Knowledge Management
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Lecture – 31
Evaluation of KM Effectiveness: Tools and Metrices

Okay so now we are moving to the seventh week program.

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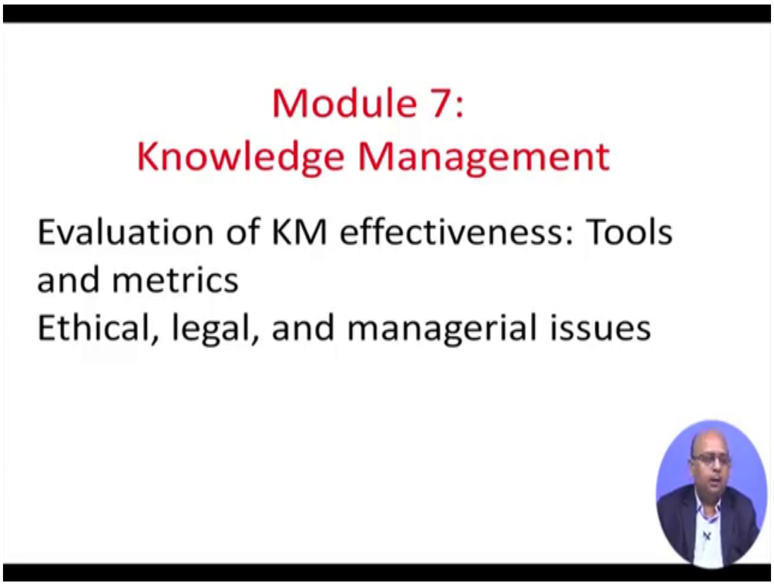

On this module actually of knowledge management is going to talk about two things that is how we are going to evaluate a knowledge management system, whether it is effective, whether it is given desired results are not so we have to see that what are the tools and techniques that is used but managing the effectiveness of a knowledge management system and see that whether it is effective or not.

Another issue is that is very, very important when you are going to use the knowledge management system is related to be they basically ethical, legal and managerial part. So this week we are going to cover these things.

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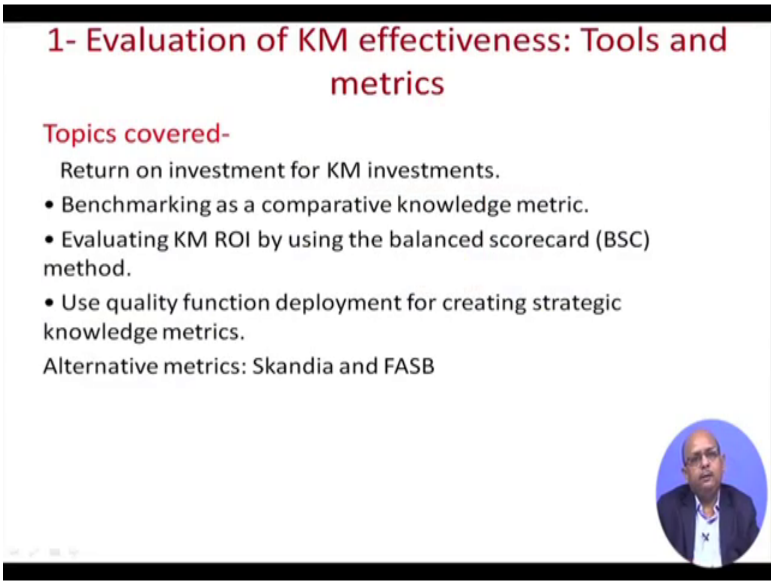

And we are starting with basically evaluation of knowledge management effectiveness tools and metrics and the topics that we are going to cover is that how we can calculate the ROI on KM investments because you know that we are going to invest money and knowledge management activities, the objective is to get some benefit of sub out of it.

Then you have to see that how we are going to compare our knowledge manual system, so you need to need to create a benchmark for different parameters and sit and make sure that you set this parameter sensitivity, so that you can compare in your knowledge management system effectiveness with those parameters, which are benchmarked and then we will also use another approach that is very, very important which is developed by in a car plant that is balanced scorecard.

So how we can use balanced scorecard to calculate ROI, in case of knowledge management and then we will see that how we can employ a quality function deployment, to create strategic knowledge matrix, now and then the asserted other measures that is being used in case of knowledge management which is not exactly knowledge management, but it is related to knowledge only which is not as intellectual capital. Then you have Skandia and other things which we will discuss.

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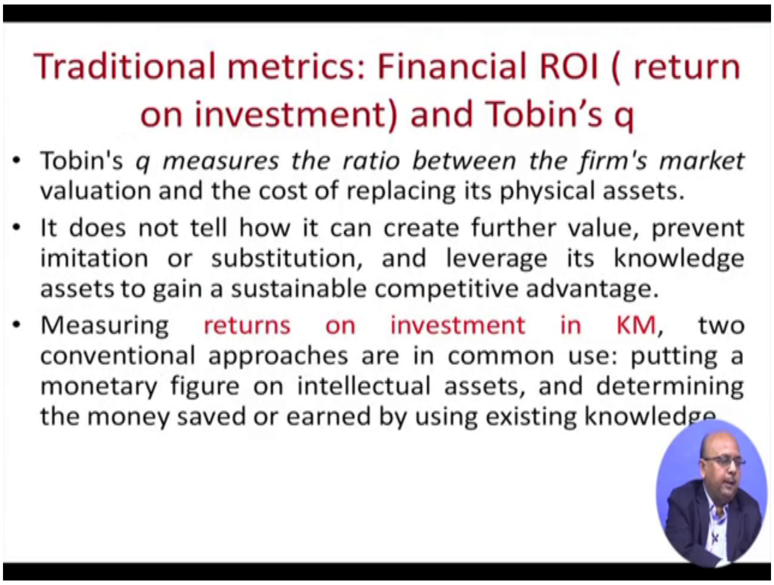

So we start with the first part that is you know that when it comes to measuring return on investment, yes there are two major measures that is used that is return on investment and Tobin's q, you now if you look at return on investment in knowledge management, what you basically try to see that how much money you have invested, on an intellectual asset and how much means money is being saved are run by that particular investment.

It is simply like suppose you are going to invest some money and then you see that how much you are going to earn out of it that is what we know as a return on investment approach. Now when I am going to use Tobin's q basically a regression techniques something and it basically measures that whether the firm market valuation and cost of replacing its physical asset is equal to what are greater to at right. So one is the standard so if it is less than that it means the ratio is skewed and it is not correct.

But it does not tell you to create further value it only tells further or the ratio of a market value and cost of replacing it with physical asset is less than one or not right, so what we are going to see that whether these traditional matrix that is financial return on investments and that means Tobin's q can be used for measuring knowledge effectiveness or not other than effectiveness of the knowledge management system alert.

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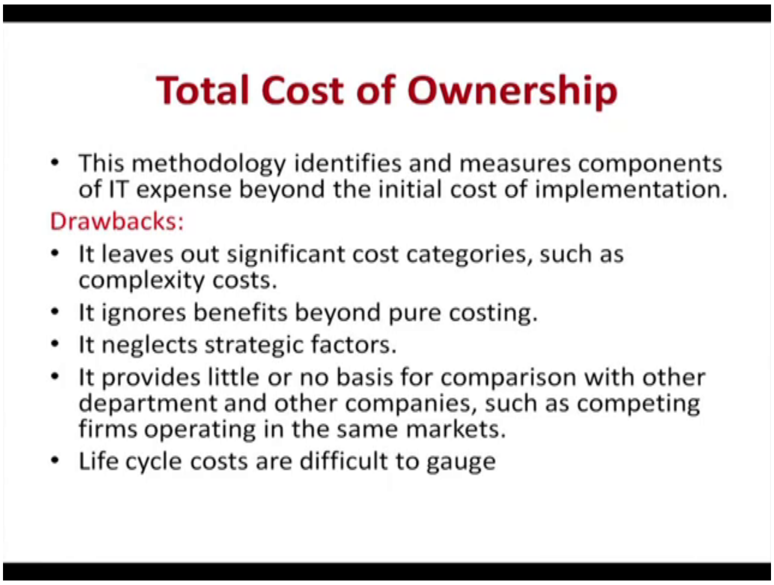

Now the question comes here is that when we are going to knowledge management is that what is the cost of ownership, because knowledge management cost does not only include the costs are the money that you have invested in the IT systems, they are associated costs related to the management, support, infrastructure, resources and people and also implementation, so the lot of cost that is associated in a knowledge management system.

So the most important is to identify what is the total cost of having KM system not, most of the time what we do we try to calculate only the expenses that we have made on software and hardware, we do not calculate our include other cash right. So it is very, very important that you do not only include the aright expenses, but you also include the total cost of implementing a knowledge management system right.

Because if you do not include all the costs of a knowledge management system then probably we are leaving out certain things and you will not be able to justify your cost right and do not use only a costing approach, in economic terms or financial terms because there could be let us pass which is related to human relations you are human behavior okay, that needs to include it okay.

And then you have to see that I want to compare your with others okay suppose you have developed knowledge system you have to see that how well you are doing, compared to that how others are doing not only in terms of blowing or its effectiveness, how much benefit you have derived in terms of your investment, how much benefit they are deriving in terms of their investment.

So we are going to compare your input output ratio with their input out ratio to see where do is time right. It is very, very important because in since you are competing in a market are similar markets, it is very, very important to see that your input output ratio is greater than the input output input output ratio of your competitors right. And then we also need to look at the life cycle cost because when you are going to implement a knowledge management system in the beginning.

It requires the host craft and then there is a break event right after the breakeven point then you start reaping the benefits of a knowledge management system right so you have to see that what are the different cache different type of costs a different time of the time period of implementing a knowledge management system, so these are the issues that need to be looked into.

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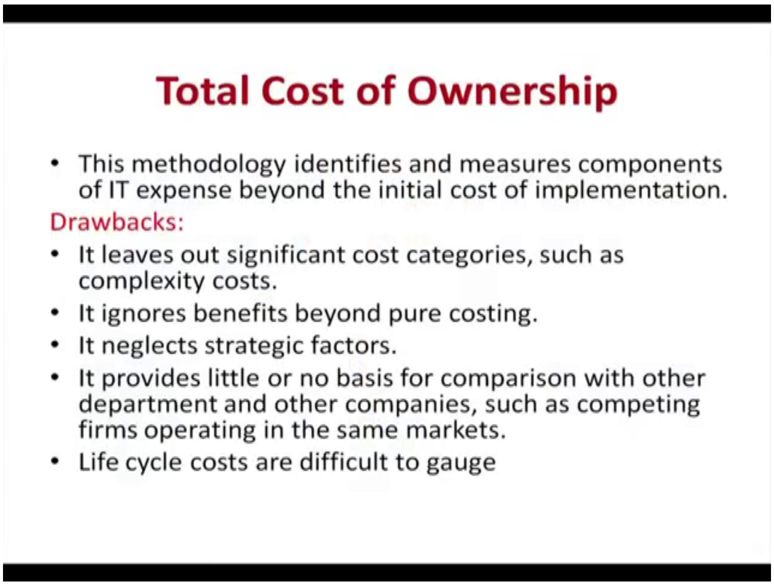

Then let me give an example that however to justify the cost okay, can you justify the cost and evaluate a one? it is very difficult okay because the kind of features it has I excuse if it is going to worry and then quantifying them is the big issue right, similarly when we are going to justify it the costs related to a KM system then you have to see that what are the benefits compared to other investments, that you are making in the organization and whether they are worth it and whether you are going to use make use of it.

So the first thing that you need to look at it when you are going to make any investment in a KM system what would be the use, what is the objective, what is the purpose, why want to have a knowledge management system in a organization right. Similarly when you are going to buy a phone what would look at, whether I want to make a phone call only, or whether are going to have other uses and how I want to quantify discussed and whether the phone the cost of the phone justifies us or not.

Similarly I am using technology of KM with a phone because knowledge management system investment has to be justified based on its application and use, as whether it is worth to have a knowledge mounting system in the organization or not right. Sometimes the managers who over here the middle level may feel it is important, but the people at the top level need to be convinced that okay.

We need to have these kind of things because it is going to be beneficial right and then the middle managers have to convince the top managers, that why we need to have a knowledge my own system in place and what kind of benefits we are going to reap out of this kind of system right. So how long the ways of the cost okay.

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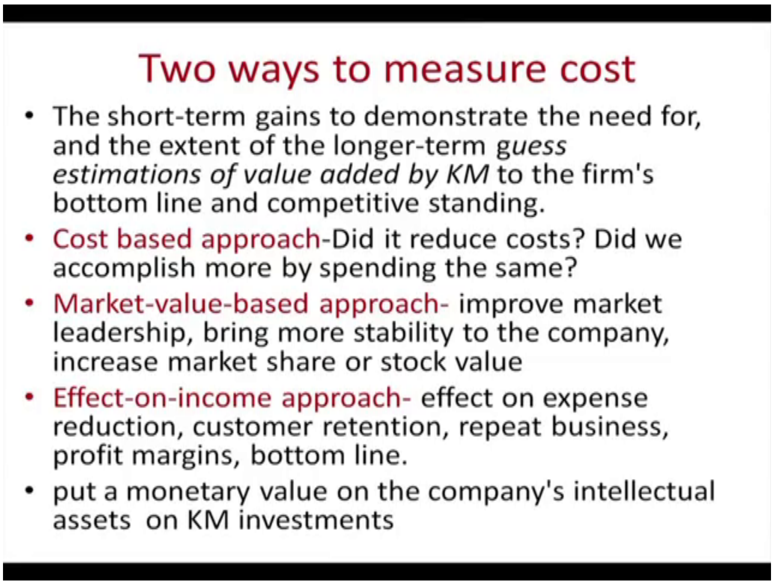

So you can measure the cost in the long term, in the shorter right and you can I do add up different kind of approach is to measure the cost, like cost based approach, cost based approach means if you are going to introduce a knowledge management system is it going to reduce the cost of the operation, market-based approach with the knowledge management systems help it to improve your market leadership okay.

As it brought more stability to the market other company right, how is your market value our market share and increase are not right, so you are going to use these parameters to understand and estimate the value that is going to be added by the knowledge management right, similarly effect of income approach right, in what way it has helped you to reduce the or a reductions in the expenses increase in new customers okay.

Whether you are getting repeat business or not whether a proper margin are improved or not okay, ultimately your performances all wrong about not because ultimately it is very, very important to look at the bottom line, if your performance does not go up in spite of having a good knowledge management system and making a lot of investment it has no use. So it is very, very important to identify both the cost and the benefits that you are going to derive and then you need to identify it in a quantitative manner.

And put a monetary tag on both the cost as well as benefits to see that the benefits proceeds the costs and only then you can say that you have added more assets okay, this increase in your intellectual capital because of the investments in knowledge management right and that is why it is very, very important.

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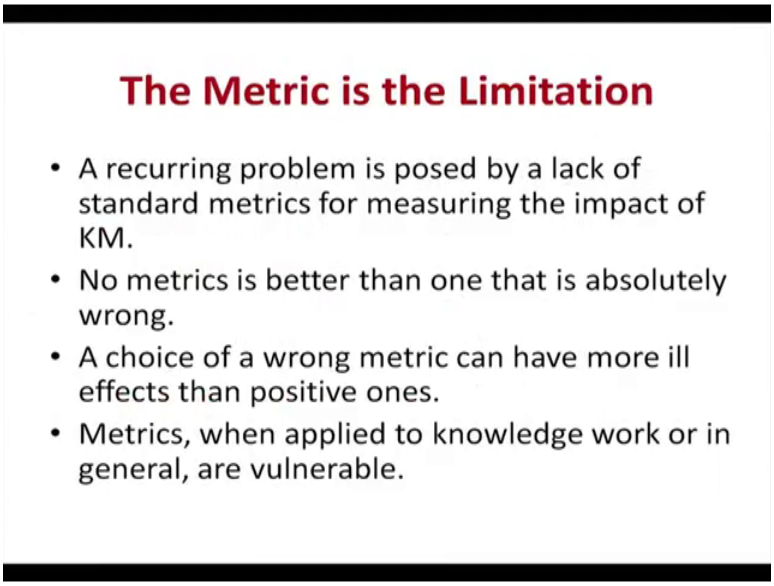

Then you are using certain metrics, see when you are using certain financial metrics it has certain limitations because these metrics are very, very objective and they use hard quantified data, like suppose you are using return on investment system, not total assets these are economic effects right. So if you look at these financial metrics what are the problems for these financial metrics in knowledge management system.

Since its only includes objective a hard one to five criteria it is not possible to use them in evaluating the cost of the KM system, because KM cost might also include certain hidden costs of the management costs which is not quantified properly okay. So it is not important to look at the matrix but words you have to see whether this matrix include both the objective cost and the subjective class right.

For example whether you are using a return on investment or written on total assets or whatever it is you have to ensure that these metrics give proper results and they are not vulnerable in the sense that they are proper and accurate and you are including all kind of things and there have been quantified properly and you have put a monetary tag on them, so that you can calculate the cost.

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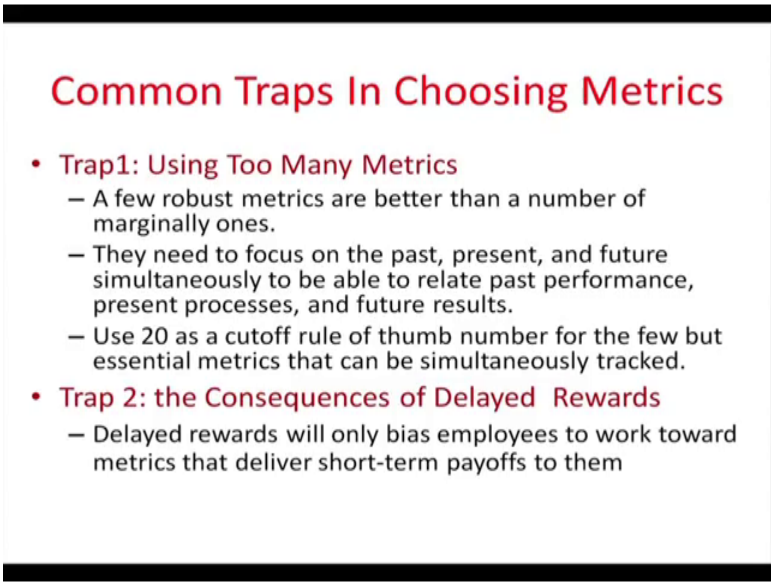

Now when you are going to use metrics for the problems, how many metrics will need to be used like, when it comes to use of metrics okay, you know that you have to look at the data that is coming from past, present and they also calculate about the future okay and what kind of outcomes are going to be there. So it may not be correct also because based on past analysis you are going to predict about the future and the environment changes so these predictions may not be correct right.

So the KM investments may not be very, very futile in that case right, so if you are using so many metrics for evaluating then it is not good, so you try to limit as less as possible okay one thumb rule is that not going to use more like twenty, you know metrics but even that is good enough okay and then you have to see that you are going to track all these metrics simultaneously. So that you can on various parameters you can check what is happening go to the KM investments right.

Another important thing is that are you linking this with the rewards or not yes, what are the benefits that you are going to doing or achieve out of these KM investors. So you are using certain in matrix to identify various crafts and you monitor them and similarly also identified various benefits again and whether these benefits are coming that short-term are the long-term, so you need to monitor and track both long-term and short-term metrics, sort of payoffs the advantage that is coming out of the system.

So you need to calculate both the cast which is include all of them okay try to make them as limited as possible, similarly we also concentrate on focus on what we call short-term and long-term perhaps that is coming out of this. Third one is that the certain criteria parameters which is very difficult to control okay, right.

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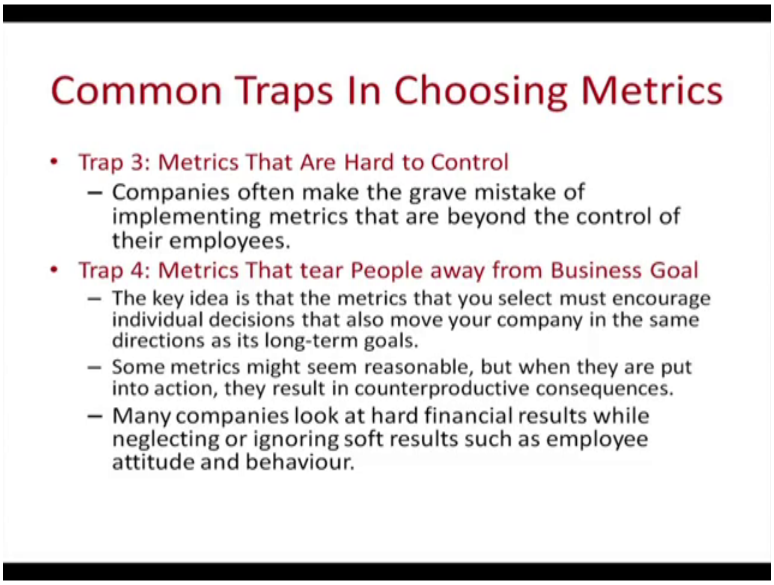

So if you are not able to control certain calculator criteria, how I want to include them in a matrix, so because it you need to have some kind of quantified data to use those matrix to calculate in a fair return on investment right. So if you it is hard to control and it is beyond our control then do not use it okay. Then you have to see that whether these metrics are including people related issues are not yes.

Because if you are only talking about hard for performance then you are not listening to a group which is very, very important to make sure that s the implies issues are concerns are taken care in the process right. So you do not only negotiate with hard financial reasons but also look into the shaft results later play imply attitude and the behavior that is very, very important.

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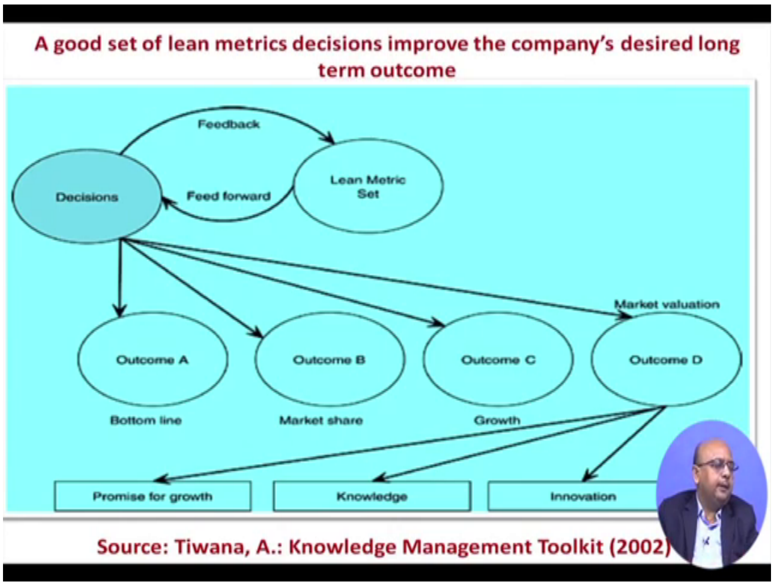

Then look at this with so statically these are the lean matrix decisions and how it is going to help companies desired long-term outcomes, now if you look at this these are the metrics these are using different kind of matrix X okay and these are the decisions you are getting feedback and then you have different kind of metrics its and which decisions are related to different things.

These are hard financial data right in terms of market valuation, in terms of growth, in terms of market share and improving performance right, now it could it is this market evaluation is based on what three things innovation, knowledge and promised forgot, so whether these things are taken care of got these are long-term measures and this could be short-term measures okay.

So you have to see that you are more concerned about your market I evaluate valuation compared to the bucket here and bottom line in the short right, so make sure that your knowledge management system that is evaluated that how beneficial it is, the most important parameter that you need to use its market valuation of the company, because market valuation helps you to see that whether a company is very, very innovative.

Whether using is knowledge and whether it is growth oriented or not right and that is why market valuation is more important than any other factors right, for example in intellectual capital major we use market value then book while you right. Those book value is related to move financial burritos and market value also include other things and that is why you go for market valuation.

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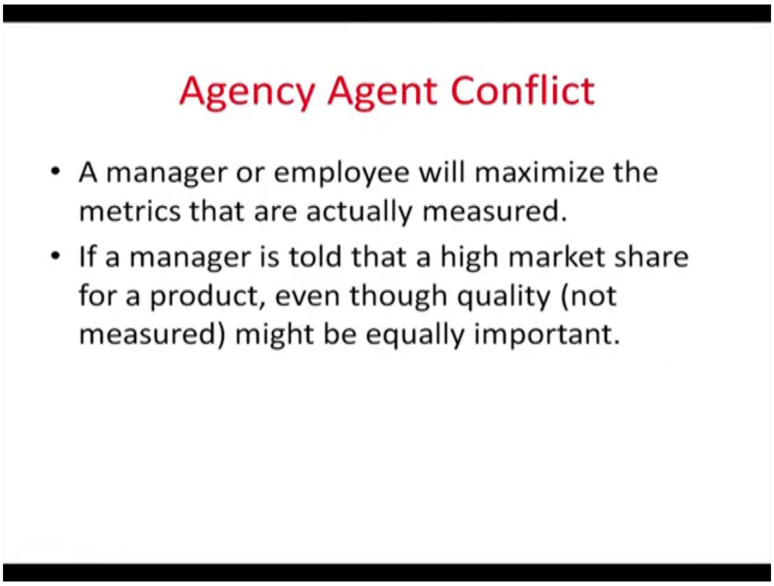

Another issue that is related to this is agency agent conflict right, the idea is that the agent that people who are using and the system that is there you make sure that it is synchronized in such a way, so that when you are using these metrics, you are actually able to measure what you want to measure right. Suppose you want to see that ok there is a higher market share for a product, though the quality is not good are you going first yes.

Call it a product with a bad quality still having a good market share right, now this quality and market share is not matching, so there is a conflict. So what you need to do is that when we are going to use these kind of things though it is not measured okay, it is very, very important so make sure that this kind of conflict are avoided, otherwise what will happen though we will try to maximize the matrix and outcome it may not be good in the long term so that is why it is to be avoided.

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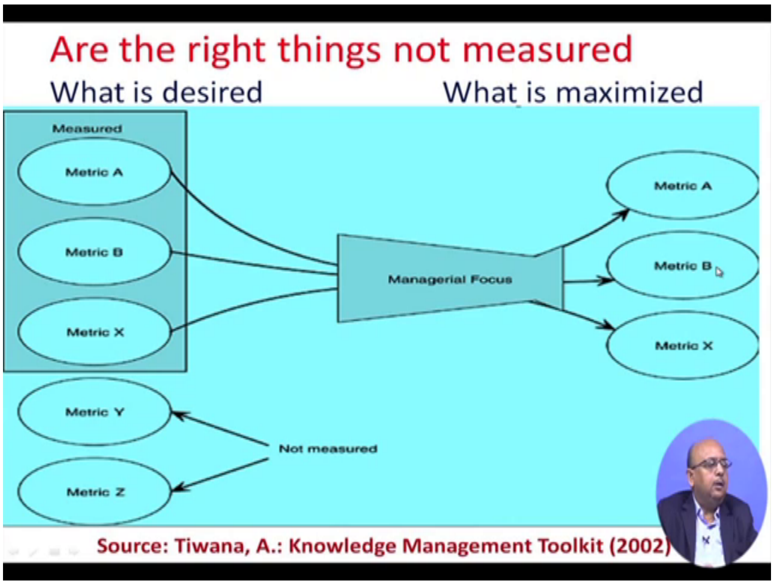

So another important issue is that you have to see that what are you measuring basically, you are using different kind of metrics, starting with which could be financial in nature, like return our methods, return on investments, return on total assets and there could be Adam and financial major which are much measured and you find out that these three metrics are very, very important.

ROI and ROT right, suppose we take these three measures and then which is basically focus by the manager right, now this is more important, so what you do basically you leave them out because you find that they are not you are not interested to measure them, but you only measure these things because you find that they are more important to you try to maximize it, but maximizing is not a solution.

Let us look at this it says, what you want to maximize the matrix that you want to measure, but you do not look at those things which you do not want to measure but it may be equally important these matrix may be equally important, but what is happening these are being left out by the managers you got it is not those their focus, because you are interested to increase these things so you want to measure it. So this is this could be a issue that needs to be avoided.

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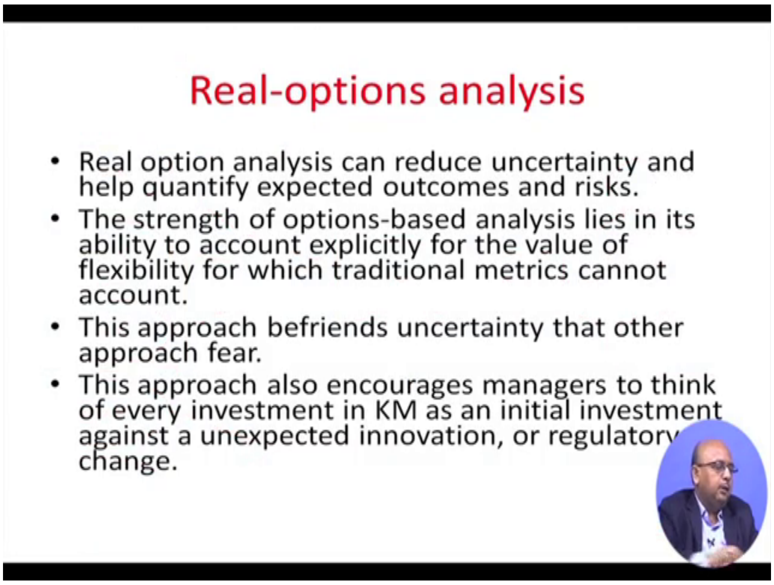

Next another important metrics and analysis that is done is known as real-options analysis, right a real option also basically is a kind of decision-making suffice okay, where which helps you to identify risk and uncertainty associated with any expected outcome right, so it helps you to reduce the uncertainty and also help to quantify unexpected sorry expected outcome and see what other is associated with that so it talks about two things risk and uncertainty, one thing and that is what is the expected out.

Yes in option based analysis what actually happens you have to see that you are not going to only account explicitly the value of flexibility, but you also include other things like how much investment is made at different stages, what is the innovation level, okay what are the other changes which are happening, so in relapse analysis basically is much more rigorous compare to financial metrics. And it is more useful and let us see how it happens.

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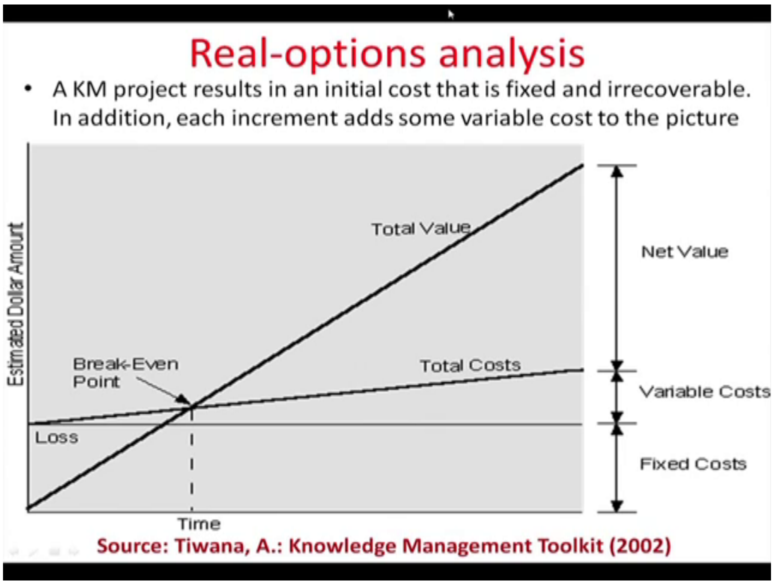

See this is a composite okay and one break even analysis is done here as I told you earlier also, so break even is here, this is the estimated amount that you are going to spend and at this point you are going to break even which means before that there is a loss right .But after that what happens the initial cost so it is high and fixed okay if you look at the variable changes right and look at that net value.

So each incremental cost at some value to the business and the total value goes up so you have to decide what would the break on point, what is your total cost and what is your total value so that you can calculate the profit that is coming out of it.

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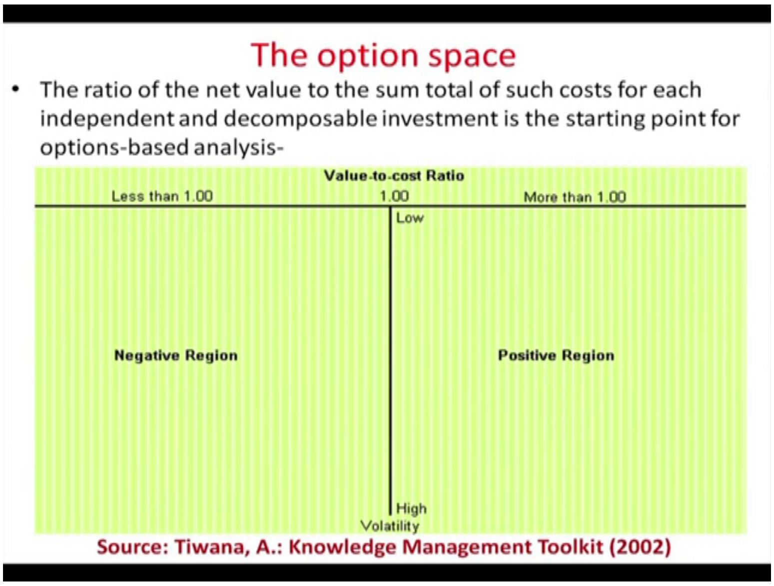

See there is optional space the example that I have taken here is value to cost, it is a show it should be less right so if it is more than one when you are in the positive radio and if it is less than one they do a negative area right, so ratio of net value the sum total of such costs, for such investments is the starting point. So make sure that your value to cost is here and you see I need also include certain, whether will it see if it is here then your vulnerability or risk is less and if it is here then we work very high right. So you need to see where you stand.

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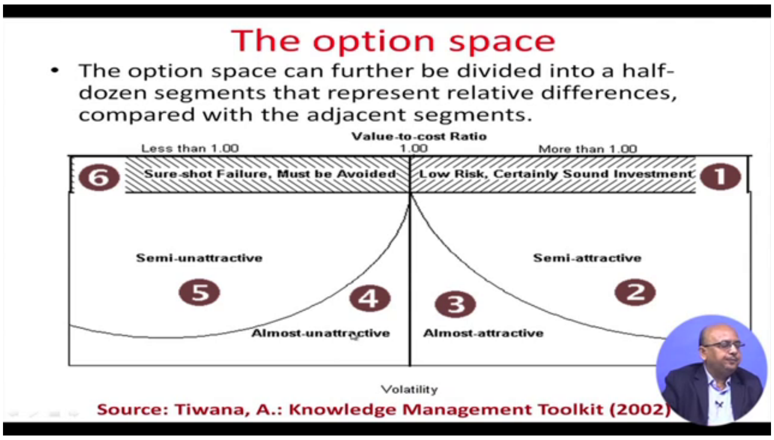

Now we will look at it further so the lot of segments that represent different components right, so if you are here okay value of to watch specialist place where risk is high okay, you are going to fit it is somewhat are not very attractive this is also not very attractive, so is 4, 5, 6, is these segments represent those are segments, which are not very attractive. But if you move up in the hierarchy with the wallet volatility is very high, but well it took a special high so in this case what happens you find it attractive.

As you move up till this one well to us ratio to find it more to attractive because the risk associated with this investment is goes down and also it you find that case of value to watch the suicides and the risk is less then you think that if they say most sound investment, so make sure that when you are going to do this kind of analysis you are close to this place okay.

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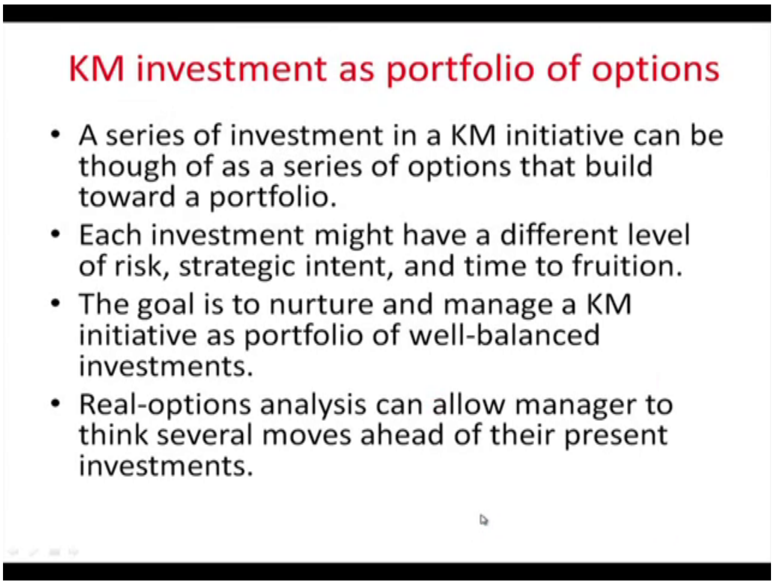

Then investment in portfolio options, so do have different portfolios and each investment must have a different level of risk strategy and time and function, so you have to see that which one you want to adopt okay, because when you are going to have any kind of knowledge management initiative you need to ensure that there is a portfolio of well-balanced investments that is very, very important.

In this case you are going to invest where you are going to invest in knowledge management, creation development, architecture system, development technology, right okay. So you can think when you are using real option analysis, that we are open to invest and in what the whatever is associated with different kind of investment okay and what are the options that is available to you right.

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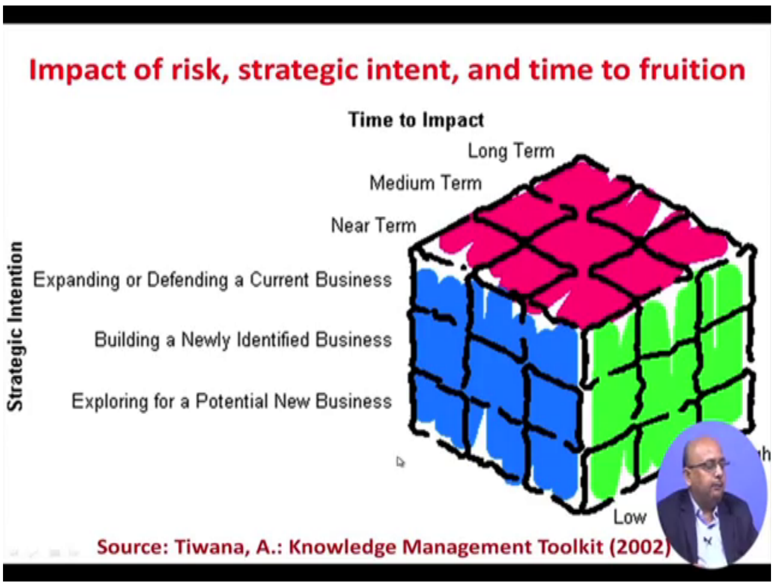

Say for example you look at this picture it takes about three important variables that is risk, a strategic intent of investment and when it is going to with great benefits right, time of predation right. So time of impact could buy in short, of near-term and also long-term, then you have to a strategic intent what are they static intent whether it is want to or a new business our you are building your business or expand your current business right.

Now if you look at this and the risk associated with it low medium and high, so this is a three-dimensional cube, now you look at it which is more desirable, see you want to have something that is here we are going to have long-term impact which is not going to help you who are here and there similarly want to be here, so these cubes need to be integrated so you have to see it separately that in what way this investment is going to help you to defend or expand your business.

Or go for into business are a potential new business similarly what it would be in the back and then what would be the risk associated with this, so what I am trying to tell you here is that if you are going to look at these three factors that is risk, strategy intent and impact so far as time is concerned you make use of these three variables to decide your KM investments and then accordingly you see that whether you are going to take it up are not okay.

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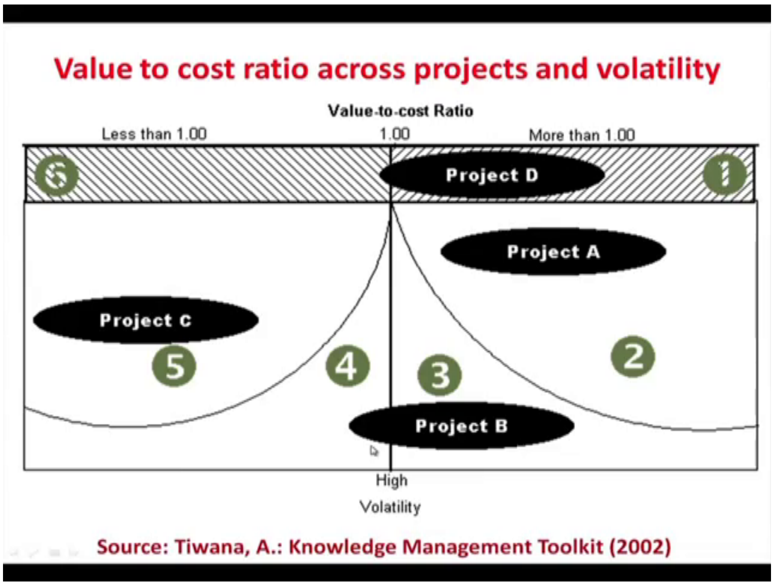

Now let me use the same value to cost ratio to across project so if you are there different projects like ABCDD you find four different projects are there now these four projects which one is more viable which is a better option to go forth definitely not project this project free because volatility is high and of course value to cause stress is very less right, it is not it is less than one, so you should not go for it.

So the option that you have out of these four is this one so this is a real option because you have done you have calculated value to cost ratio and also risk associated with this, so this project is more viable in the sense the cause this is going to help you to complete our achieve your objectives this is also possible provided it is not feasible in the sense that is the volatility is very less not very high.

And but the value to cost ratio is a little better than project less, so now you have two different options here there is very high so you should not go for it so in case of real optional receives either you select project D or project A depending upon the requirement and see which one is going to be more beneficial, see if you look at the cost factor this quite some more benefit, but greater risk is involved here the cost value to cost ratio is this, so lets benefits are payable less risk is yes.

Now what would be the better option out of this for this project A, because even if some risk is a little higher it is going to provide you better benefits right.

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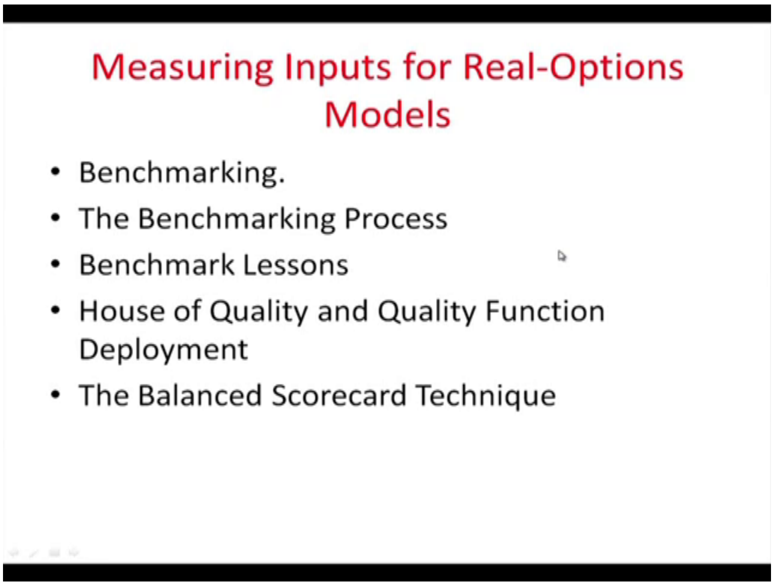

Then you also need to in see what are the inputs that you are going to know like there could be different inputs that could be used for your option model like benchmarking, so you need to industrialize the process okay and benchmarking is basically used for comparing then you also need to indentify, what is the benchmarking process? Which is to be used and how you go about benchmarking? And ultimately we will also discuss about quality and quality function deployment.

And then ultimately we will talk about balanced scorecard techniques, now when we are going to measure the input for real option models.

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Let us understand first what is benchmarking yes, see why you go for benchmarking okay, so that you are going to create a standard for yourself to measure your performance, so when you stand with the ways that particular benchmark. So for example in terms of quality okay if you are using six sigma quality as a standard means, what particular weight rates of defect 0.001 per million right for the product.

Now if you are using this benchmark then you are using it to see that what is your rate of rejection and whether it is above is or less it and accordingly you can say that was I go successful or not right, so when I am packing a benchmarking it is very important and with systematic process to see how your organization's performance is compared to that particular criteria that you have used as a benchmark.

S benchmark is a standard against which you are going to compare your profile right and it can also try to lot of information what is your productivity of the knowledge investment, for example in case of knowledge management we are going for benchmarking, so you say those okay this is what we expect out of the knowledge management investment right in terms of productivity.

So if your productivity goes up by certain percentage I sit by your benchmarks then you can see if knowledge management investments are justified you say that okay, this is how it KM investments is going to improve your service quality yes which is more intangible not intangible terms. So you can say the service called quality improves okay a customers are retained a satisfied and they are loyal then came investments are justified right.

So you have to see that how it is going to help in terms of service quality, customer satisfaction, customary retention and for each of each of them you need to develop certain benchmarks okay, these are the benchmarks that need to be achieved as a benefit as a target against which you are going to compare performance, once the scheme knowledge management system is in place right.

Then coming to the product life cycle how fast you can come out with a new product in the market, whether your knowledge management system helps people to be creative, innovative in the system. So that they are bringing out more products more processes okay that is one thing then you also include certain criteria as benchmarks like how much cost is going to me down, how much profits going to back up, what would be whether a margin profit is going to improve.

So suppose you said okay your profit margin has to improve by five percent, once you are going to make KM investments in this particular area so these KM investment must include I improve your profit margin by five percent okay. Now this five percent is used as a benchmark which is a standard against which you are going to compare performance, benchmark can also be used in case of relationship management of our customers and employees.

That see the relationship the level of relationship is this in customers and then you have certain indicators of this relationship management or sub retention quality of service that is being delivered satisfaction level, commitment level, right which are the indicators of a better relationship with the customers right so on these accounts you quantify it create a benchmark and then try to edit which to ensure that your KM investments are justified right, so you are using the image marking for this purpose.

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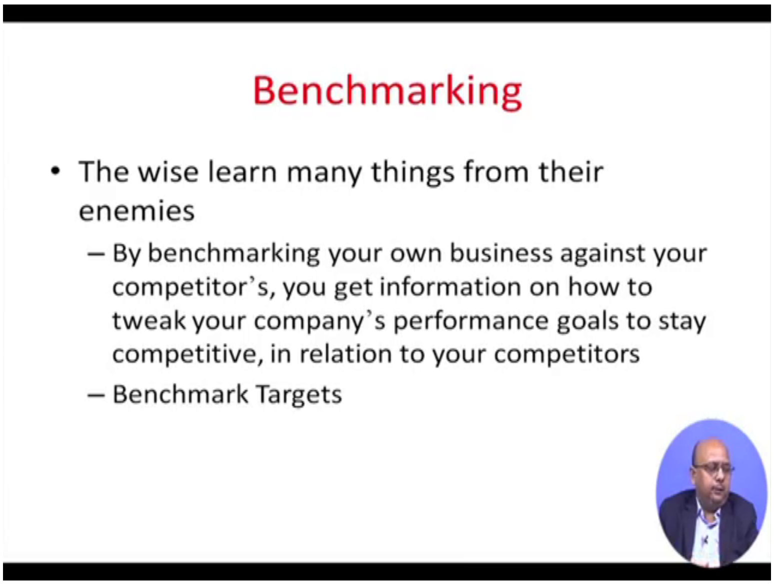

And finally benchmarking your own business against your competitors you also get information how well your company performance is being then compared to others right and then you create certain benchmarks targets compared to profit market share value and these kind of things and that is how you are going to improve this process so we will continue our discussion about it but thank you.