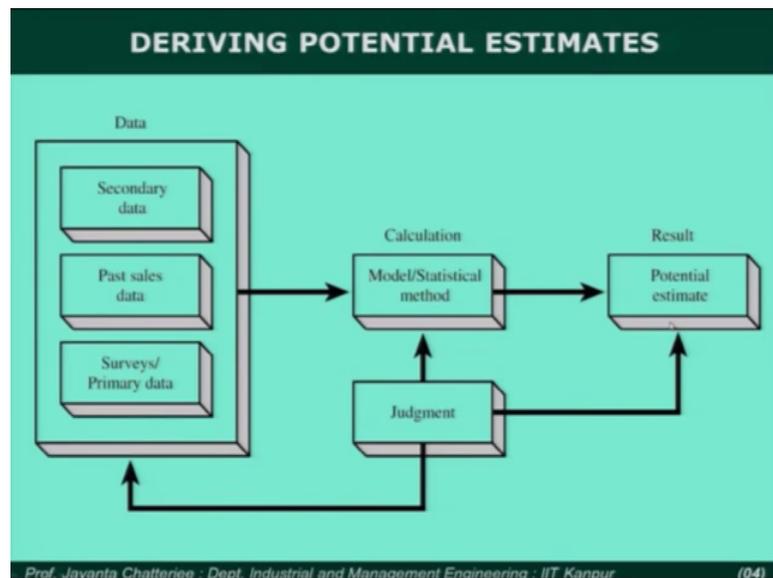


**Management of New Products and Services (MNPS)**  
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**Lecture – 13**  
**NPNSM- Estimating Marketing and Sales Potential**

So this middle block past sales data will be absent in that case.

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And we will rely on secondary data and survey of primary data. This survey often for new product takes you know as we have discussed this.

How you spend time with the customer; how you use ethnographic methods and how you have different kinds of surveys based on focus groups? Question your survey and so on. So, this is some kind of primary data that you generate to do some statistical analysis and come up to some kind of an estimate.

The secondary data will be coming from published material and so on. We will just now show you that, but a point I wanted to make here that sometimes a product may be new to the company.

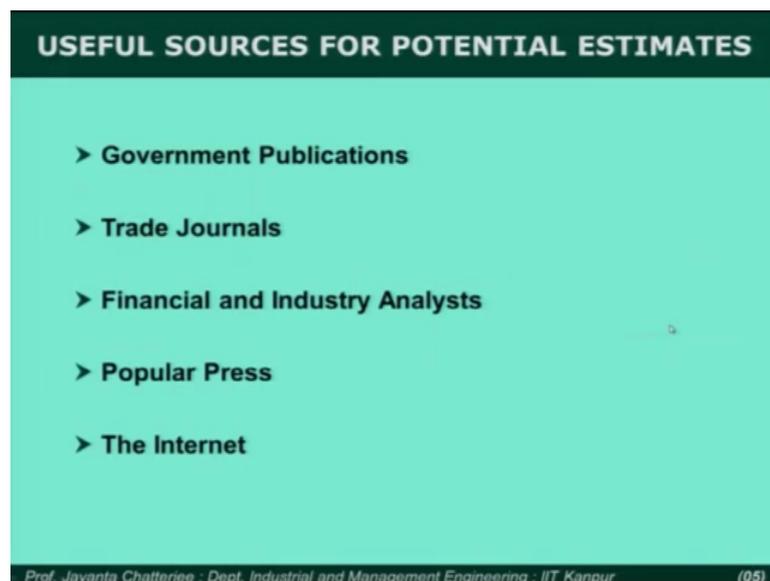
But not new to the world; which means some sales record will be available or can be some guesstimates can be made of similar products sold by competitors or products

which are almost associated or products that are going to be substituted by your better product.

So, that sales data can also be used and these inputs will then be then analyzed through statistical methods and some kind of managerial judgment. This is very very important because just blindly relying on statistical modeling and analysis can often lead to some very funny results.

So, managerial judgment is extremely important to temper and to select and to filter your processes that are coming out from the mathematical or statistical modeling; not the other way round. Sometimes people feel that the computer is more reliable than the human being which often will actually lead you to a very bad situation. So, that is how you have arrived at the potential estimate.

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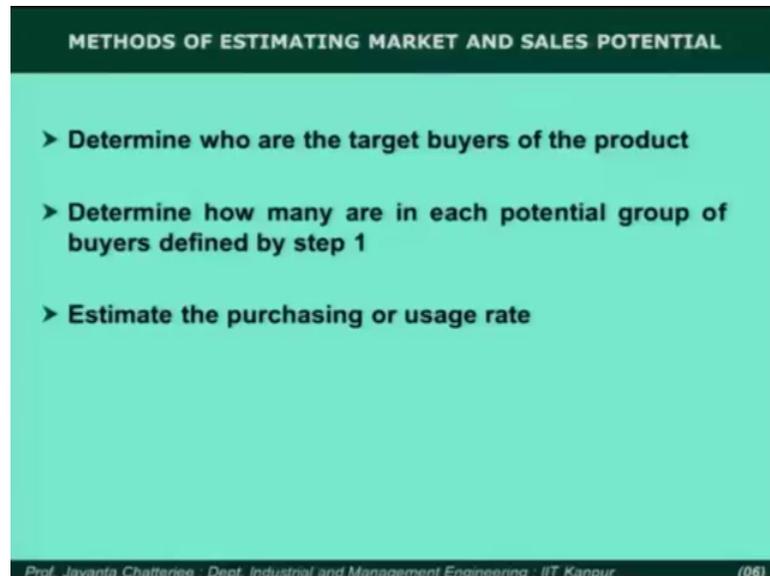


I will briefly discuss some of the statistical techniques that we use. And then of course, the details can be learnt by you in some other kind of modules which are related to statistical techniques and analysis and so on. And these days of course, we can analyze a very large number of data sets. So, that is called a big data or analytics with big data. All that are you can take up in some other courses that are also available from NPTEL.

So, useful sources for secondary data are Government Publications, Trade Journals, Financial and Industry Analysis, Popular Press, The Internet. And you can also generate

some very good data by attending the trade related or that particular domain related conferences exhibitions and so on.

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So, the method remains more or less the same; whether you go to an exhibition, whether you attend a conference, whether you are doing some survey you have to determine who are the target buyers of the product and of course, determine how many are in each potential group of buyers defined in the step one that is the target buyer. So, as we said that you have to very sharply defined your initial foray.

So, therefore, you have to you may decide of a certain that in eastern region you are going to launch a product that is one kind of segmentation as we discussed geographical. Within that you can do some kind of psychographic or profiling for selection of your segment. That also a technique we have discussed.

And then, you can actually have different buckets and you can say ok, I will start with this particular very finely defined segment. Then I will go to the next segment. So, you can have kind of a roadmap, how you are going to tackle the different sub segments within your first target segment.

And important to know is also the rate at which; that means, the frequency you a purchase. Because finally, your estimate will be the number of buyers into the frequency

of their buying that will give you a time based estimate that how many you can sell within the first 6 months, first 1 year.

Ah Of course, the challenge of identifying the first 100 customers will always remain and in many products that is something important because once that flow happens as we will see in a next session that that determination finding them. But there are some scientific approaches to that how you find your first 100 customers depending on the kind of product that you are launching those we will discuss in the subsequent session.

But the third point here, that you have to determine not only the number of people who will buy, also their usage rate.

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Let us apply these principles to an example say a Electric Mosquito Repellent right. So, you need to find how many your initial estimate? Now you have to use some amount of common sense and available data.

So, for example, obviously, this is an Electric Mosquito Repellent you will only therefore, look at those geographical areas where, electricity is available. And then, particularly Mosquito Repellents are used at night. So, you have to see the whether night supplies are available; because in some distant areas you know priority is given to agriculture.

So, normally electricity is available during at certain time early in the morning, but it may not be available in the evening. In the evening on the other hand, you may have some other alternate sources like solar power etcetera.

But even then, you must even that is for Mosquito Repellents. So, you have to see where it is available. Then, as I said maybe you start with say North India and within North India.

Suppose, your factory is located in Kanpur and you are therefore, you will start because it is near your factory, you will have access to the dealers etcetera. So, you are starting in the North India; in the Kanpur, Luck now, Allahabad, Varanasi in that this particular area. Even there you have to decide where will be your first foray. So, maybe you say I will start with Luck now.

Then, electric mosquito repellants the usage will depend on the population. But, obviously, there is these people are already having some mosquito repellents right. So therefore, you have to make an estimate of who are the likely new buyers? Because people who are already having, people do not buy a mosquito repellent every day. They buy cartridges regularly, but they may not buy the machine.

So, if you are creating a forecast, you might like to create a forecast for your machine as well as for your cartridge, if you are creating a cartridge which will fit into all other types of machines.

Then, of course, you have to see what are the channels to the market; how many dealers you can convince to carry your product and how many people you can reach directly to for them to try it out and see that?.

Suppose, you have created a product which is horrible and which does not give out any toxic fume and it is very good for or not good at least safe for humans to breathe in And therefore, you are trying to make some estimate based on these factors.

This is your product is better, but to convince people that how better it is, you will have to therefore, reach out. And so, you make some estimate that how many people you can reach out to and based on that.

So, I with this brief introduction; I leave this particular problem to your further thinking and imagination and application of the concepts that we have already discussed. So, why not you think about a mosquito repellent? Suppose, you have created a mosquito repellent which is superior to the current solutions available in the market.

It is a some kind of a green product which actually reduces less electricity or which actually is that can be used in with a very low availability of power. Say for example, from solar it does not draw very much from the battery. So, it can coexist with the lights and other things essential supplies that are taken in areas where electricity is scarce.

And you want to now decide how many you can sell in the first 6 months. So, focus on your own area. So, that you have you can think about, you can go out, you can look at shops, you can talk to people and make an estimate and write a 1 page; give you a rational of the numbers that you feel can be sold in the first 1 year, first, first 2nd - 3rd year or at least in the first 2 years you try to make an estimate.

Alternatively, so, this is like your product is similar to the existing products except that it is a safe product, safer product compared to products that are now available in the market which are mostly chemical based.

And many people are now reacting to those products because they feel that the fumes no doubt, they drive away mosquitoes or make the mosquitoes less virulent; but also the fume is not good for human beings.

Now, suppose there is at and as you know, these the current mosquito, they are called Repellent that means, they are repelled mosquitoes. The mosquitoes go away, but the soon as you switch it off or your liquid is finished or your coil has burnt out; then, you know the mosquitoes can come in.

Now, suppose you have created this may be a better exercise for you. Suppose, you have created a mosquito attractor so, the mosquitoes get attracted and they die within your machine. It is the same size as the current mosquito repellants, but it attracts mosquitoes and the mosquitoes get into the system and by some means forget about how it will be done.

There are already people who are developing such products and you can even check it out on some of these web based e-commerce sites like Flip kart or Amazon and so on. You will see there are new types of this mosquito absorbers which are coming.

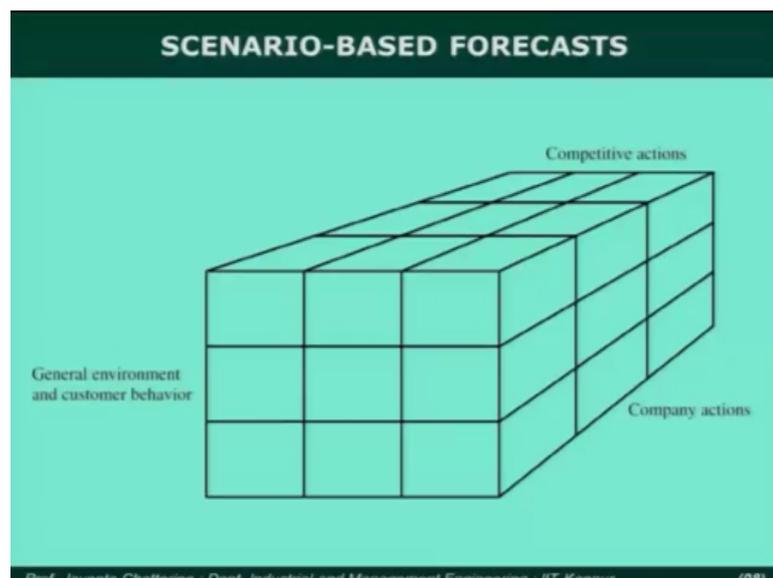
So, it is a new product with a new concept right and you think and apply your mind and go out and talk to people and make an estimate, how many you think you can sell in your area. And you can choose a very small area. You can choose a part of your town; you can choose some hollows where you can walk around, talk to shops and try to make an estimate.

So, I want you to engage in this because if you do once it does not matter how good it is, but the process itself will throw up some questions which you can then post in the forum. And then, we can discuss and that will give you some good result.

There is no better way to understand a new topic rather than better than engaging. Engage, go out, go out of the office, go out of the building, go out of your home and interact in the marketplace and that is how you will really understand.

So, in reality the way actually we you can see therefore, you will understand when you get into this game.

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And you try the first exercise that we just discussed; you will see that the your forecast will depend on company actions. That means, what are the features of your products? How it is better than the available existing products? What is the alternative?.

And because people will just not buy if it is a better alternative because you think it is a better alternative. People will buy only when you are able to convince them and we will discuss in another session that a new product for better appeal and for better acceptability, what features it should have for you we what we say is higher rate of diffusion or acceptance, we will discuss that.

But when you engage, you will understand that if you have this mosquito absorber rather than repellent; what are the company actions that are necessary? What features will make it for attractive you will in the process?.

But, you are only focusing in the earlier exercise which we discussed; just to estimate some number from your own area, from your locality. But, in the process you will understand that you have to understand competitors and you have to understand your own features and benefits coming out of your products.

And what kind of preparation, what rate of supply, what kind of inventory you need to build up? And all those are coming under company actions. I am now only showing you the headings or the classes of inputs that are necessary to create finally, a scenario based forecast.

So, but, the details under each competitive analysis, company analysis and general environment and consumer behavior related analysis; these are the 3 dimensions which need to be integrated to create a good forecast. And details of each of these some we have discussed and some more we will be discussing over the coming a day's.

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### JUDGMENT-BASED FORECASTING METHODS

- Naïve extrapolation
- Sales force composite
- Jury of expert opinion
- Delphi method
- Electronic Markets

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These are some typical forecasting methods. So, if you actually the read any textbook on sales or if you just search on Google you will find excellent Google, Wikipedia all of these will give excellent very lucid, easy to understand and you can also find lot of simple and attractive lectures on YouTube on say Naive extrapolation, Sales force composite, expert opinion, Delphi method, Electronic Market.

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### SUMMARY OF FORECASTING METHODS

Dimensions	1. Time span	2. Urgency	3. Quantitative skills required	4. Empirical relationships required	5. Data characteristics	6. Accuracy	
Judgment	Naïve Extrapolation	Short/medium term	High/ Surpassand	Minimal	Very low	Limited	
	Sales Force	Short/medium term	Fast Surpassand	Minimal	Low	Not necessary	Highly variable
	Executive Opinion	Short/medium term	Depends on whether inside or outside company	Minimal	Could be high if outside experts used	Not necessary	Price of some methods, better if a group
Costing	Delphi	Medium/long	Needs time	Minimal	Could get high	Not necessary	Best under dynamic conditions
	Market Testing	Medium	Needs time	Moderate level	High	Not necessary	Good for price adjustments
	Market Survey	Medium	Needs time	Yes	High	Not necessary	Limited
Time Series	Moving Average	Short/medium	Fast Surpassand	Minimal	Low	Necessary	Good only in stable environment
	Exponential Smoothing	Short/medium	Fast Surpassand	Minimal	Low	Necessary	Good in short run
	Extrapolation	Short/medium/long	Fast Surpassand	Basic skills	Low	Necessary	Good for trends, stable environments
Association/Causal	Correlation	Short/medium/long	Fast Surpassand	Basic skills	Moderate	Necessary	Highly variable
	Regression	Short/medium/long	Moderately fast	Basic skills	Moderate/High	Necessary	Can be accurate if explained variance is high
	Leading Indicators	Short/medium/long	Moderately fast	Basic skills	Moderate	Necessary	Moderately accurate at best
Econometric	Short/medium/long	Needs time	High level	High	Necessary	Best in stable environment	

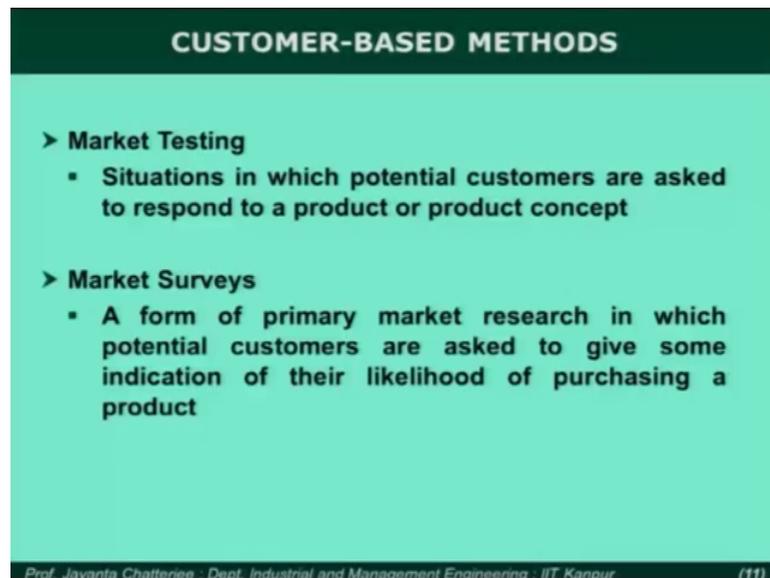
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All of these you will find. This is a summary I am not spending too much time on. But the main point is that that upper portion is what is important for you at this moment. There are many detailed methods which are given below.

Some of those I will show you but to explain. But otherwise, this is just a chart some of you who want to get into the nitty-gritty's of this part of it. Then, you can actually this will help you to search the for the related information and if you and perhaps, you know forecasting by itself sales forecasting is a full length topic.

It will take at least 10 - 15 hours to get into the nitty-gritty's. But this is kind of you can, it can you can use it as a guidance chart for tabulating what you need to know right ok.

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But some I am going to discuss. So, one is this Customer - Based Method. Customer - Based Method means you have to do some Market Testing. So, situations in which potential customers are asked to respond to a product or product concept.

We discussed that there this focus group. So, you can you can either ask people individually or you can ask people in a group that likely buyers in a group. So, like the mosquito killer or mosquito absorber that we were discussing instead of a mosquito repellent.

Now, you can ask 100 persons look, if I come up with this product or not do not say come up I say here is you know, I have a new product and this is going to do this in the

instead of mosquito repelling it is going to lure the customers into the system and the mosquitoes are going to die.

So, that is a much better method than repelling because as soon as your system is switched off, the mosquitoes come back and with this logic you talk to 100 persons and suppose 20 of them say that ye I will be quite interested to buy such a product. So, that gives you an idea that 20 percent people are perhaps I can think.

So, if I in my area, they are likely there will be there is a population of say 600000. 600000 of people live in that popular area and suppose, they live in 10000 households; I am just taking some arbitrary numbers.

So, this 100000 households might need their for each household, if they need say 2 mosquito repellents or absorbers because they have 2 rooms where people sleep. Then, you know, you have a potential of 200000.

Now, you can again ask 100 people and you will find that maybe 40 people they already have some kind of a system. So, you initially you might ignore that because there you will have to compete to the place which is tougher.

But people who do not have and will be buying; they will be a better more attractive customers because easier to tackle. So, they are actually you make therefore, maybe 40 percent. So, 40000 is the requirement. Then, you saw that 20 percent people when you talk to them said yes, I will be interested.

So, that means, 20 percent of that 40000 is your initial number. This is a rough way actually; actually there is a good model for this which is called ATAR.

That means, your if total number is 100000 right. First out of that you will say how many people are aware of your system that itself will immediately bring it to maybe you can reach out in the initial phase to maybe 50 percent of the population.

So, which means aware number will become 50000 and then, maybe you have demonstrated your product and etcetera. So, maybe 20 percent people have of that 50000 would have actually tested the product, have seen some trial of the product that how good your product is in attracting mosquitoes and killing them.

So, 20 percent of 50000. So, that is about say 10000 that becomes your next number. And then, you have to look at that how many of them you can reach through shops and or direct marketing or whatever approach, I am not going to get into at this stage the discussion of what marketing method is best suited for what kind of product at what stage.

This we have discussed in one of our earlier courses marketing 1 and marketing 2. There actually we have gone into far more details about the methods of these creating your channels to market.

Ah Briefly we will discuss that in the maybe next week, but more detail you can access to that that particular course, our course marketing 2. There you will get a much better idea. But here, suppose, as we said that you as I have said 50 percent 50000 people are aware of the 100000 of your product; out of them 20 percent; so, 10000 people you have been able to show some trial or they have actually seen some a demonstration.

And then, you see this 10000, I have 3 dealers who have carried agreed to carry my product and. So, and plus I will do some direct selling, door to door selling and you say ok, maybe I will be able to initially definitely reach 25 percent. So that means, if your number then, next number comes to 2500.

So, if you are going to make some estimate of how many numbers you are going to produce initially. So, you can use this as a rough cut number and you can say ok, if I if since my product is good and; obviously, if you do not have faith in your product; then nobody else will have.

So, if you have faith in product; then, you say at least maybe 20 percent people from this group will persuade some other people to buy this product because my product is so much better. So, you see that 20 percent of that 2500 to, another 500 you can add. So, your initial forecast then becomes 3000.

So, listen to my logic as I said and this model is often called ATAR. That means, first is A stand for Awareness; second, T stands for Trial; third, A stands for Availability and last one is Repeat buyer or Referral buying.

So, this each stage the number comes down by a discounting factor which is the percentage of people. So, first is the total population is  $x$  multiplied by a which is a fraction of  $x$ ; that means, say as we said say 50 percent people are aware of the 100000. So, that is 0.5.

Then, next is  $T$  that means people who have taken a Trial. So, we say that is a 20 percent. So, that is 0.2. Then, we said ok, out of that people you can actually 25 percent will be you can reach through various channels. So, that is 0.25 and then multiplied by maybe 0.2, the people who will do referral buying that is a that is to be added.

So, first ATA by multiplying you can get some kind of an initial estimate out of the total 100000 that is the available market. This is also yeah your process for calculating the tam 1 and tam 2 that we discussed earlier.

So, tam 1 is total addressed market and tam 2 is the total available market. So, avail total available market here is 100000 and total addressed market is this number that you will calculate by multiplying  $A$   $T$  and  $A$ .

And Market Survey that actually is the more detailed process of this Market Testing that is a form of going out asking people, focus groups and all those that are the processed by which you will arrive at the likelihood of purchasing a product by intend targeted buyers.

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**TIME-SERIES FORECASTING METHODS**

- **Moving Averages**
- **Exponential Smoothing**
- **Regression Analysis**

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That kind of gives you an overall idea and now, I am going to discuss in the next session some simple statistical techniques of creating the most used method which is called the Time Series Forecasting Method so, that we will take up in the next session.

Thank you.