

International Business
Prof. J. K. Nayak
Department of Management Studies
Indian Institute of Technology, Roorkee

Lecture – 55
Estimating Market Demand, Pitfalls in Research

Welcome friends. Welcome to the class of International Business. So, in the last lecture we were discussing about the role of marketing research in international business. When you talk about marketing research or research for that international business it becomes very important because, the marketer today he is trying to get into a new place, new country altogether. And the local knowledge is very limited right.

So, in such a condition it becomes very imperative, it becomes imperative for the marketer or the you know the company to understand the local culture, the dialect, the tradition, the habits, the income condition of the people, the spending habits everything right.

So, we discussed that it is very important that there need to be you know research done on the prize; how to promote the product, what should be the distribution, the most effective distribution method that should be adopted, how should the company you know segment the market and, how should the what kind of products they should manufacture for the market. It is not that any product would be selling in the market, because the local people might not like a particular design which is all, but may be very successful in another market.

So, it is not necessary, that is very important and when we discussed about the product research we also discussed that it is not only about design, the product has to be the concept has to be properly developed and tested; and then it has to be properly you know test marketed. So, that you before you go into commercialization, the firm should not make a mistake they should not get into a you know trouble because, once it happens that you get into commercialization and you launch it, then it is very difficult to back out.

Now, when you get into a new market, how do you estimate the demand? The point is this is a very important point, how do you estimate the market demand? Because estimating the demand if one does not estimate the demand properly, then it is it

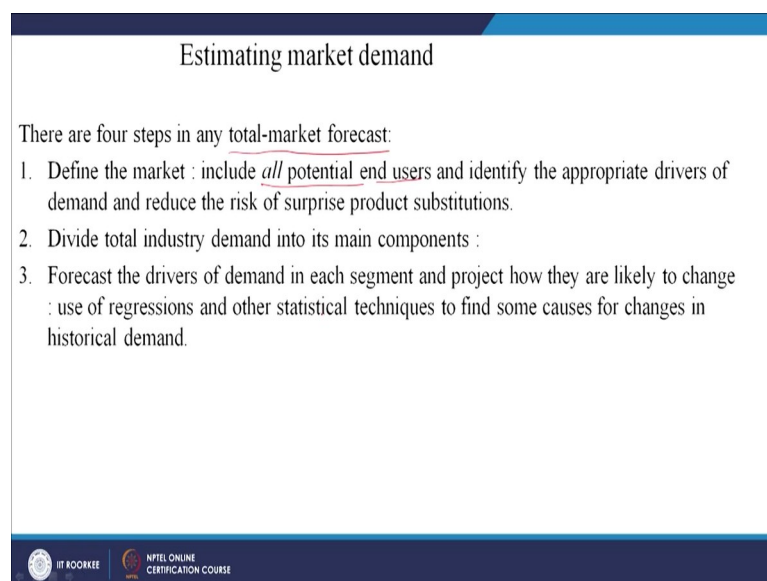
becomes a real challenge right. So, many companies for that they have become you know obsolete from the market just because they could not estimate the demand properly right.

So, there have been very successful cases in the past, where companies they did not manage their inventories well, they did not forecast the you know markets well and when suppose for example, when the tire industry in that among the tire when radial tires came into place into the market; there were some of the then existing players, who were very successful, but they just went out of the market they became bust and companies like Michelin became very very successful, because they could adjust to the new changes the needs of the market.

So, companies who are continuously adjusting and adapting to the market they have been doing well and they have been always successful. So, be it national or international home or the you know outside market and is especially important in the outside market because, demand forecasting or estimation becomes little tougher because of a lack of local knowledge.

So, when you do a estimating when you go for an estimation of the market demand, how does the marketer go for it, right?

(Refer Slide Time: 03:42)



Estimating market demand

There are four steps in any total-market forecast:

1. Define the market : include all potential end users and identify the appropriate drivers of demand and reduce the risk of surprise product substitutions.
2. Divide total industry demand into its main components :
3. Forecast the drivers of demand in each segment and project how they are likely to change : use of regressions and other statistical techniques to find some causes for changes in historical demand.

IT ROORKEE | NPTEL ONLINE CERTIFICATION COURSE

So, to when you talk about market forecast right. So, as I said it is very very important that the you know firms understand it, and it is especially important in the international business because you are getting into new places, new countries where local knowledge is not there. So, there are four steps. The first step it says is define the market right.

So, what it is saying? What does define the market mean? Define the market means include all potential end users and identify the appropriate drivers of demand and reduce the risk of surprise product substitutions. Now, what do you mean by that? When you define the market?

So, a manufacturer suppose for example, you are a manufacturer of somebody is a manufacturer of let us say calculators, now the question is with time calculator has been very you know slowly the demand for calculators went out, because today mobiles have got everything in them for example, the calendars just imagine somebody was making calendars.

Now, what is the use of calendars? Even tomorrow what would happen to the watch industry? Will it get a big you know jolt from the mobile industry, possible because the mobile industry is the mobile watches to the mobiles are giving you time, location everything they are giving you perfectly.

So, what will happen? Will it be a trouble? So, how do you define the market? First include all the potential end users who will maybe buy a product and then see [FL] what would be the impact? If a new product substitution comes into place; if tomorrow let us say even mobiles are substituted with somebody something else then what would happen to the mobile industry?

So, all this is very important when you when somebody gets into a demand estimation. So, demand does not mean only the you know finding the number also to look into the short term and long term reason and future of the product.

Second is to divide the total industry demand into its main components right. So, dividing the total industry demand into its major components. So, the major components are everything for which can take a place for one product for a you know one product taking place for another right for example, of cars.

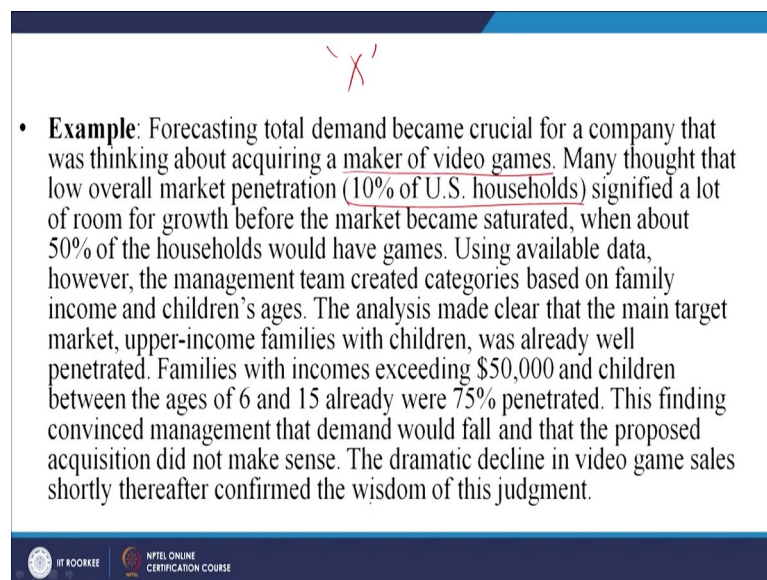
So, what are the different components required? And accordingly when the marketers can judge [FL] how many different units of this product would be required if suppose car cars are manufactured and this is number of cars are manufactured, how many tires would be required?.

How many lights would be required? How many different components will be required? And among them again, among the tires how many different substitutes are available? Among the engines, how many different substitutes are available? So, everything has to be taken together.

Then third point is to forecast the drivers of demand in each segment and project how they are likely to change by for example, with the use of regression and other statistical techniques right. So, you have to estimate to calculate the demand in each segment. So, you have said you know through marketing we have understood the segmentation is very important. So, you have created the segment.



Now, and you have found out the target market; now whether the target market in each in your target how much would demand would be there for your product? Is it sufficient enough? Is it you know is it worth enough to target that particular market? Right.

(Refer Slide Time: 07:08)



X

- **Example:** Forecasting total demand became crucial for a company that was thinking about acquiring a maker of video games. Many thought that low overall market penetration (10% of U.S. households) signified a lot of room for growth before the market became saturated, when about 50% of the households would have games. Using available data, however, the management team created categories based on family income and children's ages. The analysis made clear that the main target market, upper-income families with children, was already well penetrated. Families with incomes exceeding \$50,000 and children between the ages of 6 and 15 already were 75% penetrated. This finding convinced management that demand would fall and that the proposed acquisition did not make sense. The dramatic decline in video game sales shortly thereafter confirmed the wisdom of this judgment.

 IIT KHARAGPUR  NPTEL ONLINE CERTIFICATION COURSE

And for example, look at this when I talk about this case of you know forecasting the drivers of demand. So, this is a case forecasting total demand became crucial for a

company that was thinking about acquiring a maker of video games. So, there was a company X which was thinking of acquiring you know a maker of video games.

Many thought that the low overall market penetration 10 percent of U.S. households only at that time signified a lot of room; obviously, anybody would think right [FL] only 10 percent penetration is there, so 90 percent an opportunity is there.

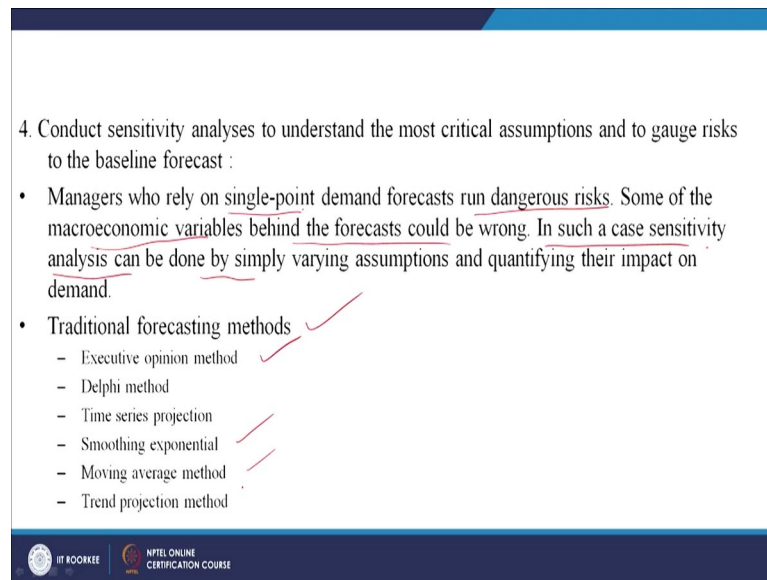
Signified a lot of room for growth before the market became saturated, when about 50 percent of the households would have games. So, they thought there is a lot of potential. Using available data, however, the management team created categories based on family income and children's ages.

The analysis made clear the main target market, at the upper income families with children was already well penetrated ok. So, the company realized that the target market which they were making aware thinking of is already well penetrated, families with incomes exceeding 50,000 dollars and children between the ages of 6 and 15, already were 75 percent penetrated.

This finding convinced the management that demand would fall and because this children will grow up right. And they are not being properly replaced because, that is that cohort is not getting replaced. And the proposed acquisition did not make sense.

That dramatic decline in video game sales shortly thereafter confirmed the wisdom of this judgment. So, it becomes very important not only to estimate the numbers at the moment, but also to see the future of the product right.

(Refer Slide Time: 08:55)



4. Conduct sensitivity analyses to understand the most critical assumptions and to gauge risks to the baseline forecast :

- Managers who rely on single-point demand forecasts run dangerous risks. Some of the macroeconomic variables behind the forecasts could be wrong. In such a case sensitivity analysis can be done by simply varying assumptions and quantifying their impact on demand.
- Traditional forecasting methods
 - Executive opinion method
 - Delphi method
 - Time series projection
 - Smoothing exponential
 - Moving average method
 - Trend projection method

IT KOOKEE | NFTEL ONLINE CERTIFICATION COURSE

The fourth point, after the forecasting you know is the conducting the sensitivity analysis to understand the most critical assumptions and to gauge risks to the baseline forecast. Now what is what we mean to say is, you when a marketer you know does a forecasting; he might be looking at only one single point right.

So, managers who rely on single point demand forecasts they run dangerous risks right. But because the conditions might suddenly change what if today you have forecasted and suddenly the government changes its tax policies; the ruling party may stay or not that also could be a change.

So, whatever the if the economic the political and economic conditions is very volatile and it is changing how would it affect the entire forecast? So, some of the macroeconomic variables, behind the forecasts could be wrong right, they might change wrong in the sense they might change.

In such a case, sensitivity analysis is done can be done by simply varying the assumptions by manipulating the assumptions and quantifying their impact on the demand. So, by if I change the you know a demand if I change the you know the independent variables let us say, how would it change my final demand? So, companies these are the 4 points which marketers have to keep in mind when they are doing a demand analysis at least in the international business.

So, traditionally forecasting methods when you talk about there are a few methods right. So, some of them could be just qualitative methods and some could be quantitative methods. So, when you look at the methods they are like for example, the executive opinion method right, now what is an executive opinion method? A method where the you know the people in the sales department the people who are close to the customer the people who are you know in the frontline managers.

They know better than others. Now and then estimation is you know calculated from their perspective. So, after doing this the company assumes [FL] what could be the future demand, right? Similarly, there is the Delphi method.

Now Delphi method is again a expert opinion method right expert opinion method in the sense, the expert in a particular industry for example, the FMCG industry, the consumer durable industry, the industrial marketing sector whatever it is, experts in that particular area they their opinion is taken and this opinion is well drafted and measured and then they try to foresee the future ok.

For example, let us say tomorrow what would be the requirement of energy in the future in maybe 2040 or 2030. So, to make an analysis of this you cannot approach you it is very difficult to quantitatively measure it sometimes qualitative measures are better in this condition.

So, in such a condition and you know people who are from this sector for example, a senior employee from an NPT NPTC or in India or say rural Electric Corporation; could be the better man you know people who could give you a idea what is the energy requirement going to be? So, similarly there are other techniques like time series projection right, smoothing exponential, moving averages and trend projection methods so we will see some of them right.

(Refer Slide Time: 12:19)

• Simple moving average = $(P_1 + P_2 + P_3 + P_4 + \dots + P_n) / n$

• Weighted moving average calculation = $(\text{Price} * \text{weighting factor}) + (\text{Price previous period} * \text{weighting factor}-1)$

• Example, assume prices of 90, 89, 88, 89, with the most recent price first.

• $WMA = [90 \times (4/10)] + [89 \times (3/10)] + [88 \times (2/10)] + [89 \times (1/10)] = 36 + 26.7 + 17.6 + 8.9 = 89.2$

Logos: IIT ROORKEE, NPTEL ONLINE CERTIFICATION COURSE

For example, a simple moving average now this is a quantitative method what is done? Now suppose there are 5 you know periods P_1, P_2, P_3, P_4 up to P_n let us say whatever it is, 5 there are 5 P_5 .

So, you just take the last year sales of these 5 periods and divide it by 5 and that becomes the 1 for the 6th right. And then for when you want to make it for the 7th then you leave this and start from this P_2 this becomes P_1 . So, 1, 2, 3, 4 and P_5 or an P_6 which you had. So, this 5 you add up and then you divide it by again 5. So, the by that method you can simply understand the demand of the market right, this is a very simple method. But then you have other methods also for example, the weighted moving average calculation.

Now, what it is saying? Now in this method you see price into a waiting factor the weight factor is multiplied right, plus price of the previous period into weighting factor minus 1. So, assume prices of let us say there are some of the prices right 90, 89, 88, 89.

So, now when you talk about a weighted moving average how it is calculated there are 4 the 4 1, 2, 3, 4. So, the number the base number is taken as 10, right. So, base number random it is a random number. So, what you do is 90 into 4 by 10 plus 89 into 3 by 10.

So, this is the first the latest and this is the most furthest period distant period right. So, this is in terms of closeness this is the 1st, 2nd, 3rd, 4th right. So, 89 into 3 by 10 plus 88 into 2 by 10 plus 89 into 1 by 10. So, when you do this. So, you get a value of 89.2. So,

when you come to the 5th point. So, here the sales would be 89.2 and you can carry on this you know method. So, this is another method.

(Refer Slide Time: 14:16)

• Smoothing exponential ✓

$$\overset{LF}{F_t} = \overset{LF}{F_{t-1}} + \alpha(\overset{AD}{A_{t-1}} - \overset{LF}{F_{t-1}})$$

where: F_t = new forecast
 F_{t-1} = previous period forecast
 A_{t-1} = previous period actual demand
 α = smoothing (weighting) constant

• Regression → $(Y) = a + b_1x_1 + b_2x_2 + b_3x_3 \dots + b_nx_n$

0 1

IIT ROORKEE | NPTEL ONLINE CERTIFICATION COURSE

So, there are other methods for example, smoothing exponential, now this is also largely used in forecasting and marketers use it very effectively. This method says a new forecast for today; let us say forecast for the today's period is equal to previous years forecast F_{t-1} plus A_t which is your previous actual demand this is the actual demand. So, last year's forecast this is last year's forecast actual demand last year right previous periods actual demand and alpha.

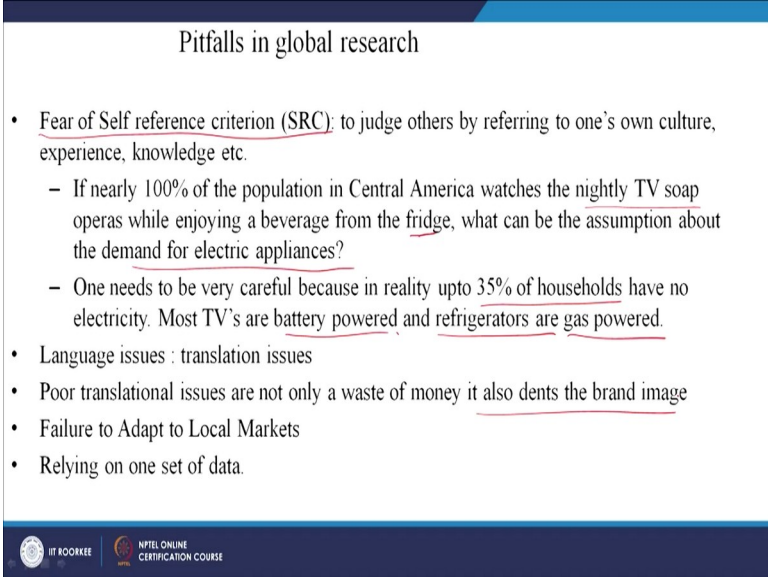
Alpha is a factor which ranges between 0 and 1, and the value when it is it the higher the value of alpha the most recent value is taken right. So, it gives you an idea [FL] what is the it is the most recent value that is taken. So, smoothing exponential also is the technique which is used for forecasting right.

Similarly, you have a regression which is a trend position technique. So, in which Y is my dependent variable and a plus b of x is where x is my independent variable and I keep in mind b is my constant. So, I can have b_1x_1 plus I can have b_2x_2 plus b_3x_3 goes on b_nx_n . So, by doing this I can also forecast the previous the next you know coming futures demand right.

So, all this we have been trying to talk about is the you know the how global research how research in the global sector is happening? How that can get affected? How product research has to be done? How demand estimation has to be done?

But, what are the major pitfalls? We will talk about global research what are the things that one needs to what the marketer needs to keep in mind the firm needs to keep in mind? The biggest problem when you talk about global research has been seen to be the fear of self-reference criteria.

(Refer Slide Time: 16:11)



Pitfalls in global research

- Fear of Self reference criterion (SRC): to judge others by referring to one's own culture, experience, knowledge etc.
 - If nearly 100% of the population in Central America watches the nightly TV soap operas while enjoying a beverage from the fridge, what can be the assumption about the demand for electric appliances?
 - One needs to be very careful because in reality upto 35% of households have no electricity. Most TV's are battery powered and refrigerators are gas powered.
- Language issues : translation issues
- Poor translational issues are not only a waste of money it also dents the brand image
- Failure to Adapt to Local Markets
- Relying on one set of data.

Logo of IIT Kharagpur and NPTEL Online Certification Course

Now, what is the self-reference criteria? So, this is a criteria which says to judge others by referring to one's own culture, experience, knowledge etcetera. Now what does it mean? Suppose if I ask you right what would be the sales of motors, auto automobiles or two wheelers in let us say Pakistan, right.

So, what generally a person does or let us say a sales in let us say Malaysia ok. Now if what does a person what a person generally does is that - whatever he feels about the economy at the moment let us say the global markets say suppose he feels the market is going in a recession. So, he would say that he or she would say the market is not doing well already 30 percent 40 percent fall has been there.

So, taking this queue, what he feels in the home market he would just extrapolate to the other markets; which is a biggest mistake that can ever happen and can be a serious disaster for international business.

If nearly 100 percent of the population in Central America now you see this case if 100 percent of the population in Central America watches the nightly TV soap operas while enjoying a beverage from the fridge right, what can be the assumption not about the beverage I am asking, but about the demand for the electrical appliances like fridges.

So, does a manufacturer like whirlpool or Samsung do this see a future in this, by just understanding that everybody in the night is using a beverage from the fridge, so automatically that is a demand for the fridge. Now, one needs to be very careful because in reality you see up to 35 percent of the households in Central America they have no electricity right.

And most TV's are battery powered and refrigerators are gas powered. So, you tell me in such a condition if a company is does not have the ability to manufacture battery operated or powered and gas powered you know appliances, how could he sell the product? So, just think looking at a you know statement or a you know case one should not jump into a conclusion right. So, self-reference criteria is exactly this. So, one should not extrapolate its own thinking and try to see the future that is wrong.

There could be several issues when you talk about global research for example, the language issues how do you? What is the language you are using? How do there is a how do you translate right from one language to the other?

Generally, what we do is we tend to translate a statement or as you know sentence, whatever we are thinking in our mother tongue we try to translate in another language. Actually, that creates a very different meaning because of the change in grammar, because the change in the you know the kind of usage of language. So, that is very dangerous sometimes.

And it has been seen like many major many companies have fallen to a trap by this translation issues right. Poor translation issues are not only a waste of money, but it also dents the brand image of a company right for example, there was a company which made

a car and the name of the car was spelt in another market that a car that is something that does not move the meaning came out.

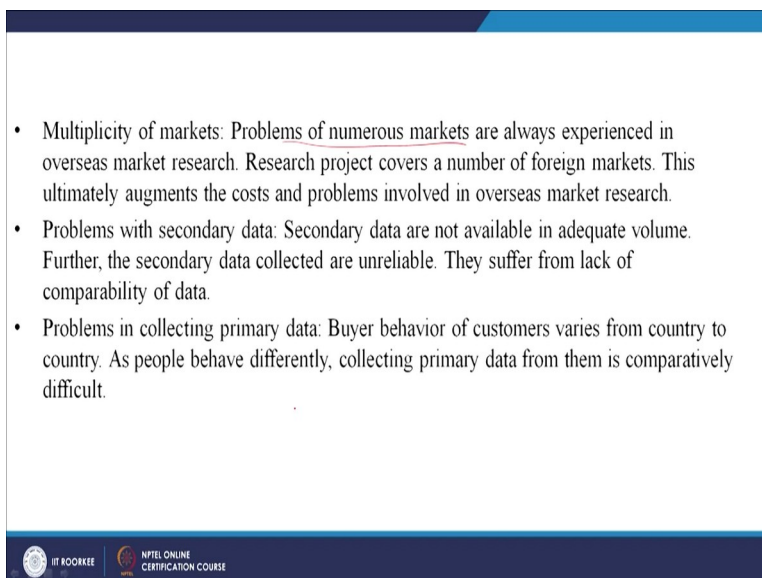
Now suppose, when you make such a disaster right, when the cars in the brand name the cars product name itself may meant in that new culture, new country that something that does not move why should anybody buy a car, right. Failure to adapt to the; adapt to the local markets and relying on you only a set of data.

So, that is very difficult and dangerous in global research; when you are doing a global research you have to understand how to adapt to the local markets and you cannot rely only one secondary source of data because largely what we do is we rely on secondary sources of data and we miss out on the primary sources, we do not because we because of lack of time and urgency we do not do that.

But then, primary data gives you a much richer input what secondary data cannot maybe. Because secondary data has been done by somebody else, whose objective might have been very different and more than that it might have some errors also, and the time frame when it was done when it was done was also different.

So, all these things may create a difficulty when you talk about global research right. There are problems like multiplicity of markets. So, problems of numerous markets are well experienced in the overseas market research right.

(Refer Slide Time: 20:34)



- Multiplicity of markets: Problems of numerous markets are always experienced in overseas market research. Research project covers a number of foreign markets. This ultimately augments the costs and problems involved in overseas market research.
- Problems with secondary data: Secondary data are not available in adequate volume. Further, the secondary data collected are unreliable. They suffer from lack of comparability of data.
- Problems in collecting primary data: Buyer behavior of customers varies from country to country. As people behave differently, collecting primary data from them is comparatively difficult.

Logo of IIT ROORKEE and NPTEL ONLINE CERTIFICATION COURSE

Research project covers a number of foreign markets. This ultimately augments the cost and problem in the overseas market research so right. So, what it says problems with numerous markets for example, when net you know sorry Avon, when the Avon entered into you know several markets after that they realized, that the catalog that they were manufacturing that they were making most of the products in the catalog right were not available in some of the markets.

And, because of this the people were getting confused or they were getting irritated because they felt they were being side-lined, that the products were being not made available for them. So, this is an important issue one needs to be careful problems with secondary data as I just mentioned. So, it is might be unreliable; problems in collecting primary data: the buyer behavior of customers can vary from country to country right.

As people behave differently collecting primary data from them is also comparatively very difficult right. So, all this created you know a large issue of problems right for the marketers. And this that is why it becomes very important for the marketers as to understand what kind of you know research issues can they face, when they talk about international markets so and international business. So, with this I will just wind up today and we will continue from here in the next lecture ok.

Thank you very much.