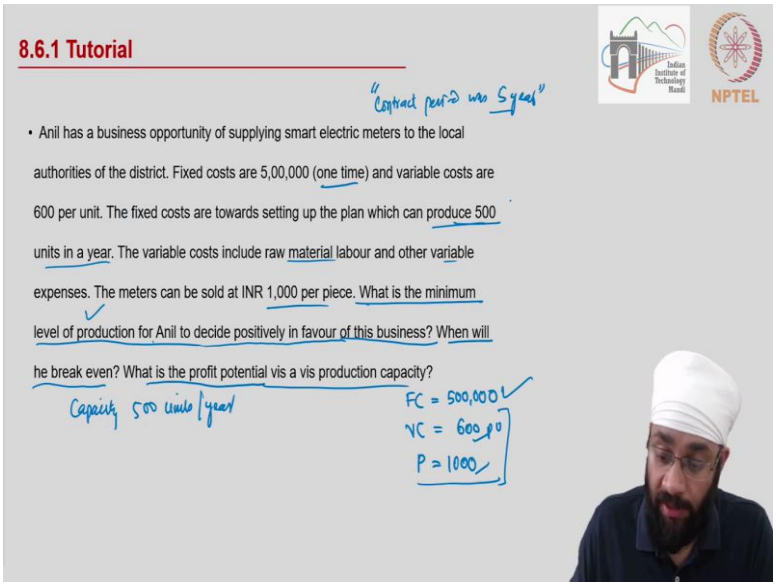

This is a tutorial. We are going to take a look at this problem and solve it. In the process, we reiterate some of the learnings and some new ideas may also emerge. So, take a minute, read through the question. You can pause the video. I am going to bring in the specifics, the details at one place.

So, the fixed cost is 500,000 which is one time. The variable cost per unit is 600 per unit. The fixed cost towards setting up the plant which produces the capacity is given to you. Let me write it here: capacity is 500 units per year. The variable cost includes raw material, contents, and you have a price which is 1000 per piece.

So, the first question is what is the minimum level of production for Anil to decide positively in favour of this business? What does it mean? It means the person should be able to say, I am taking this opportunity up. When will that happen? When you are in profit. So, you want to know when it is going to be in profit. What is the minimum level of production?

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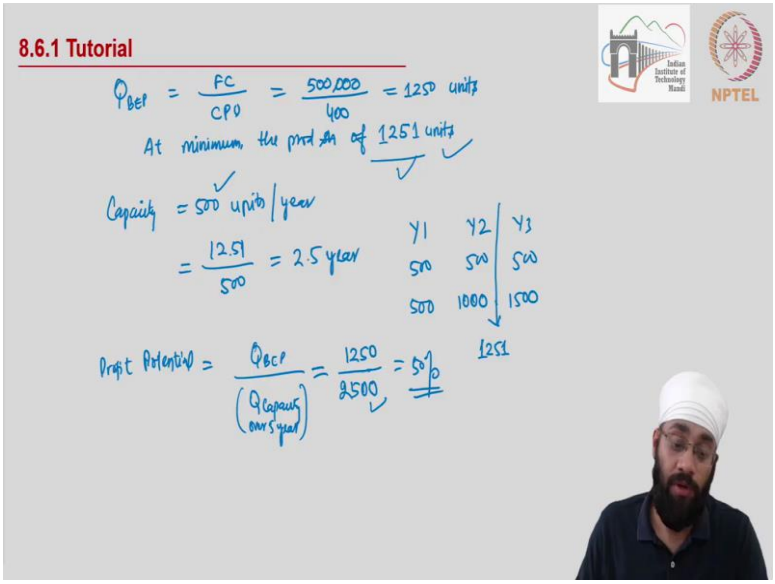

So, we know that, of course, we have to figure out the break even point. The quantity of break even point is equal to fixed cost divided by contribution per unit. The fixed cost is given to be 500,000, and divide this by the contribution per unit. So, the contribution per unit comes out to be 1,000 minus 600, so 400 is the contribution per unit. So, this gives you how much? 1,250. So, you have to produce 1,250 units in order to break even.

The first question was what is the minimum level of production for Anil to decide positively in favour of this business? So, at minimum the production of 1251 units, because at 1,250 units it is no profit no loss. Why would we start a business for no profit no loss?

So, mathematically there has to be at least a positive number for you to decide. So, 1251 units would mean there is some small amount of profit. However, would you decide to start the business, will you take up the opportunity at 1251? Possibly not. But this is the minimum that you would expect and then you negotiate at the top of it. So, this is the answer to the first question.

The second is, when will he break even? So, what is the time when you can expect him to break even? So, if it is about time then, we have to look in terms of months or years. The production capacity is 500 units a year. The capacity is 500 units per year. Now, in order to break even you have to produce 1251 units which means that you will have to go on for more than 1 year; so, how many more is what we are going to figure out now.

So, if you look at time length this is year 1, year 2, so 500, 500 and year 3 also 500. And if you look at cumulative numbers then you will have 500 done in the first year, you will have 1,000 done in the second year, and 1,500 done at the end of third year. So, somewhere in between here you will clock 1,251 units and that is when you will start making profit.

So, clearly it is a minimum of 2 years, but less than 3 years. If you want to figure out exactly how much time then you just do the numbers here which come out to be 2 point something of course. So, this is 25; 2.5 years. So, approximately 2 years and 6 months is the time that Anil would need to break even, to reach at this break even level because the production capacity is limited.

The third question is, what is the profit potential vis-a-vis production capacity? So, production capacity is 500 units. Now, profit potential is actually something very subjective, but a lot of subjectivity goes into decision making as well.

Now, I want to take the quantity of break even point and I want to take the quantity at the maximum capacity and I want to say at what percentage capacity. So, 1,250 is my break even capacity, break even level and the total capacity is 500 per year. So, 500 per year meaning how long can you go on that is also another question.

So, let us add another piece of small information here. Let us say this contract period; the contract period was 5 years. You have this deal for 5 years. So, if it is for 5 years, then you can produce 500 units every year, so that is 2500 maximum units that you have. So, this is a capacity over 5 year. This is the total sales that business would offer, this opportunity will offer to you. So, if this is the total capacity, total profit potential then you are operating at 50 percent.

So, the remaining 50 percent units after 2 and a half years, remaining 2 and a half years you will be in green which means you will be making profit. So, is this a good profit potential or bad profit potential? You could compare it with what else you would do if you do not take up this opportunity.

So, again, that makes it more subjective. But as I said subjectivity is also involved in such decisions. But how do you use the capacity, the quantity of break even in this analysis is what I wanted to convey to you in this tutorial.

I will see you in the next video.