

NPTEL
NPTEL ONLINE CERTIFICATION COURSE

Course
On

Human Resource Development

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Lecture 47: Intellectual Capital Management
(Contd.)

This intellectual capital management lecture and you remember in the first session we talked about what is intellectual capital, how it is required, and what are the different form of capital and how it is going to add value to the business right.

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Session 2

Measurement Models of
Intellectual Capital Management

Now the question arises that how we are going to measure intellectual capital right, because unless you know that what is the base of your intellectual capital whether it is increasing or decreasing, you can think about utilizing it effectively or developing your people or you can say

that how you can relate it with the performance of the organization. So there could be lot of issues related to measurement and in this context you will find that a number of models are being developed in the literature okay.

So we will talk about some of the important models which have been developed. To see that how we are going to measure intellectual capital okay. And then later on we will also talk about how you are going to create certain indexes based on the intellectual capital right. So what we are going to discuss here is, basically that what are the various models of intellectual capital management okay.

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Putting IC Resources to Value Creation

- Evaluation of the organization's unique transformation structure
- How the Organization deploys its resources to create value
- System dynamic(Behavioural Effect)

INTELLECTUAL CAPITAL NAVIGATOR

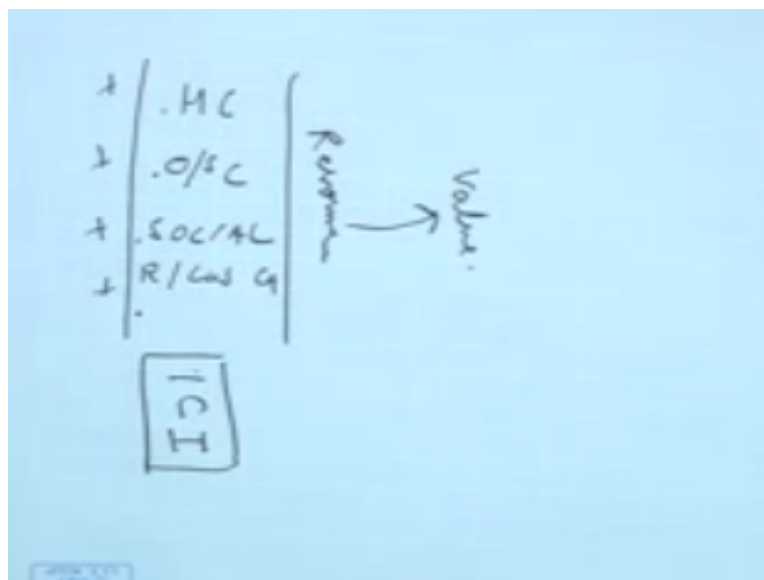
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Now the idea is that you are going to put intellectual capital resource to create a value for the organization okay. So you have to see that how you can add value through the transformation of intellectual capital into a value right. It depends upon that how you are going to use various form of capital to create resources to create a value for the organization okay. Since it is going to be dynamic factor, because it keep on changing.

So you have to see that, you need to keep that factor in mind is basically its dynamism so far as resources are concerned because they keep on changing okay, like human capital or relational capital or social capital, which is not purely technical but partly behavioral also. So you have to see that you need to create a system to navigate your intellectual capital. And this is known as ICN, intellectual capital navigator.

So lot of efforts have been made by the researcher in professionals in this direction to see to it, that how we are going to create intellectual capital okay. So some navigators have been developed okay, and the most famous navigator that has been developed is known as Scandia okay, that we will talk about, which is known as intellectual capital navigator right. If you look at this navigator it is a numeric and visible representation of how management use resource development to create value. Now see this, when we are talking about resource development to create value.

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And we have human capital we have organizational or structural capital, we have social capital, we have relational or customer capital okay, these are the different kind of resources that you have mental disposure. So they are treated as a resource, so this resource is to be utilized to create value for the organization right. So when you go for model building, measuring it you have to identify what is the value of each of these resources.

In the previous lecture as I told you that they will put develop certain indexes to find out, and exhaustive list of all kind of capital which could be associated with human capital, organizational or structure capital, social capital and relation capital. So if you sum it up you will be able to create a index, this is known as ICI, intellectual capital index this is known as ICI intellectual capital index so you need to navigate it regularly to find out that how are you going to transform this these resources to create a value for the organization and that is where these navigators are

been developed and they have been several models that is processed in the literature which we are going to discuss right.

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Skandia: The Early Pioneer

- Skandia - a Fortune 500 Swedish insurance and finance company
 - one of the first companies to issue an Intellectual Capital Report as a supplement to its Annual Report for shareholders (1994)
 - Leif Edvinsson
 - as one of the first ever directors of intellectual capital in a firm, was the principal architect of Skandia's initiative
 - intellectual capital guru
 - developer of an IC reporting model called the Navigator



So when you are talking intellectual capital navigators we have to see that what are the various models that have been developed right the first company in that started this process of identifying intellectual capital and went for navigator navigation is known as Skandia okay is Skandia is basically a one of the top performing companies you will find them listed has fortune 500 companies it is basically a insurance finance area which it was actually in the insurance and the finance area.

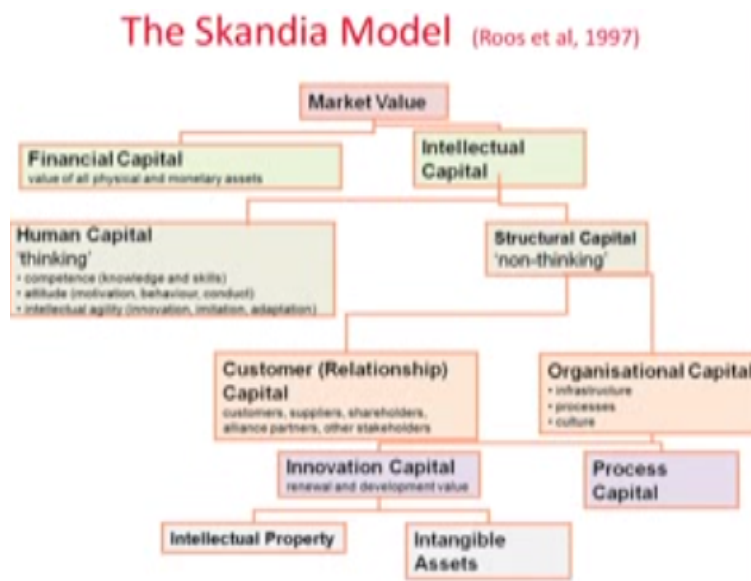
And it is one of the first companies to come out with a report which is known as intellectual capital report, so they tried to measure all kind of capital whether you call it human capital structural capital relational capital are social capital and they came out with a report which is known as intellectual capital report in 1994 okay.

And the person who did it is known as Leif Edvinsson okay so he was your the first director of intellectual capital of a particular form okay and he actually initiated or you can see was the architect of this Skandia in initiative to come out with a report on intellectual capital in his this company okay, so he was he is also known as intellectual capital guru Leif Edvinsson and he has developed a intellectual capital or reporting model which is known as a navigator.

So what we are going to discuss about this is that this was the first attempt made by someone to measure intellectual capital and go for report and this was reported to share holders, so that share holders not only about the book value of a company but they also know about the market value of a company okay because there could difference between the book value and the market value okay and that is why there was a separate reporting apart from book value about the marketed value of a company of this Skandia company.

To tell report stakeholders look this is the market value of the company right and for that he created a model which is known as a navigator and that is why it is also known as Skandia navigator.

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Now if you look at this Skandia navigator that is how we try to create a market value right so market value one thing is known as financial value and the other one is known as intellectual capital so if you look at the financial capital it is nothing else but the value of all physical and monetary assets okay so if you quantify all physical and monetary things that could be quantified in monetary terms that could be quantified in monetary terms.

You will calculate the value in financial as financial capital now when it comes to intellectual capital it was defined into two parts that were structural capital and human capital now the most difficult part of measuring of intellectual capital is that how are we going to quantify human capital who things basically right, because he has the knowledge skill and experience and the competence which is basically a part of the human capital or attitude is motivation and interest attitude these kind of things.

And also is intellectual ability it means whether you can emit which can adopt whether you can innovate or not so all this combines your human capital right, so the difficult part when it comes to measurement and of intellectual capital is that however to quantify human capital, now apart from human capital which is a thinking part which is very, very dynamic in nature comes to structural part which is non thinking part which is that is what you call the high static and idea part while human capital is more dynamic.

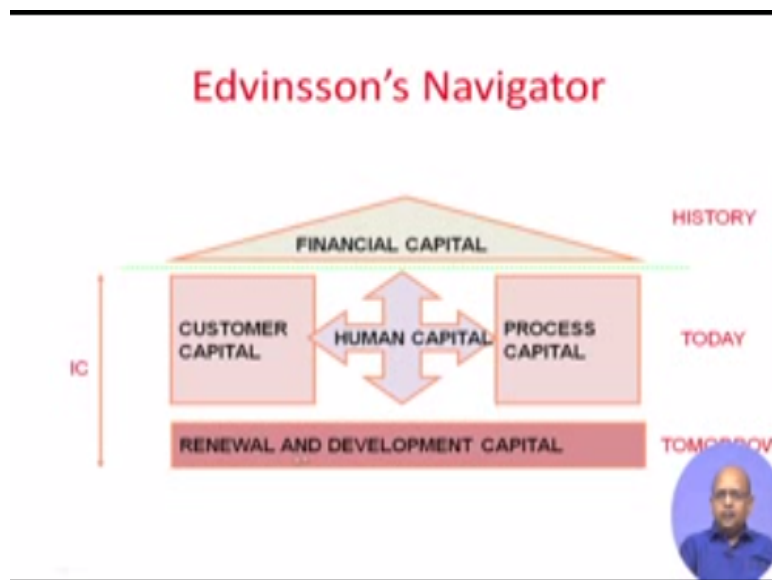
Right so here you had two different forms that is customer capital and organizational capital now when you are talking about customer capital it included things like what you call customers suppliers stakeholders what kind of strategic partnership you have right and when you talking about organizational capital it included the kind of infrastructure you had process systems in culture that you in the organization right, and out of our this organizational capital you have innovation capital okay.

And also process capital so innovation capital included your intellectual property and your intangible assets right, intangible which is very difficult to quantify and monitoring measure it right we will talk about these assets are relate our stress and then you have process capital process capital what are the different systems in process that you follow so if you look at this Skandia model the idea of developing this Skandia model was to calculate the market value of company.

Which is going to be different from the book value of the allocation right and if you are able to calculate the market value of company that is nothing else but yes some of what you call all capital combine in the form of a known as intellectual capital right, so the idea was not to go by book value but go by market value so what at this in report it for this company was the market value okay as a part of the intellectual reporting Edvinsson reported the market value of the

company and he found that this market value of the company was measured and the book value of the company.

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Right moving further if you look at this navigator okay which she was developed by Edvinsson if you look at this line sorry this line now if you look at this line.

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Intellectual Capital Navigator (ICN)

- It is a numeric and visual representation of how management views resource deployment to create value
- The ICN is about identifying transformations from one resource into another.



Sorry this line now if you look at this line this is the intellectual capital okay this is going this is the financial capital financial capital which can be easily quantified now as a part of intellectual capital you have human capital process capital and customer capital right, so in the past we used to focus more on financial capital right, because your book value shows their status of a finance right which is nothing else but in for example your balance sheet which shows what the various type of assets and liabilities.

That in organization has okay and that is how you try to calculate the value of an organization right based on the financial capital he say that it is a thing of the passed today we should focus more on market value of company which is a compression of these three measure values right at is what is the basis of human capital but his process capital that you have and what is the customer capital, so today you are going to measure intellectual capital in terms of these types of capital right.

May be tomorrow he says if you look at the last point he says that you are going to see this or measure it this intellectual capital on the basis of two things that is whether organization is able to renew itself in terms of redefining their structures system process culture capabilities of the people or the customers are not and whether he is able to develop them okay, so what kind of intellectual capital that you are going to have tomorrow is based up on renewal and development exercise that you are going to carry out with them okay, because not necessary that your

intellectual capital base that you have today will continue tomorrow unless you go for renewal and development, okay.

So if you are not going for renewal development if you do not create continuously improvise, innovate and improve and develop yourself the intellectual capital base of your organization may go down okay, and that is why he say that it is a exercise that is to be carried out on a regular basis to ensure that the intellectual capital base of your organization improves on a continuously right, and that is how you can navigate what is the status of your intellectual capital in the organization, right.

So moving from the past to the present to the future you have to see that what kind of measures you need to adopt in order to see the value of human sorry, intellectual capital right. So apart from this Skandia model in the literature also discusses certain other models, okay.

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Skandia IC Measures (from Bontis, 2001)

Skandia's value scheme therefore contains both financial and non-financial elements to estimate the company's market value.

Skandia uses 91 new IC measures (or metrics) along with 73 traditional (accounting) measures in the five focus areas.



But before we discuss we look at this intellectual capital measures that we have okay, so if you look at this Skandia, Skandia's value scheme it include both financial and as well as non financial estimates for the market value okay. Now if you look at Skandia measures intellectual capital measures I am not getting into detail but I am just trying to tell you that what are the various tools that they use to measure this, so it include 91 intellectual capital measures or that is the matrix that we have developed on those four type of intellectual capital and they also have 73 tradition accounting measures in five focus areas.

So they concentrate on five focus areas and they try to measure it in both terms financial terms and also non financial terms.

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Sample of Skandia IC Measures (from Bontis, 2001)

- Financial Focus
 - revenues per employee (\$)
 - revenues from new customers to total revenue (%)
 - profits resulting from new business operations (\$)
- Customer Focus
 - days spent visiting customers (nr)
 - ratio of sales contacts to sales closed (%)
 - number of customers gained versus lost (%)



So if you look at this Skandia measure okay, so it starts with financial focus okay, so these are some of the examples not the exhaustive list because this includes around 100 something plus so some of them are taken here as an example to explain you what are the periods intellectual capital measures as a part of this five focus areas right. So it is start with financial focus so financial focus say for example they try to say how much revenue is generated by per employees. See how many companies today try to assess that how much revenue is generated by per employees because depending up on the level of employees the kind of revenue that you are going to vary right, and then how you are going to assess that who is going to contribute how much, so it is a very difficult issue but they try to examine it in a very objective way using both financial as well as non financial measures okay.

So for example, they try to measure that how much revenue are you going to get from the new customers and to what extend it is a part of the total revenue in terms of their percentages and they are quantifying in all other terms right, how much profit as a result from new business operations okay, so focus primarily here is un-finance right, how much profit revenue is being generated through different activities of the organization that is the first focus.

Second is on customers okay, so you are going to see days spend visiting customers say for if you customize the focus then you have to approach customers you have to go for a deal and then ultimately you have to close the deal right, ratios of sales contacts to sales close suppose you

have contacted 100 people but you have to be able to mineralize only 20 sales that is close for your record is only 20% right.

The number of customers gained versus lost in the process how many customers you have lost how many new customers you have gained, so you can go for percentage so if you look at this measure it is using different kind of measure financial measure as well non financial measure both to identify how much what is the value of intellectual capital across a different functional areas so you start with finance moving to customers.

Now if you look at this three other areas that is process that is the part of process capital how many pieces you have for employees what is the IT capacity is in terms of CPU's what is the processing time right then renewal and development focus finally right what is the employee satisfaction index how much training species you have what is the percentage begins from new products okay and what is the average appetite okay that is going to say that how many products you have appetite you are coming up in the future and how many new persistence have been filed up.

So if you look at this kind a measure you find that they are basically focused on all four aspects finance customer process and renewal and development focus.

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Sample of Skandia IC Measures (from Bontis, 2001)

- Human Focus
 - managers with advanced degrees (nr)
 - annual turnover of staff (%)
 - leadership index (%)



And finally human focus so human focus if you look at it, it means that what is the average qualification of the people how many people have what kind of qualification okay so how many people are managers have advanced techniques how many master you have how many engineers you have how many MBS you have then what is the turned over a tuned over rate of the employees because turnover rates shows that yes, you company is something not good which people would like to work far right.

What is the leadership index you have I also go to measure the leadership quality of the organization and average right, so if you look at this Skandia measure of which is develop by Edwinston and reported by Bontis book it suggest that you have to adopt certain measures to basically quantify or intellectual capital base which represents your market value which is different from book value right and it is always good to go for market value because now it is people are driven by market value not book value of the company.

I am not saying that financials is the strength of a company is not something is not desirable but you will find that people would like to invest a company say for example which is growing which has a potential for growth right and that kind we identified from the intellectual base of the company so if you are find that intellectual capital of a company is good enough that you can also take a decision to invest in that kind of company okay.


Because there is the a stakes are going to be high compare to company which might be having good financial base of the book value will be reflecting good but at the same time the intellectual

capital index is not good okay. So even if the book value is higher than the market value it is not desirable situation if the market value exceeds book value then it is always good and that is why we are going to measure intellectual capital using different parameters right. So we are talked about this Skandia measures apart from this Skandia measures the other measures.

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Strengths and Weakness of the Navigator model

Strengths	Weakness
<ul style="list-style-type: none">• One of the first attempts to create a taxonomy to measure intellectual capital • Recognises the importance of<ul style="list-style-type: none">– customer capital– organisational attributes (e.g. its processes and development)in creating value for an organisation	<ul style="list-style-type: none">• Little effort to assign a monetary value to IC<ul style="list-style-type: none">– uses instead proxy measures to track trends in assumed value added • Roos et al (1997) - every company would need to have a unique understanding of which intangible assets are valuable and to identify appropriate measures • Little likelihood of creating generic measures to allow benchmarking of IC capacity across firms and industries • Not dynamic



So look at some of the what you call the strength and weakness of this model okay so this was the first attempt to create a taxonomy to measure intellectual capital at it recognize the importance of various our capital not only a financial capitals like attribute process patterns customers even social relationship in creating value for the organization the only thing is that for everything that you have to assign monetary value and sometimes it is not possible to get a monetary value you can it is very difficult to quantify certain qualitative attributes okay.

So what you do? You are going to use certain proxy measures for that so that you can add value through it okay. Roos suggest that every company need to have a unique understanding of which intangible assets are valuable and to identify appropriate measures okay. So it is very difficult to find out generic measures, to have bench marks of intellectual capital across industries, so it is going to very specific for a particular company. You cannot compare using 2 components using the same measures.


Because there is no bench mark right, so these are some of the strength and weakness of this navigator model but it is still in use and what company are doing they are using different models

to see that what kind of intellectual capital base is coming up right. so apart from this we will discuss.

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Methods on measuring IC: VAIC™ Methodology

- Ante Pulic's value added intellectual coefficient (VAIC™) is designed to assess the efficiency of key resources in business organizations (Pulic, 2000).
 - adding value and creating wealth through
 - employing physical capital
 - human capital
 - structural capital
- The key assumption is that human capital is an investment, not a cost.
- Value-added = Output – Input
- Value-added intellectual coefficient defined through its components:
 - human capital coefficient,
 - structural capital coefficient,
 - physical capital employed coefficient



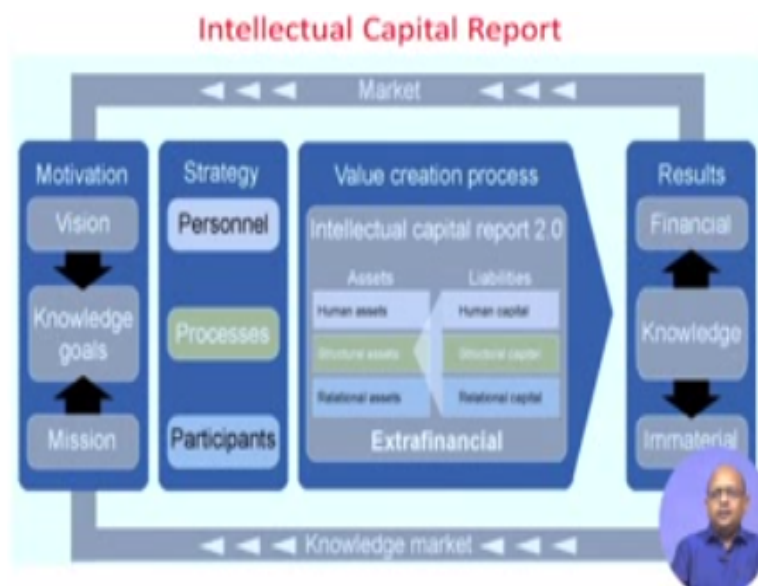
Some other model that is known as VISC which is known as value added intellectual capital okay, Ante pulic and he basically tried to look at the efficiency of the key resources in business organization and he say that you have to find out what are the various resources is add value to the business okay. So adding value and creating wealth it become more important and if you look at some of the capital that uses more or less it is same like physical capital, human capital structural capital.

And he says that human capital is an investment, it means that you need to appreciate this human capital by investing more in there HR intervenes and that is how the value of human capital appreciates. And he said that if you are going to add more value provided output is more than the input right. So value added intellectual coefficient is defined through human capital coefficient, structural capital coefficient and physical capital coefficient.

So he is going to create and see the how these capital coefficient which beta is going to predict the outcome okay, it means that you have to say that in what way, at what level these capital are going to contribute to output or the value that is been created for the organize right. It is more technical I am not going to the detail but what I am trying to tell these capitals become the independent variable and the output is the dependent major.

The value is discrete op you are using these resources to create a value, so you have to find out that the extent of which each of this capital is going to create a value for the organization.

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Now moving further the other measures also, see how the intellectual capital is reported in the organization. See here now if you look at this picture on the top you will find market, general market, down the line you will find the knowledge market. Knowledge market means that reflects your intellectual capital right and you are going to measure the results depending up on the kind of protectively process that you make that is the financial measure and you can use various financial measure.

Like return on assets, return on total assets, profits okay before tax after tax you can use a lot of furniture measured set. Then the kind of the knowledge that is created, so what is the knowledge based in terms of products process and these kinds of things that is there, something that cannot be materialized in terms of relationship and these kinds of things right so that could be the outcome.

Now this outcome is achieved through a value creation process okay and if you look at this you will find it has been identified not in financial terms but it has been identified in non financial terms. That is you have to look at the market value by using the same terms book while you using the same terms as it in liberty okay so in this case you will find that asserts are related to

new people structure and relationships and they could also be treated as liberty in depending upon other into his life style right so if you look at value creation process it takes place through this asserts okay so if assert is higher liberties is higher that is going to decide the kind of value that you going to create.

And it is an extra financial but ultimately it starts with what injectely organization looking forward to the motivation behind this kind of analysis are reporting is the vision that you are going to achieve or what is your goal what organization wants to do in future from this level where the organization wants to go suppose in 2017 you have certain goals have written as an institution now where you want to go say down the line of 5 years in 2025 what will be your position what is going to be your knowledge goal in terms of what kind of knowledge that you are going to create.

And in the process how your mission statement is going to help you to achieve it right then from there you need to develop certain strategies execution strategies to see that is value is created right then you have to see that who is going to be engaged in that who will do the precipitants stakeholders in the process and then what processes are going to adopt to identify various kind of capitals and who is going to increase their with the help of this probably you are going to see that you are going to make use of these resources for assists to create value which is not a financial measure but it is non financial measure extra financial measure okay.

So when you are going to use these non financial measure or extra financial measure and you are going to results which may be financial as well you can say yes there is intellectual capital base has gone up right and then you are going to compare it that whether your intellectual capital base has improved or appreciated over a period of time or not say for example if your intellectual capital index is x 2017 if it moves to $x1$ in 2018 and it becomes $x1+1$ in 2019 it means the total value of your intellectual capital is appreciating over the period of time and if it is not happening then it means there is something wrong with intellectual capital who is that is deprecating over a period of time if you are using a resources rescue.

And treating intellectual capital as resources so you have to see that how this resources can be utilized to create while you for the average which results in what you called better finances better knowledge management and better for the organization right so the idea of intellectual capital reporting is to find out what is the value of intellectual report sorry intellectual capital through in

certain index it could be monetary or non mandatory and see whether it is appreciating or not in the different angle right and that is I go for these kind of things thank you very much.

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