Knowledge Management
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Lecture – 22
Analysis, Design of KM System (Contd.)

Okay, so we have been discussing about the collaborative platform and that basically helps to do search content or even you can subscribe the content and get in formative relevant information which you can put to use right.

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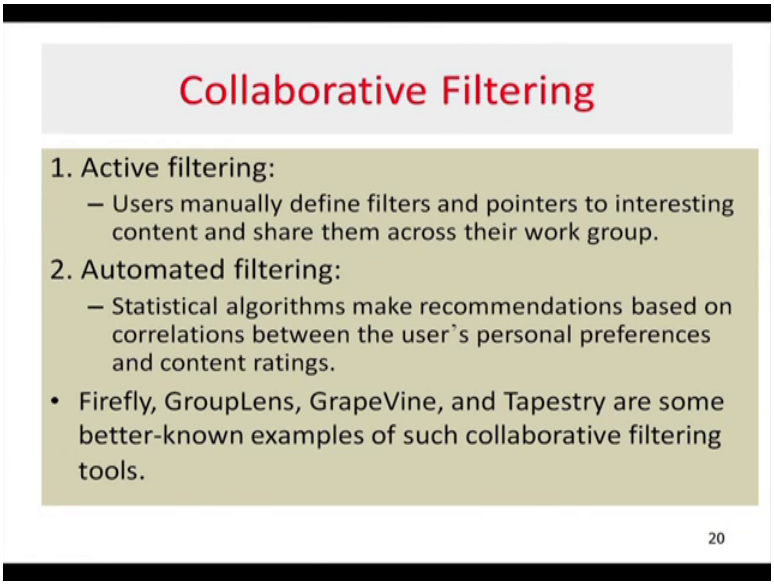

Now we go for certain filtering when it comes to collaborative filtering okay, so they are two type of filtering that can be done that is active filtering or automated filtering okay active means that you can go for manually filtering this okay depending upon the kind of interest the content that you are interested in okay that you want to share or you go for automated filtering and in case of automated filtering you use certain programs like certain algorithms is going to do certain recommendation based upon your preferences.

And concentrating for example you have seen that when you search for certain things those kind of things what happens to them that is stored by the system of the memory, so when you are going to search for something it comes out are you looking for these kind of things, so that is basically based on statistical algorithm, which is going to make recommendation based on your preferences and concentrating for example if you go for online shopping what happens.

And you have looked into some certain things based upon your interest and preference then it retains with us it is retained by the system so when you are going to open that e-commerce website those things come out right and that is based on automated filtering, so it is already filtered based upon your preference to see that whether you are interested in that particular content or not right, and a lot of basically tools and software which are available for this kind of things like Firefly, GroupLens, Grapevine okay they actually help you to go for collaborative filtering okay.

So either you can go for active filtering or you can go for automated filtering.

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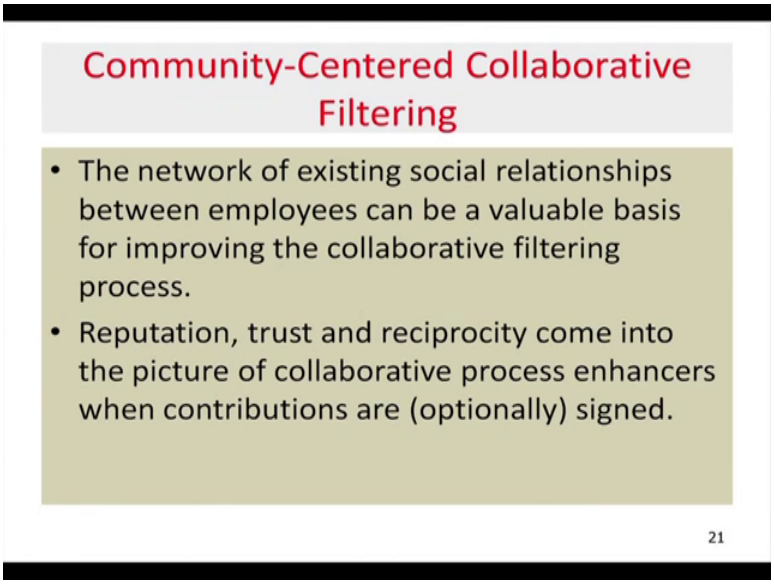

Then you can also go for content, community center filtering okay, it means you have people as a network of social relations that is built among the employees and then you can ask them to go about filtering it means that you have a good set of people who are connected through net okay or they are into a social relationship okay. And then you ask them to go for these kinds of things ok and collaborative filtering actually is very, very useful provided there is a trust reputation reprocity among the team members okay.

So if the trust reprocity reciprocity and this reputation is available among the team members who are going to collaborate into a social relationship then the country was on it is much better okay, then we would be able to find much relevant content and that it was what happens those who are going to collaborate okay. Each one of them provide their perspective and see that what kind of content is going to be relevant in a particular context right so you can also go for community centered filtering.

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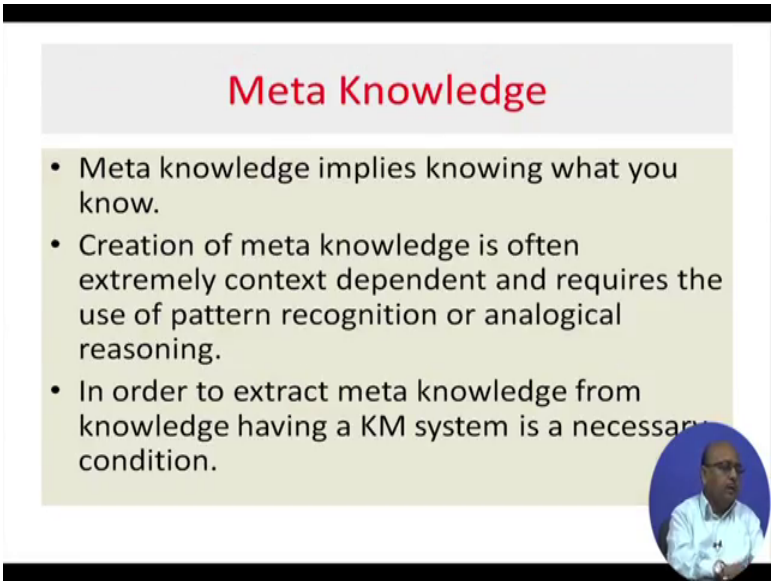

Then coming to another important issue that is Meta knowledge, what is Meta knowledge? Okay It implies knowing what you know what does it mean. Okay It means that whatever knowledge you have that how you are going to tag it with certain other things in order to do certain things so understanding that yes this is what I know and this is what I can do with this it is very, very important, because sometimes what happens we know we understand that okay, this is what we know but we do not realize that how it could be useful or how it can be put to use right.

So doing what you know is very, very important and how you are going to put it to use right, so it is very, very context dependent because you are not aware about or you are not sure about the context in which context it could be used for example you know how to write a program. But you do not know how you are going to make use it in writing a program in a particular context right so you should be able to recognize the pattern identify the trend and then see whether they are similar situations in which this kind of knowledge could be put in right and that is way and then later knowledge comes into the picture right.

So if you want to extract Meta knowledge it means realizing what you know is very, very important then it is very good for a KM system right. Then moving to another part that how we are commanded multiple degrees of context okay, what I mean by multiple degrees of context for example the context may vary right. Different people may look at the same thing from different context or perspectives right. Then how you are going to integrate and interact with different kind of things together okay.

And if you are going to accommodate different kind of context depending upon their level then it is very, very important that you are highly connected or interconnected with each other right and then you should be able to communicate effectively with each other okay, so you should have a good communication channel which facilitates good communication or rich communication okay. And then you should go for high degree of interactivity probably that helps you to accommodate different context together right.

Say if loose social bonding is there if you are not able to highly connect with each other then this kind of system is built into the game right. Not as a separate component so that you are able to be a part of it for example many companies have that Facebook's, Facebook page right. Now the thing is that whether it is a part of the system or with that it is separate link that takes you to the Facebook page right if it is a part of the system then you are automatically connect it to this one okay.

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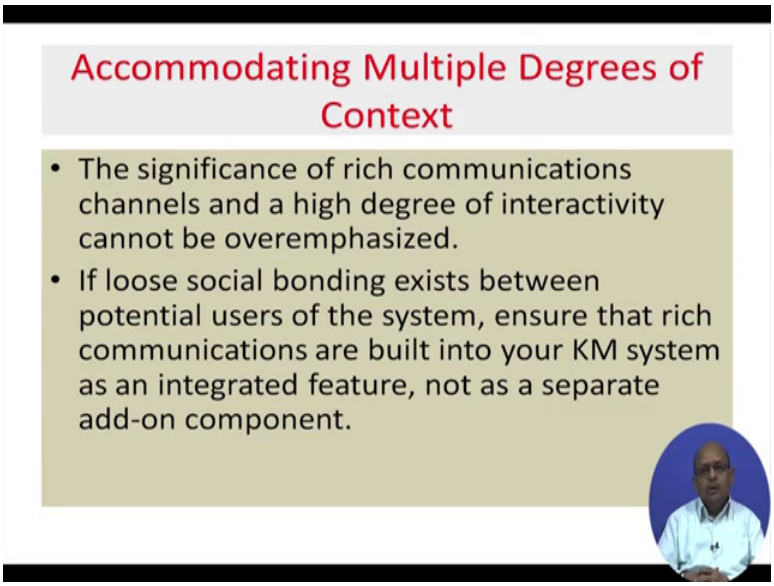

And you can communicate through this if it is not then you go to the system and then try to connect it right in order to solve certain problems right so it is very important to see that how can I accommodate various degree of content.

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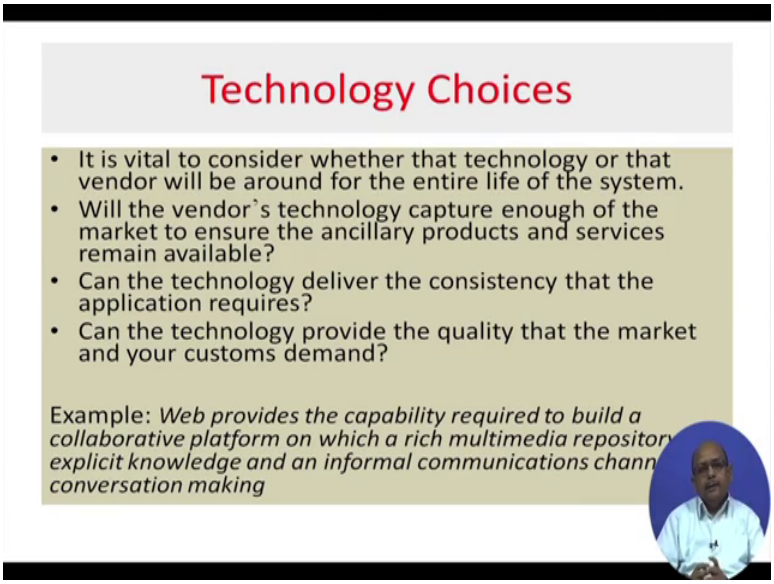

Then another important is what kind of technology choices you have when I am talking about technology choices it is very, very important to understand that. The technology is basically the lifeline of the system okay. And then you need to ensure that it will go by within to create the system is going to be useful and effective okay Then you have to see that if you are going to buy it ok this technology that you are going to have is very, very robust okay.

And what kind of products and services are associated with this particular technology and whether it is going to be provide relevant information consistently with the kind of information that is going to be there is going to be valid in the particular context okay, so there are lot of issues related to this one and the best choice today is a web based applications, web that is because that is help that is going to help you to interact in related this either that is how you going to create infrastructure Arc.

You can also have a blue print for the knowledge management systems okay because web provides the capability to have a collaborative platform, where you can have bridge multimedia repositories for explicit knowledge or even informational communication channel also for conversation also, for example we have a Internet portal right which provides a lot a lot of information related to different capabilities, so if you go to a faculty web page you can find out what he is doing.

And there is a link which provide the kind of research and training that he is doing okay and the articles which is uploaded on the system right so these repositories are available now apart from this formal explicit knowledge you can also have Blogs okay where people are going to communicate informally about how to improve about the system how to go about certain things which is going to improve their

productivity and effectivity and that is basically informing communication channel.

So that that is where you can converse informally with your colleagues your seniors with others and that is going to very, very helpful so if you are going for a web based technology it is always better compared to any other technology.

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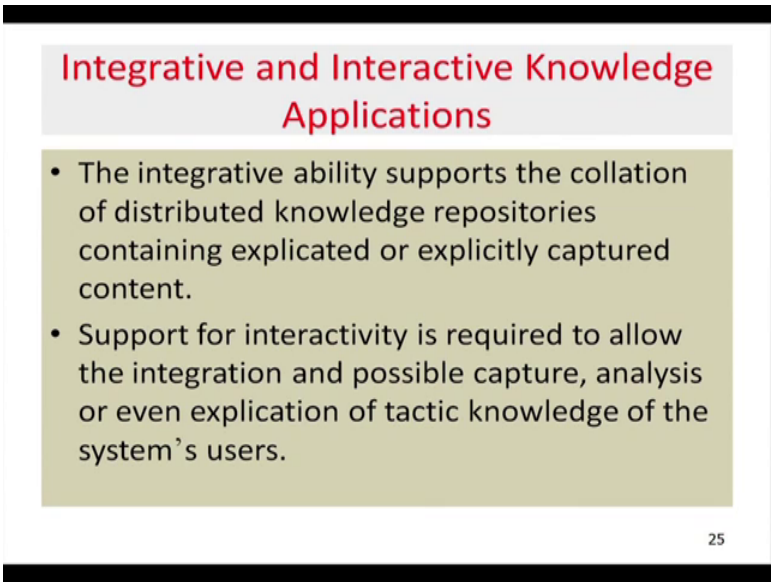

Then another issue is with need to ensure that this web based technology is going to be very, very integrative and interactive in itself right because if it is integrative then you can go for collaborating different set of knowledge that is distributed across repositories okay, whether it is available in explicit form or not right. Similarly you have to see that how interactive it is okay whether this allow you to relate yourself in order to capture in lies or even explicate tacit knowledge of the systems users or not.

So make sure that the KM system if it is based on a web based technology is very, very integrated it means it has distributed knowledge repositories in explicit form. Similarly it also has a system where people are allowed to capture tacit knowledge from the users of the system right for example even email could be a good way to capture tacit knowledge right. For example if you have some problem you send a mail to them and it suggest you how to do it so based on this suggestions you go through it so that tacit knowledge intronize then you make use of it to perform your job right.

So that is how you can explicate tacit knowledge of the users to perform effectively so make sure that these two criteria are met that is it is integrated and interactive as well see that is how it happens. So if you have a integrative and interactive system then it helps you to evaluate both interpret and adopt

knowledge to new context right, in the same continuation that I have talked about you see that these are the repositories that the input is coming okay.

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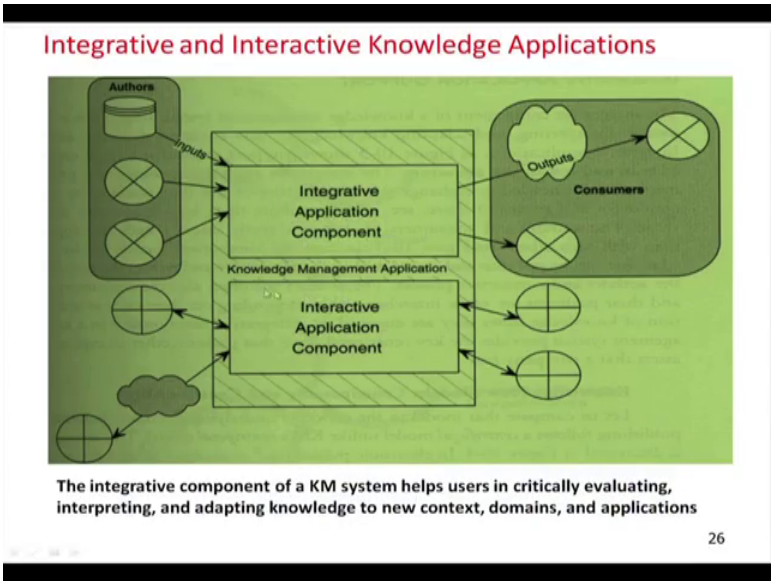

Then this is a KM system which is which has a integrated application component it also has a interactive component so that is how see it is a two way process you see. And it is a one way process it means that input is being put into the repositories which is going to be used the other computers and here you have users systems users who can interact with the system right. And then what ever based on these interactions they adopt knowledge and which could be used to new context domains and that can be applied in different settings then how the knowledge moves okay.

Now if you look at the new system we have talked about that it should be integrating and interactive it means the knowledge repositories would be developed in such a way so that people can interact with this not only make use of the knowledge that is there in the system.

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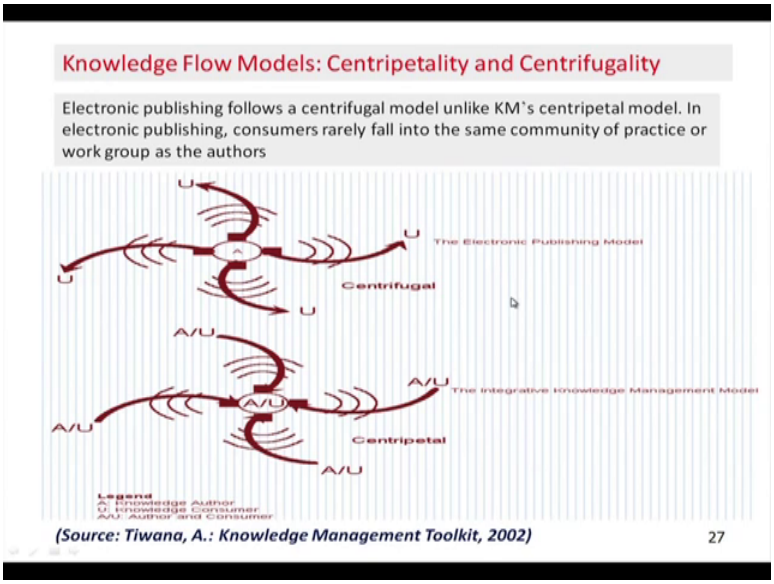

But if you look at this it says that. How the knowledge flows right. That two kind of forces if you remember that is start is one is centripetal and the other is centrifugal, what does it mean if it is centrifugal it means what okay. And the example that if that is given here is a electronic publishing model okay in case of in electronic publishing mortal what happens it is more centripetal force centripetal means what if you look at this figure what does it show from here the knowledge is coming out okay.

There is a center and this is moving out, okay so this is what we know centripetal, centrifugal. In this case of centripetal what happens knowledge is moving in okay, so it is better to have a knowledge management system integrative system which actually allows flow of knowledge from outside to inside? And similarly it should be also centripetal in the sense that it should be able to you should be able to extract knowledge out of the system right.

So A it is here nothing else but it is the knowledge author and U is the consumers okay, so from author to consumer it is going out it is okay. There is a book from where the knowledge is being used by the consumers and here the author and the consumer both are here and so they interact and relate, so this is related to the integrated component and this is related to interactive component okay. So if it is centripetal then you have both the cap ability where you go for integrity as well as interactive knowledge right.

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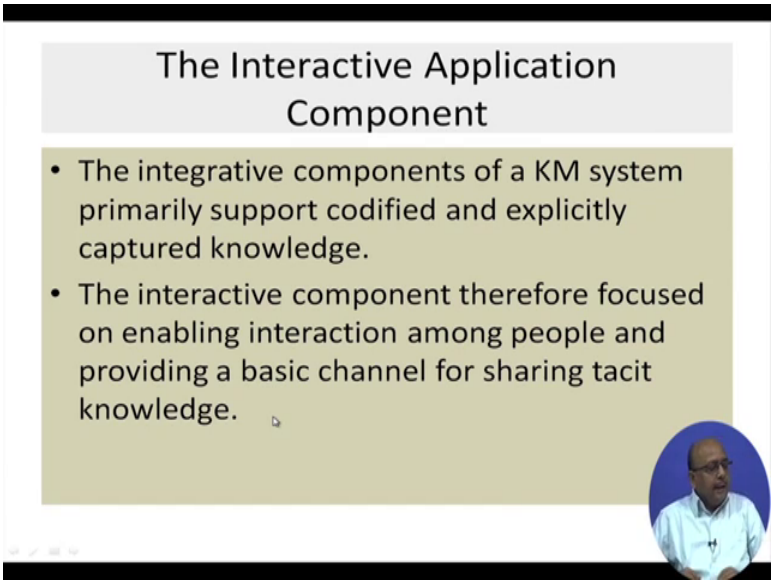

So interactive application component is very, very important okay it also supports basically the both kind of knowledge codified and explicit knowledge while in integrative support only explicit knowledge okay and that is why you should focus more on having a system which is interactive in nature right because it provides you a channel to share knowledge across people okay.

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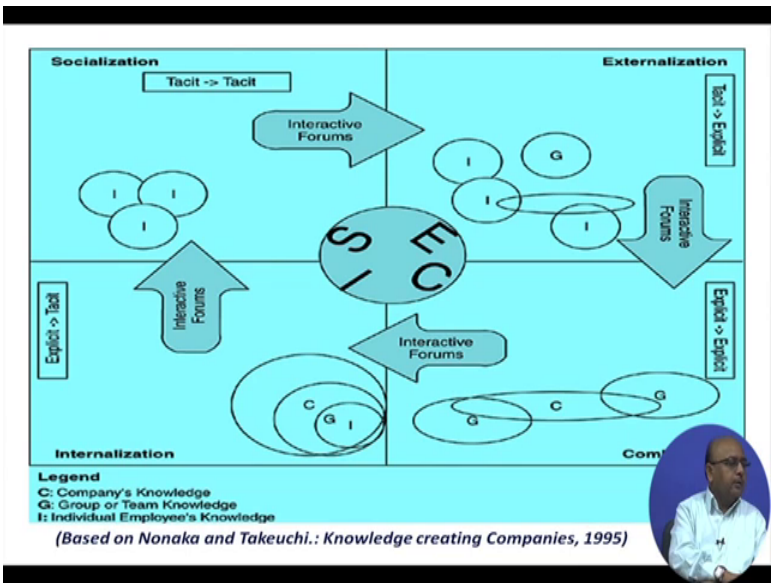

Then moving to see, I have already talked about it this model that is based on Nonaka and Takeuchi in that he wrote in his book sorry his article that was published in Harvard Business Review, knowledge creating company. Now if you look at this knowledge creating companies we have already talked about how the knowledge transform is transformed from tacit to explicit or otherwise known and then we talk about four different kind of modes through which it happened right.

Socialization where you go for personalized knowledge transfer tacit to tacit, externalize that is tacit to Explicit combination explicit to explicit and that is initialization where you do something then come to know about something and that is tacit knowledge right, now if you look at this how we can make use of it see there are different kinds of things okay. Here this is based on individual from one individual moving to another individual so the focus is more on interactive forums right if you look at this okay it is moving from individuals group okay tacit to explicit.

So it is more interactive forums and here also it is from groups to company so you are using different kind of things from company to groups or groups to companies that is again interactive and here it is interactive in the sense that the center of it is the group in the individual and the peripheral move to the company right, so now if you look at this we are going to use different kind of combinations to ensure that how we are going for interactive knowledge.

So that in what way you are going to have or develop interactive component in the knowledge management system so that knowledge transform transformed into different from tacit to tacit, explicit to tacit or explicit to explicit right, so you need to have more interactive component and that is how it happens see S E C I means for Socialization, Externalization, Combination and Internalization. So these are the processes where you can see the kind of interaction that happens between the individuals, group and their companies' right.

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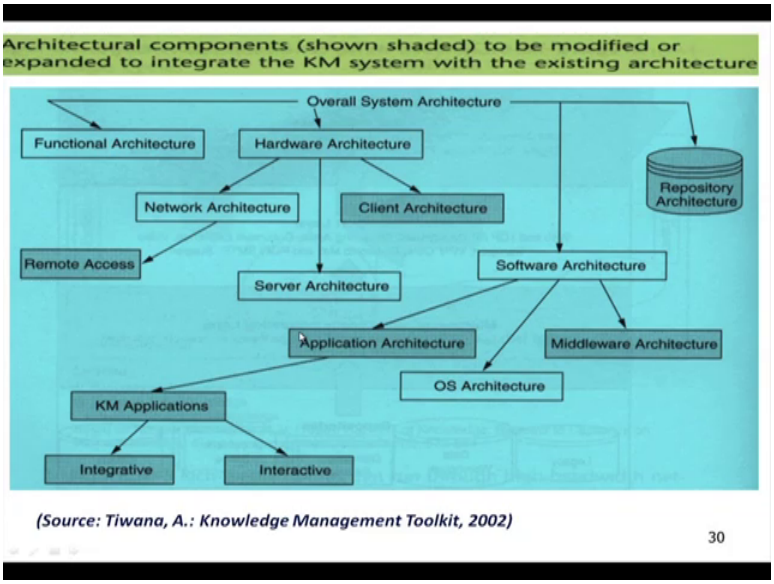

And then see, what happened see this is architecture basically it is a architectural component that is modified in order to see that it is not really integrated but interactive as well see this is the overall

system see this is the hardware part, this is the functional architecture this is the network architecture, this is a client architecture, so from hardware you have server and here the repositories are there right and then you have software and then you have hardware, so this is related to hardware part this is related to software part okay.

Then from here Application architecture you have applications which is going to be integrative and interactive and software you have Middleware and Application software and operating systems right and then you have functional architecture okay so you see that how this is related okay. And this need to be modified depending upon whether you want to have integrated system or interactive systems, if this kind of system it is both integrative and interactive also right, so KM Application has to be not only integrative but interactive in nature.

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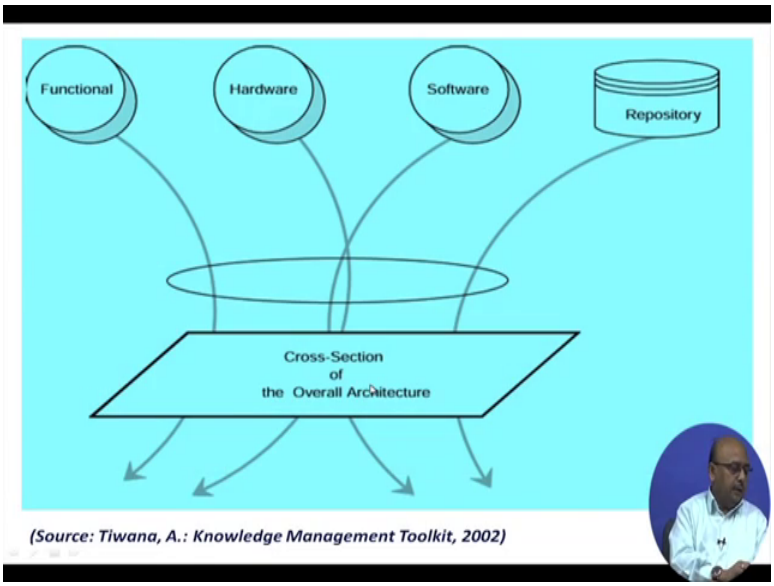

See how it happens, so you have functional hardware and software these are the repositories and this is a system through which they are interacted and related okay. To the cross section of the overall architecture and then you have to see that where they want to make integrative or interactive right.

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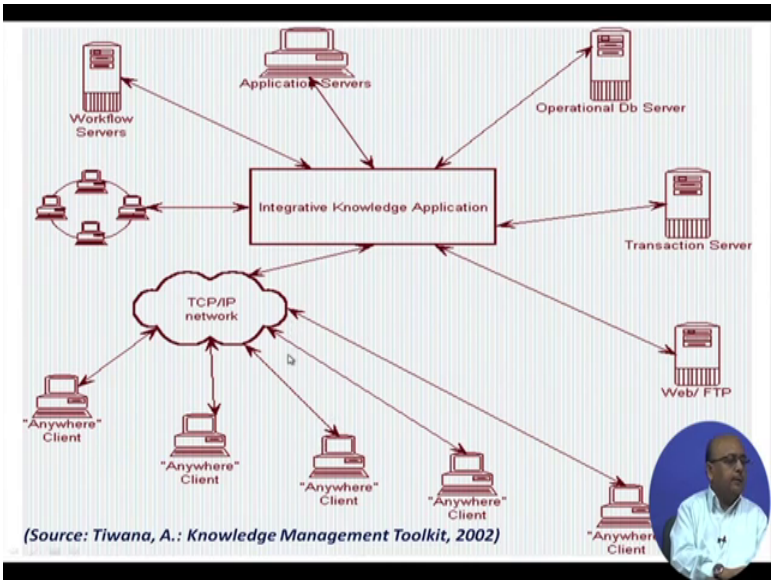

See this, this is the integrated application connected through a TCP/IP network and this is a transaction server, this is operational database server, there is application server, there is a workflow servers right, these are the end users where people are there okay and this is connected through, client's different client this is connected with this one, so this is a integrated knowledge application okay which is connected through various servers okay and also the users right.

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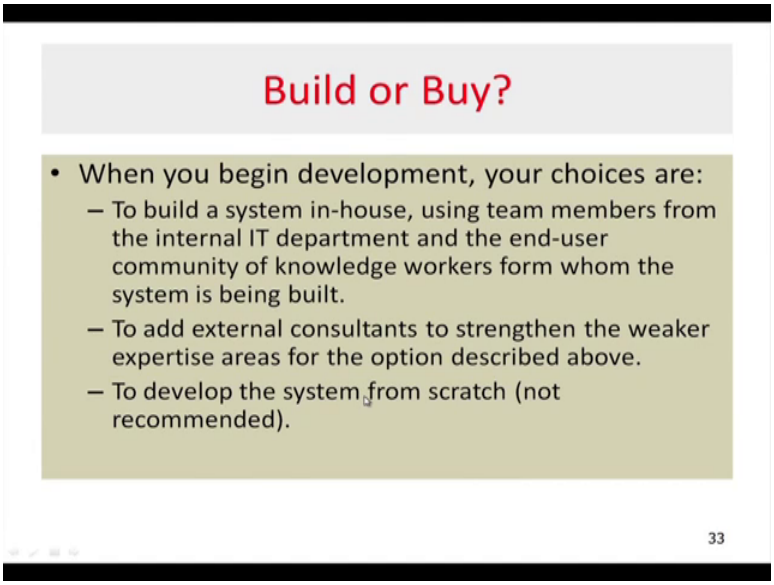

Another issue is to relate to build or buy okay, when you are going to design a KM architecture okay you have people from the IT systems coming to users and also others then have to see that whether you need to have external, external consultants or not depending upon the requirement okay and then you are going to develop the system from this page okay, provided you do not have any kind of IT system in place or no ERP System, but if you have some kind of system then you can build upon that right.

Then whether you are going to outsource this kind of system or you are going to develop in in-house like when we developed this ERP system it was a in-house okay because we had a functional expertise in the area we had people we had experts within the system which tried to develop it and then kept on modifying it depending upon the requirement right so you have to talk to the consultant to see whether you go for an after sales solution you are going to buy the softwares like SIP, ERP or what Oracle whatever it is there is software tools that is available for integration.

Whether going to buy them from our out whether that particular software or the tool is going to meet the requirement of your organization or not you must make sure that it is going to be applied and customize depending upon your requirements right or you can go for buying certain parts or then building certain parts or you can use a never approach right okay.

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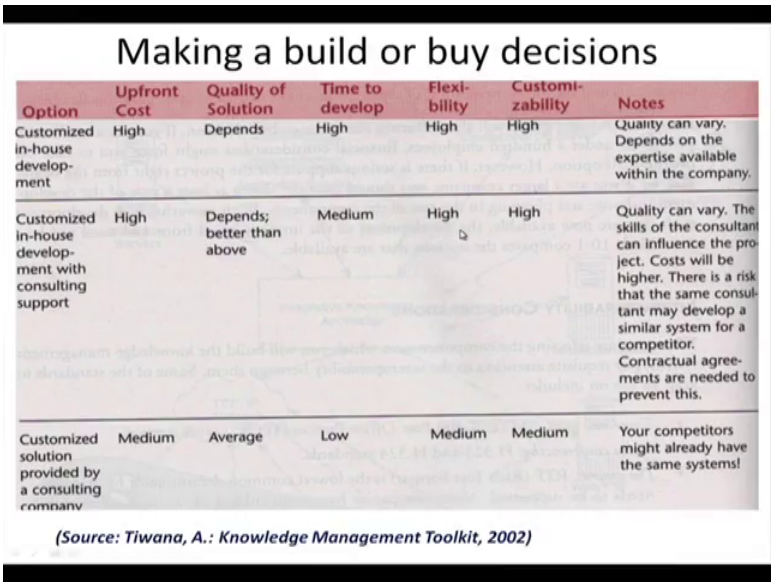

Now look at the various approaches that can be followed if you are going to customize in-house upfront cost may be high starting cost may be very high solution depends okay, upon the requirement time taken is very, very high flexibility, but it is very, very flexible highly flexible and customizable, customizability also high because you know understand the requirement and accordingly you can develop it right, but if you are going to have a customize one with the a consultant support again the class is good to a high, but the time taken will be less more flexibility in customizability very, very high but quality may vary right here.

And the cost may be also very high and there are certain risk associated with that one but if you are

going for customized solution provided by a consultant then. Cost may be less solution will be average time will be low but flexibility and other things with be less okay but you might competitors may also be having the same kind of system, so it does not provide you any competitive advantage suppose development by the end users themselves those are going to use it then. The cost other things are low okay but flexibility is very high but it is not recommended because they are the experts right.

But if you are going for a stand of standard off the shell solutions, then cost is less solution may be high but you do not take any time for develop but flexibility and customizability is less, though the investment is less but you know that other issues are there but for going for customized off-the-shelf solution okay, you can look at it how it happens okay. And this should be your choice because if you are going for customized off-the-shelf solution the cost would be low, solution is good okay, you take less time to double of the system flexibility and other things are also average.

And if we are going for completely off the shelf solution then the cost is low, solution is high but this flexibility other things are very, very high and that should be your first choice so depending upon your requirement you are going to decide whether you are going to build in or buy in.

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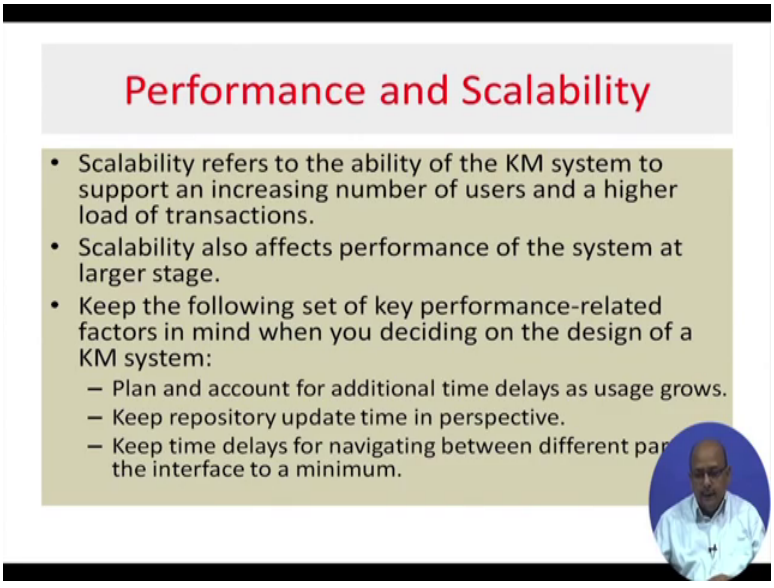

Another issue that is related to the KM System is its performance and scalability. Suppose the number of user's increases or there is going to more and more transactions in the future whether your system is going to sustain that or not so that is related to scalability resources. You have a high level of scalability it means your performance is going to be good okay, even in the future so what you need to do is that when you are going to look into the performance related criteria in mind make sure that the plan

account of additional time delays are there okay.

You have the repositories which is updated in perspective it means your knowledge base is very, very updated and then you have a system in place which is good and there is no time for the navigation delay in time when they were getting different parts of the system right. And that is going to decide about the performance so scalability means that increasing the number of users can use it, maintaining the same performance level okay and how you are going to gage the performance make sure that there is no time delays, people are able to use it the knowledge system is updated on a regular basis right and you have better user interface.

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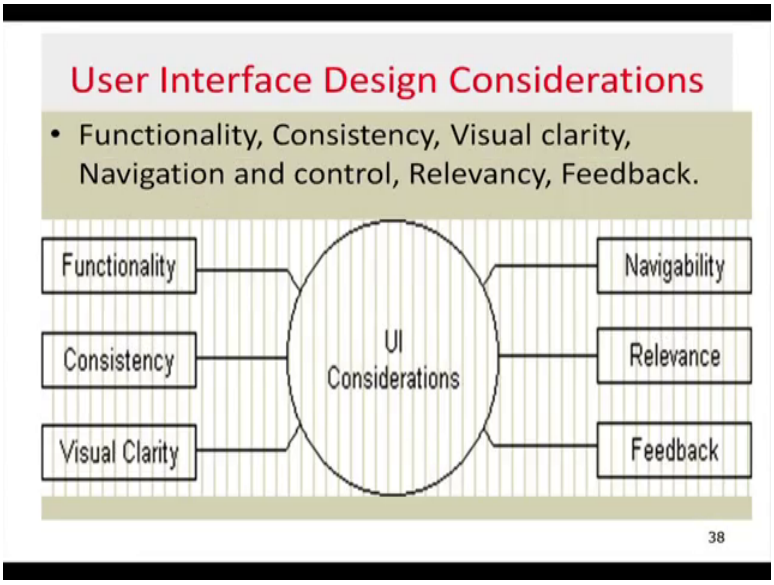

See these are the considerations functional considerations for this functionality consistency and visual clarity, these are the user interface considerations and that is related to navigability, relevance, and feedback. It means the user must find it useful to get relevant or consistent information should be clear to them, they would be able to navigate navigate means that it has easy to use or access, it should be very, very relevant information that they are going to have and then they should be able to get feedback out of the system.

Right so these are their criteria so when you are going to design a system especially, for the users make sure that you design a KM system which meet these criteria or the characteristics.

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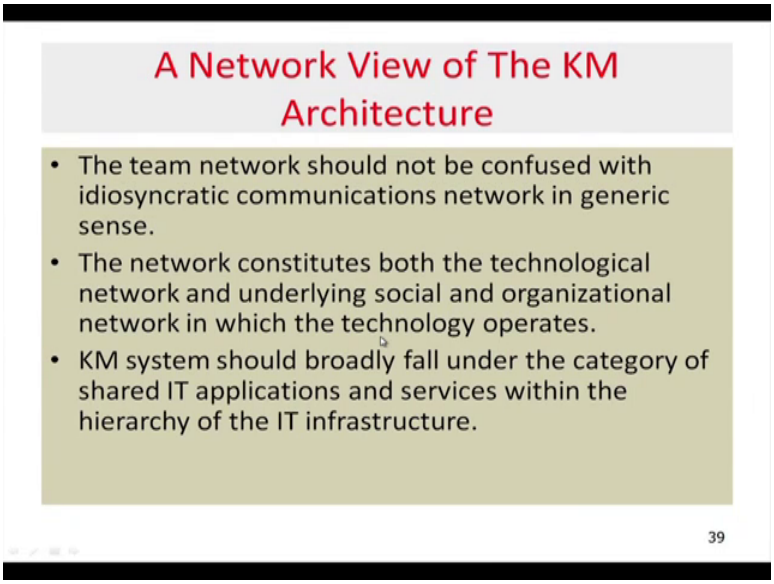

Now look at another issue that is very, very important the network of your because basically you are going to develop a system which is connected to networks basically communication networks okay. It is not a team network or people are going to interact and relate with each other but it is a communication network built upon IT system in general sense right, so if you are going to have a network system which has three major characteristics it has a technological network, it has a social network and it also has a technological network which is built upon a technology platform right.

So you need to ensure that this technology platform is are the network which is based on these three parameters technology society organization and you are going to use a technology platform it is better really integrated, so this network must be able to support the communication across these pieces right. And then you have to see that how you are going to apply I.T. systems application services within the hierarchy of the IT infrastructure that is very, very important.

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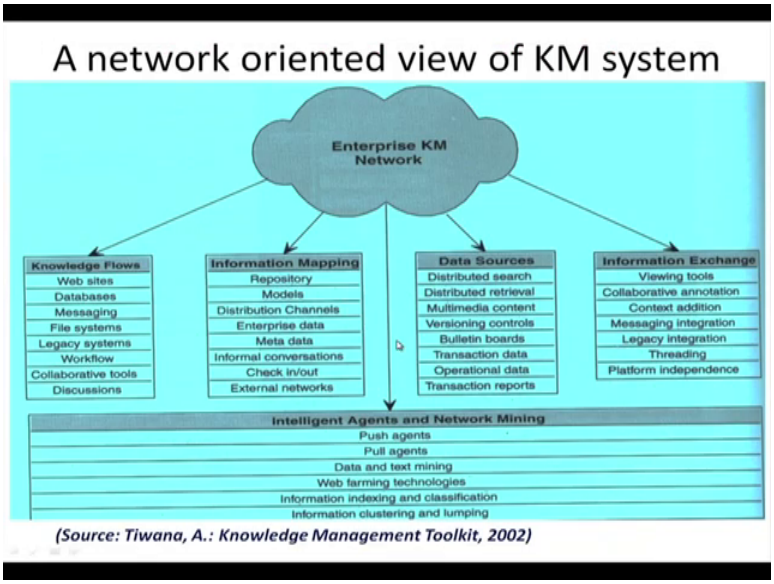

Now if you look at this that is what we are going to discuss today see what happens this is a knowledge network Enterprise KM system. This talks about how the knowledge flows okay through website, databases, messages, file systems, legacy systems, workflows, collaborative tools and discussions. So these are the tools through which the knowledge flows from the enterprise knowledge management system to different to stakeholders right, through different means okay.

Like websites are the communication carriers, their databases are the repositories, messages the context through which information is send, in the file systems like how the systems is organized, then how the system is integrated with other systems that is what we know legacy system like how your ERP system is connected or integrated with your accounting system right, existing accounting system and how the workflows okay and what the various collaborative tools that is used and then how discussion takes place.

So here you look at it that how the enterprise knowledge system is connected through the knowledge flows, then the next part and then when it comes to knowledge happening you can see that how the knowledge is being mapped into system, you have repositories, you have models, distributed channels, enterprise data, Meta data, right, you have informal formal conversations, check in check out, what kind of data's should be kept and what not be kept then the how this is connected to links internal networks right sorry external networks.

Then come to the data sources now if you look at it the data is coming from where it is coming from the distributed search retrieval that it could be multimedia content right, you have videos images and

other forms of multimedia which where the content is available or it is versioning controls, versioning of what version it is because the version gets updated over a period of time. Then you have bulletin boards okay like our digital white boards flash okay board. All these kind of things that is used by them the organization institute the then your transaction data how the digital has been transacted okay.

What kind of data is being transacted through different sources within the organization, then the operational data, how it is being shared okay what kind of operational data is going to be put into the repositories, okay and the various reports that is going to be there and how you going to put these data into the repositories, then the last part is related to information exchange that how the information is going to be communicated, you have viewing tools, collaborations, context addition, messaging integration, legacy integration, Threading, how one thing leads to another one and then you how independent the platform is right.

Irrespective of the independence platform you make sure that people are able to work across platforms okay, and able to integrate the data and sources together. They need to also related to what you call will push in the intelligent agents and network mining, how the network can be used like data mining, we have web farming technologies, information indexing and classification, how the information is indexed and classified, how the information the clustered and lumped, so that when you search for relevant information it is possible for you to get it right.

So this is the network oriented view of knowledge and system which talks about knowledge flow information map, how what are the data sources how information should be communicated and how we go about my mining in the information.

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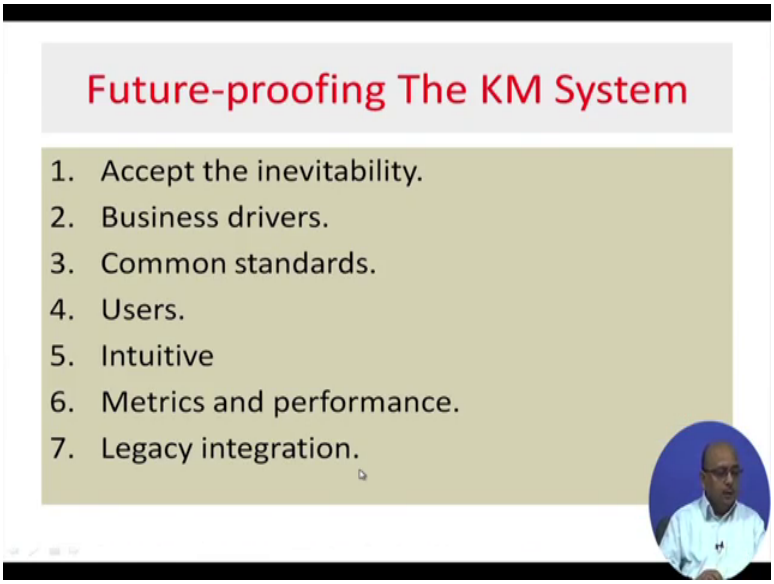

In the last part we are going to discuss that how we are going to have a very future-proof knowledge when I am system it is very important in the sense that in knowledge management system should be very very robust, so when you are going to design a knowledge management blueprint. We have also looked into various considerations that what kind of system you have whether it should be integrated, interactive, what kind of components you should have, how the project is to be connected, what are the issues related to repositories okay.

So in order to ensure that you have a viable KM system which is going to work in future in two and it is going to meet the criteria of performance in a scalability both you make sure that your system is ready for the future, right, it is very, very important and it is managed and maintained well, it is operated on a timely basis okay. So that you have relevant knowledge base in your system. Now when it comes to evaluating make sure that sometimes it may happen right, it is not working so sometimes inevitably and something that is unavoidable to make sure that there sometimes happen that there are going to be certain things which cannot be avoided okay.

So you accept it because no system is going to be one hundred percent or spool proof you should be able to identify the loopholes in the system and when and how to are going to embrace that right, so accept the inevitable something that is going to be unavoidable, but you must be able to understand that how you are going to avoid it, second thing that it should be treated as a business right, it means it must be aligned with the knowledge management system, I mean your corporate strategy and make sure that the reason for having a knowledge management system is related to achieving the goals and objectives of the organization okay.

It is not something of fired are something that is in a fashion that you want to have, but it must be related because it requires cost, it requires resources to make sure that it is driven by the business right and then you have a common standards for across the board across vertical and horizontal and ensure that everybody is able to use and have access to use. Then you must also keep in mind the users, the end users because any system that is meant, is meant for the users because ultimately it is the users are the customers internal and external who are going to make use of the system.

So they should be in a poison to retrieve and apply the information in the context, relevant context so that it is useful to them okay. Another important issue is that it could also have some form of not only explicit knowledge, but tacit knowledge that is more intuitive because when you are going to going for rational decisions okay. You need more explicit knowledge but due to lack of explicit knowledge in certain domain areas okay make sure that people are going to apply and take certain intuitive decisions which could turn out to be a good decision as well right.

So make sure that it is help you to be more intuitive means more innovative and creative in their approach okay, then another issue is very, very important in that once you develop a KM system you should be able to ensure that how you are going to evaluate it okay. Based on performance scalability, so you can develop certain evaluation tools for Knowledge Management for certain metrics with the help of which you can find out how effective and good the knowledge management system is okay, so the criteria could be stakeholders, users okay.

It could whether it is able to drive business whether it is able to meet performance criteria, whether it is able to meet profit criteria with the kind of innovations, trademarks, patterns, trade secrets, we have come out with so that could be any useful indicator okay which is going to tell you that whether the KM system is good or not okay. And finally your KM systems should be able to integrate well with other systems that you have in the organization like you have the ERP system, make sure that ERP system is well integrated with H.R. systems or the accounting systems right.

And that is how we can make sure that this is the blueprint that you are going to design for the KM System is very, very effective and successful and it meets its objective thank you very much.