

**Knowledge Management**  
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**Lecture 08**  
**KM Cycle (Contd.)**

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**KNOWLEDGE CREATION**

- KM is not a technology; it is an activity enabled by technology and produced by people
- An alternative way of creating knowledge is via teamwork
- A team compares job experience to job outcome—translates experience into knowledge
- Such newly acquired knowledge is carried to the next job
- Maturation over time with a specific job turns experience into expertise

Okay, so next in that we are going to discuss after talking about knowledge management cycle is, knowledge creation because that is the most important stage in the knowledge management cycle. So, you are going to a more discussion on knowledge management creation here. Knowledge management creation means that acquiring and creating new knowledge because unless you are able to create new knowledge you are not going to compete.

So, the idea is that it is better to create more and more knowledge to have a competitive edge. When I am talking about knowledge creation we are going to discuss that how knowledge is created through different tools and techniques. What are the impediments and how we are going to create your knowledge using different sources?

So, to start with we are going to discuss certain points related to knowledge creation that knowledge creation is the one thing that you need to understand knowledge creation depends on people; because ultimately knowledge resides with the people, okay. Even explicit form of knowledge is earlier used to be there with the people only.

Because once the tacit knowledge is there and then people transform the tacit form into explicit form then only it is available in explicit form. Unless you capture certain processes, how you can have explicit knowledge? Or unless a person writes his experiences and shares his experiences in documented form you cannot have an explicit knowledge, right.

So, we need to give more importance to the people and we need to enable a system and culture so that people are ready to have or create more and more knowledge. What is the role of the technology in the process? Technology is an enabler, so, we cannot equate knowledge management system with the technology, okay.

Knowledge management system mostly depends upon the people and the processes, okay. Technology do play a role but only to the extent that it is able to help you to store or archive the knowledge and help you in the retrieval of the knowledge. But, ultimately, when it comes to creation and application, it is the people who are going to make use of the knowledge, right.

So, if you look at the first point it says KM is not a technology, yes? KM in, Technology has only 20% role playing in KM system. The 80% is the people in the processes, okay. How this knowledge is created? We have already talked about it that knowledge is created by team work, okay; because teamwork you are going to pool resources knowledge with each other and you share knowledge with each other.

And that is how you are going to create knowledge through teamwork, right. The team compares job experiences to job outcomes, translate experiences into the knowledge. So, when you are working as a team what happens? You get to know about what others have in terms of experiences and knowledge and you tried to pool these things the experiences that you have into knowledge.

Somebody saying something in a particular team, no, this is to be done in this way. So, internalize it and then try to make use of it. You say something and other person does it similar process and people internalize it and try to make use of it. And collectively pool your resources in a team and try to see how things can be done, okay.

So, whatever the knowledge that is generated through teamwork using this process of collaboration and sharing, okay, it could be documented in explicit form, so that when this team or any other team is going to do similar task or even different task also, they can use this

knowledge which is there in documented form because once the knowledge acquired by the team they can make use of this knowledge to solve similar problems.

Say, for example there is a team of software people and who are going to write a code for a company related to say sales. Suppose they want to see the, track the sales and do all kinds of things related to this. Or suppose there is a HR manager who wants to develop software, to make sure that the recruitment system is effective, okay.

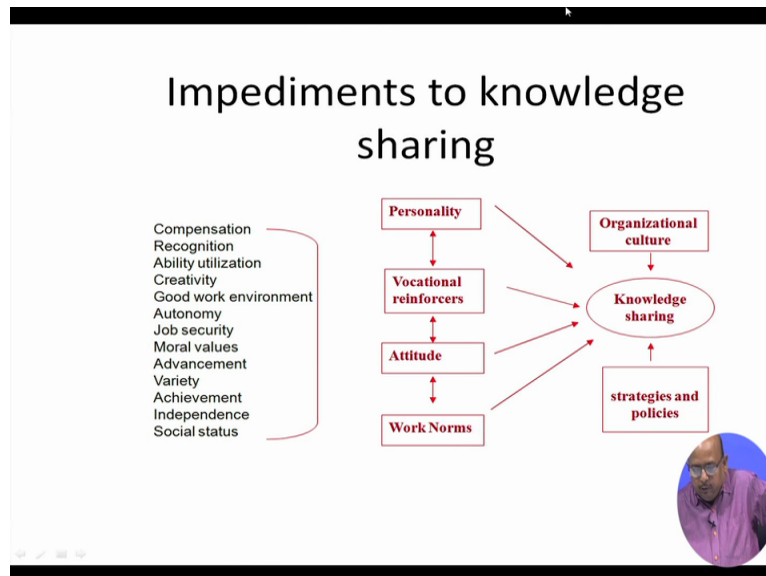
Now, I am giving two different examples of two different fields. So, if software people are going to work together as a team okay and then you have regular programmer, you have coders, you have analysts, okay. You have evaluators and assessors forming the team of group of people who are working for in a particular project, okay for a client.

Now, all these people work together. So, in the process, they also share their knowledge with each other. So, in the process they generate lot of knowledge, new knowledge also. That is how project could be rated. The one person is accessing and also come to know how assessment is done; another person is evaluating or testing that product for the company; they get feedback and based on that feedback, you are going to work.

Again, so in the process, what happens you acquire, you generate new knowledge. So, this new knowledge that you have acquired through this process of team learning could be used by you when you are going to take up similar projects, okay. That is how this new knowledge is carried to the next job, okay. And then with, keep on acquiring such knowledge team.

What actually happens? You become experts, maturation over time with a specific job turns experience, by doing, keep on doing similar things means then you become a good expert, a good programmer, a good analyst or a good assessor, right. And that is how the knowledge is created.

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Now, what are the barriers to knowledge sharing? Actually when you are working either as an individual or in an organisation, we find that, people are not ready to share the knowledge, okay. What are the impediments? Impediments means that those factors which create a barrier or obstacle in sharing of knowledge; because even if you are working as a team or as a individual, sharing your knowledge, you do not share easily knowledge with each other.

You find examples in an organisation where people are not ready to share their knowledge with the other person. Even the seniors are not ready to share not knowledge with their supervisors because they perceive some kind of threat or risk associated with that. Say, for example, if I share my knowledge with that person what will happen to me, okay.

So, what you need to do, you need to create culture and climate in the organization, so that people are ready to share their knowledge. Now if you look at this, it talks about certain factors relating to HR, individual related factors and organisation related factors. And we need to look into these factors so that we are in a position to see that: what are the various barriers which are creating certain problems or hurdles and how to avoid them, so that people are ready to share their knowledge.

Now, when it comes to HR related practices, a number of factors which are given here, where which could be utilised by HR to see that it gives a base so that people are motivated to share their knowledge, right. Like you need to link compensation, you need to recognise those people who are sharing their knowledge. Like you can have an announcement that okay, every month you are going to have knowledge champion.

Who, the person who is going to share maximum knowledge which is going to be useful would be called Knowledge Champion? And that is how you are going to recognise, okay. So, you make sure that people are able to utilise their knowledge. What happens in the most of the cases? People have lot of knowledge but organisation does not provide them opportunity to make use of that.

So, people are not able to utilise their knowledge. Then, make sure that people are creative. You allow them or create opportunities for them to be creative and innovative. You need to develop good work environment that is very, very important. Then, you also need to look into certain job related factors. You provide them enough autonomy is there.

Let them decide how the how they are going to do their work. Do not dictate terms all the time that is related to autonomy. So, you empower them to the extent possible, okay within the broader framework so that people decide how to do the job, notice that every time you decide or you dictate terms as a senior, this is how you are going to do this work.

So, autonomy yes very important okay. But it does not mean that you give them full autonomy, autonomy to the extent possible so that in the broader framework of reference, people are going to perform their job and job security. Of course and nowadays we cannot, we cannot expect this kind of job security. But if you provide this kind of security, even on a relatively permanent basis, it is good because it is going to help, people to think about the job and not about the other issues, okay.

So, I mean the other factors of Maslow's terms, we are not going to look into the lower level, lower level, hygiene factor but he is going to be guided by higher level motivating factors. Then, you also relate to with advancement of the person, okay. Then, you link it with those you are going to share knowledge, okay. They would be recognized;

They would get bonuses or they would be getting more advancement in the career provided whatever knowledge they are creating is going to be useful. So, you can link it with the advancement scheme. And then, you make sure that people are ready to use different kind of skills they have. So, he talks about skill variety, okay.

And whenever they achieve certain things, you must ensure that this achievement is lauded. You give them enough independence, okay and also create a status for such people who are really

creative, innovative and come out with generating new ideas, okay so that they are going to be motivated. So, when I am talking about this kind of HR practices which is to be applied in the organization.

This gives basis for the organization so that people ready to share their knowledge. If you are not going to create these basic conditions probably, people will not be motivated, encouraged to come out with what they know and share it with each other. These are the HR related factors. Now I am coming to the next level of factors.

That is individual related factors, okay like personality. Some people have that kind of attitude or interest or personality where they are ready to share knowledge. But some people or not that forward coming and they do not share their knowledge with each other like you have introvert and extrovert people.

Extrovert people easily come forward and share their knowledge when compared to introvert. So, we talk about type A and type B personality. So, type A personality actually are forward coming extrovert; but they do not have the depth of knowledge like type B personality, sorry, type B are more extrovert compared to type A. Type A people are introvert but they have more knowledge, okay; while type B people are extrovert, but they have less knowledge.

The idea, the thing is type A people are more committed, okay and they want more advancement okay. They want to create more and more in the process okay, they become more introvert. But type B people are happy go lucky kind of person. They are more sociable. So, what we need to see that there is a contradiction between the personality and knowledge.

Type A people having more knowledge but more introvert; type B people having less knowledge but less more extroverts. So, we need to see that how you are going to work out to ensure that people are having more knowledge are readily to come out. And for that you need to create conditions for them to come out or share their knowledge.

Then, vocational reinforces? What you like to do, in terms of attitude and interest? And if you are given a job of your liking, your interest, based on your attitude, probably, you will be in a better position to do it or share it. And then, your attitude; what kind of attitude you have? when I am talking about attitude, is that whether you have that kind of a framework and I am talking about cognitive and effective framework, which motivates you to share your knowledge or not.

See, if you have negative attitude then, what will happen you will try to hold it back. But if you have a positive attitude, then, you will readily share your knowledge, okay. So, when you are talking about attitude, if you have a hold back attitude, then, you are going to hold the information with you. And you are not going to share it with others.

But if you are more positive attitude probably you will be more willingly and ready to share the knowledge with others; and then, what norms? What kind of norms or values are followed or spouse by the organization. That is very, very important. So, if you have developed certain systems and practices in the organisation through which you make it mandatory to share information knowledge with each other across levels vertically and horizontally, both.

Then, it is good because it helps and facilitates knowledge sharing across individuals, groups and the teams, okay. Now, the last part is related to organisational related factors. Have you made it a part of your policy that okay, that we need to share their knowledge with each other or whether you have try to create a culture in the organisation where people readily share their knowledge, okay.

If you have developed that kind of entrepreneurial culture, collaborative culture or family oriented culture, probably, you find that, yes; people are ready to share knowledge with each other. But if you have not created that kind of culture, the best culture that you can say is the client culture, in client culture, the people who work like a family.

In a family, people share the information with each other. So, for acting as a family man in organisation you will share information with each other. But if you develop a market culture, probably, that could not be more important or you develop a in a tribunal culture, in that case also, say, yes it happens.

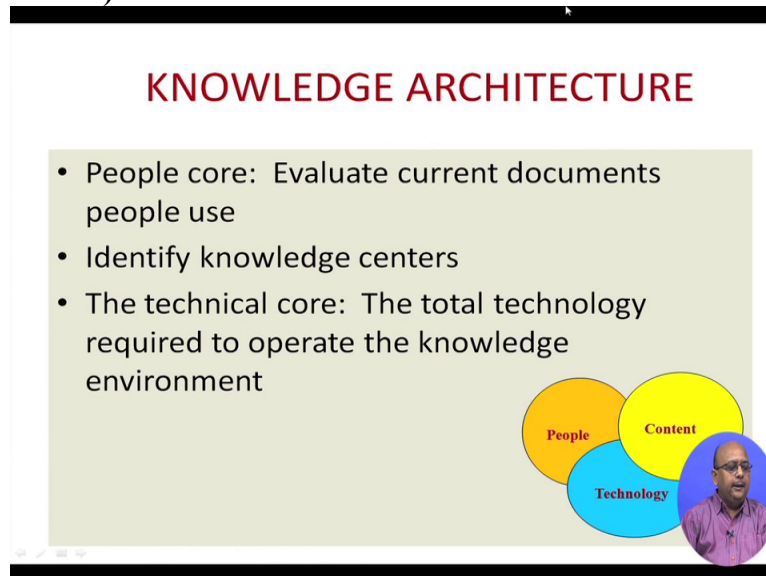
But if you develop a bureaucratic culture in organisation which creates more impediments to knowledge sharing because in a bureaucratic set up people may not be readily available or willing to share the knowledge with each other. Now the last part is strategy and policy, what is the policy in the organisation related to knowledge sharing.

Whether you allow such kind of things, whether the policy is holding information, it depends upon whether to go for decentralised decision making process whether you share information

across levels or groups or not. Or whether you allow this kind of things or not that okay, certain information should not be go beyond certain levels or not.

These kinds of policies and strategies are very, very important. And you make sure that it becomes a part of the policy and strategy so that people are ready to share their knowledge with each other.

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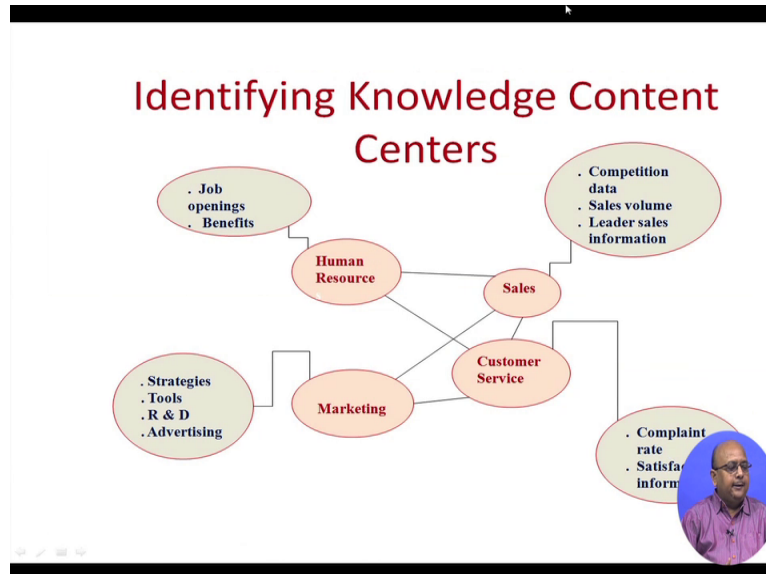


Now, moving on to the next part that is Knowledge architecture has 3 important points. What I am talking about knowledge architecture is that when you are going to develop knowledge management system, there are three important core areas that we need to look into is the content, people and the technology.

The role of the content is basically what you are going to have in the system, people, who create knowledge and use knowledge and technology, which enable people to use the content, right. So, if you look at the people core you are going to see what are the current documents people are using identify knowledge syntax. It could be library or anything like that.

And the technical core is that is how you are going to make use of that knowledge. So, you need to have technical environment which basically facilitates the use of knowledge, okay.

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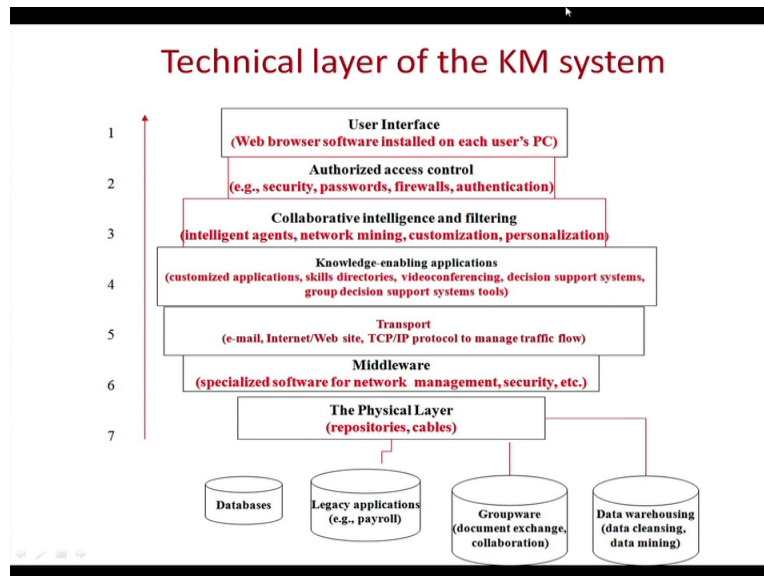


So, we will discuss this knowledge architecture in detail like how you are going to identify knowledge content in centers. If you look at the example, I have taken 4 different functional areas. That is HR, sales, customer services and marketing, okay. What are the different kinds of knowledge content centers for different kind of activities? For sales, you look at the competition data, sales volume okay.

What is the sales information that at you getting from the latest? This is the information which is required for the sales and whether this information is available for the sales people or not. For HR, say for example, what kind of openings are available, what kind of benefits are going to be provided by the HR policy. You look into these kinds of information.

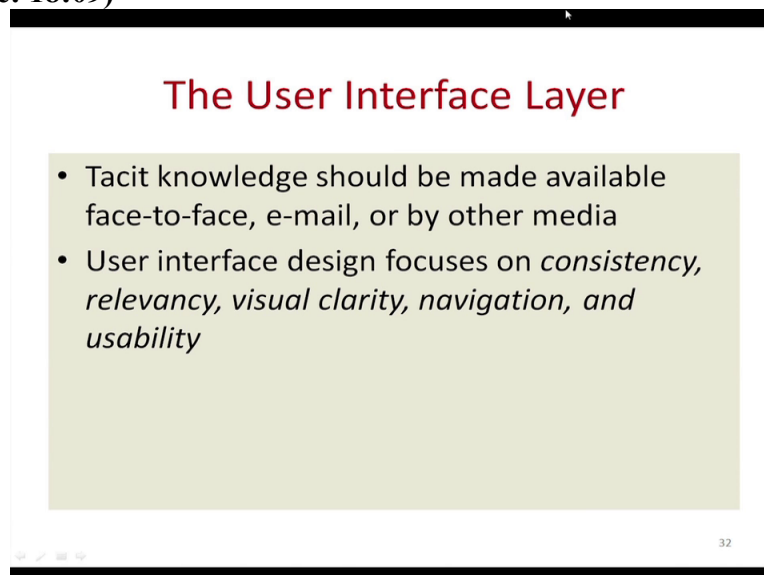
For marketing, what kind of strategy you are adopting, what is your advertising policy, what kind of R and D effects you are doing, what are the tools that are using for marketing? So, these are basically from the content. For customer services, it is something like compliance, rate and what is satisfaction level, what kind of information you are providing, okay? These content help you to improve these kinds of things.

That is sales or customer services or marketing effects, okay. So, contents knowledge content centers identification is very, very important.  
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Now let us look into the technical layer of the system. Now if you look at this, it is clear? So, if you look at this it says it moves into 7 different stages. It is basically technical part which basically enables and helps you to get the data. Now, if you look at this you find 7 different stages of this technical layer, starting with user interface and authorised access control, collaborative Intelligence, filtering, knowledge enabling and transport, middleware and physical wear.

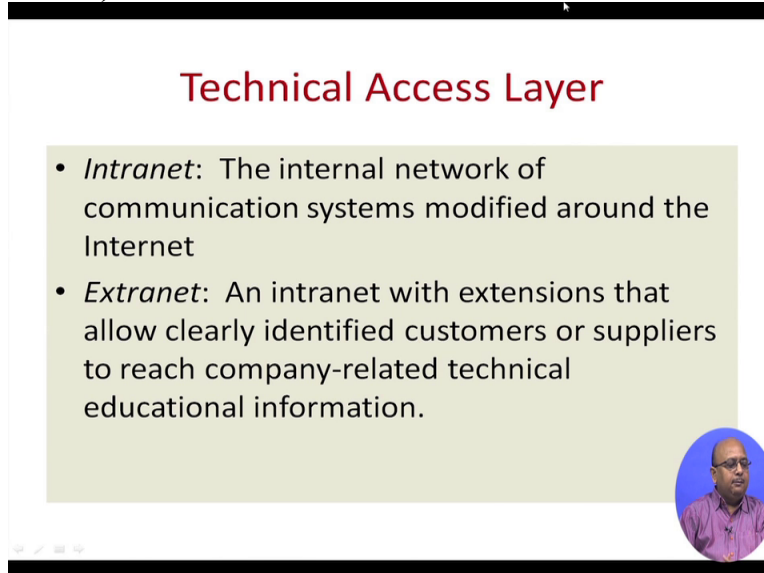
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Now let me discuss this one by one, first is the user interface. User interface is that how that people are going to make use of the knowledge, okay. It talks about the end users with the technology. How I am going to use technology to get the relevant knowledge, right. And what kind of interface is provided by me.

Like whether it is like available face to face or email or other media and what is the interface design, in terms of consistency, or relevant information I am getting, what kind of visual clarity is there, whether navigation is there or not and whether the knowledge that is available is usable or not okay? These are the issues related to the user interface.

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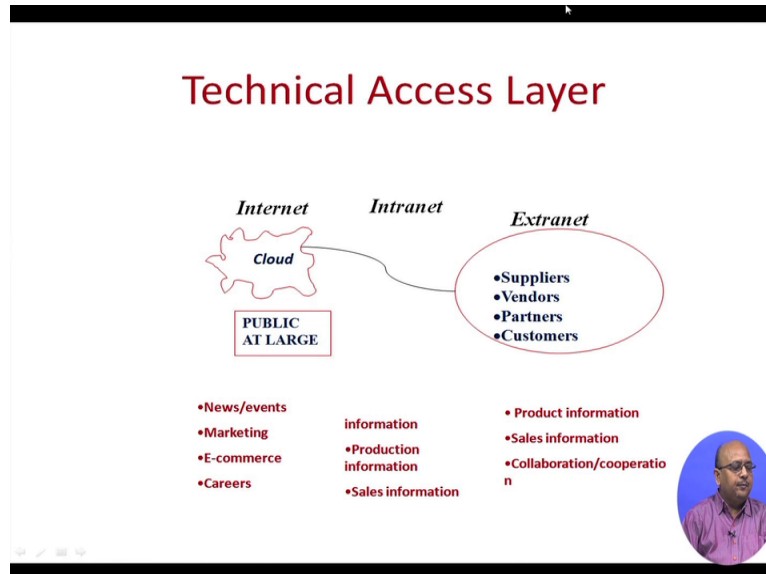
- *Intranet*: The internal network of communication systems modified around the Internet
- *Extranet*: An intranet with extensions that allow clearly identified customers or suppliers to reach company-related technical educational information.

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Now technical access layer, technical access layer means how you are going to access that information, the content okay. It could be through Internet or extranets, like you have a Internet network of communication system that is modified around the Internet. For example we have our system we have both Internet as well as extranet.

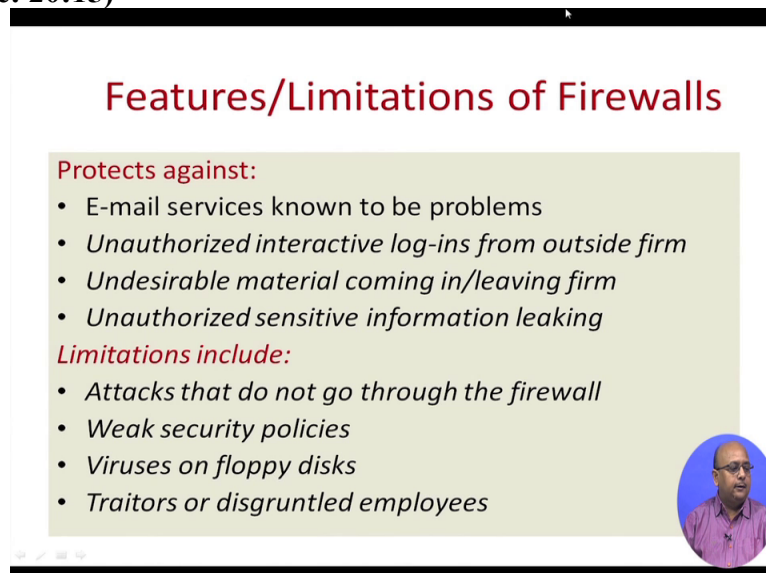
Internet through which we can get can I have access information and extranet is basically the internet with extensions that allow clearly identify customers applied to the reach the company related information. For example your information can be accessed from outsider as well right. So, what you do you also add suppliers, customers, vendors and they can login and have access to the information and this is what we called extranet?

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And if you look at this, it talks about Internet, intranet and extranet okay. So, the cloud that is, internet. That is where the server is or where the information is, okay. And then, you can access this like you get news and events. You can get news about marketing, careers, E-Commerce activities; all that is available there.

Intranet you can get information related to products all kind of things is within the organisation. Now extranets, where you are trying to connect through internet as extension of intranet that is extranet, where you are going to connect with your suppliers, vendors, partners and customers, so that they can also login and get information related to product, sales and other kind of things. (Refer Slide Time: 20:15)



Then you also need to look at whether you are going to have firewalls, protect the systems because you also need protection from the other things. So that they are not unauthorised login

ok; they are not going to use materials, okay. And then you have to see that you have system for security and privacy this is basically very, very important.

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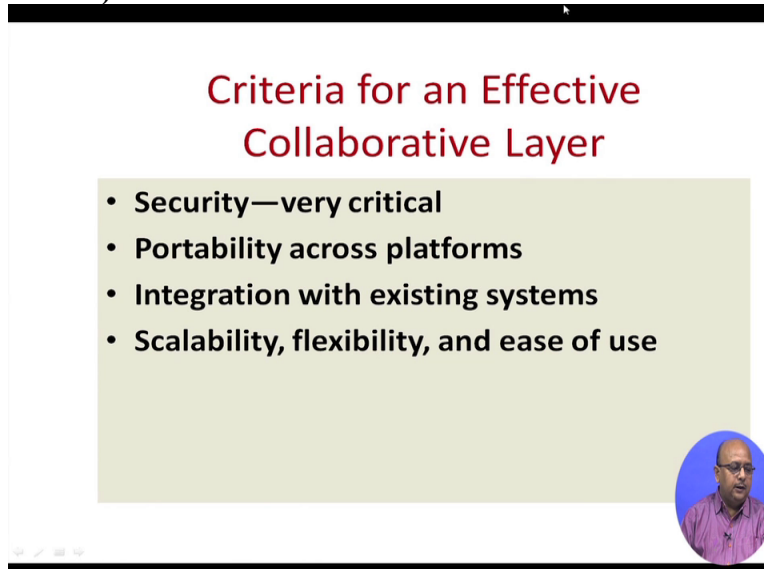
### ***Collaborative Intelligence and Filtering Layer (Layer 3)***

- Provides personalized views based on stored knowledge
- Reduces search time for information
- Intelligent agents search across servers to find the information requested by the client (user)
- Intelligent agents arrange meetings, pay bills, and even wander through virtual shopping malls, suggesting gifts and so on




Then the third layer basically we are talking about collaborative intelligence and filtering which basically provides personal views based on the stored knowledge, okay. You have intelligent search engines across servers to find information that is required by the client, okay. For example, meetings, pay bills and you can go through shopping malls and all kind of things that can be done. And there is filtering layer which basically helps you to find out the relevant information, okay.

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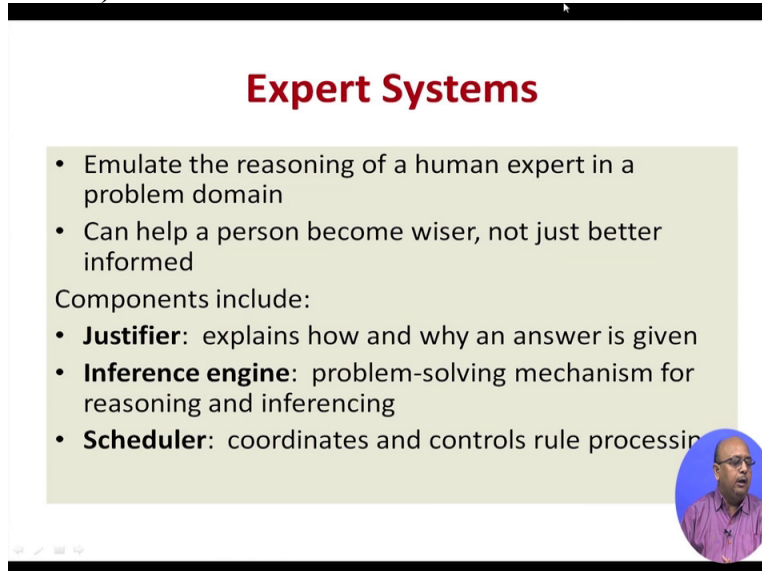


### **Criteria for an Effective Collaborative Layer**

- **Security—very critical**
- **Portability across platforms**
- **Integration with existing systems**
- **Scalability, flexibility, and ease of use**



Then, you have to see that this collaborate layer is very secure, portable across platform, so that you can make use of it. It is integrated with the existing setup system and it also has capability you can increase or decrease and it is flexible and you can make use of it.  
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## Expert Systems

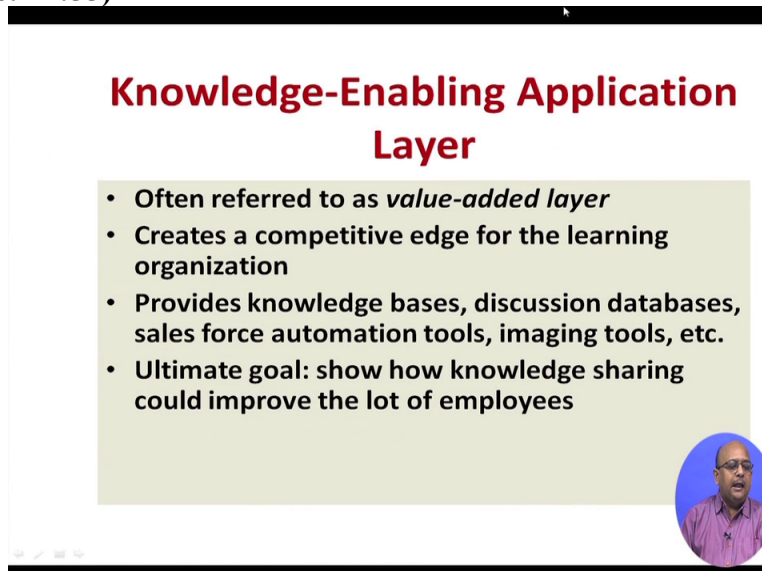
- Emulate the reasoning of a human expert in a problem domain
- Can help a person become wiser, not just better informed

Components include:

- **Justifier:** explains how and why an answer is given
- **Inference engine:** problem-solving mechanism for reasoning and inferencing
- **Scheduler:** coordinates and controls rule processing




Then you have expert system also. Expert system, the idea is that, it is better because it is used in certain things like justifiers, interface engines and schedulers which basically which try to find out an answer. So, expert system probably is more complex but it helps you to get better answers. It is basically a kind of problem solving mechanism using a reasoning interfacing, okay which gives you better control over things.  
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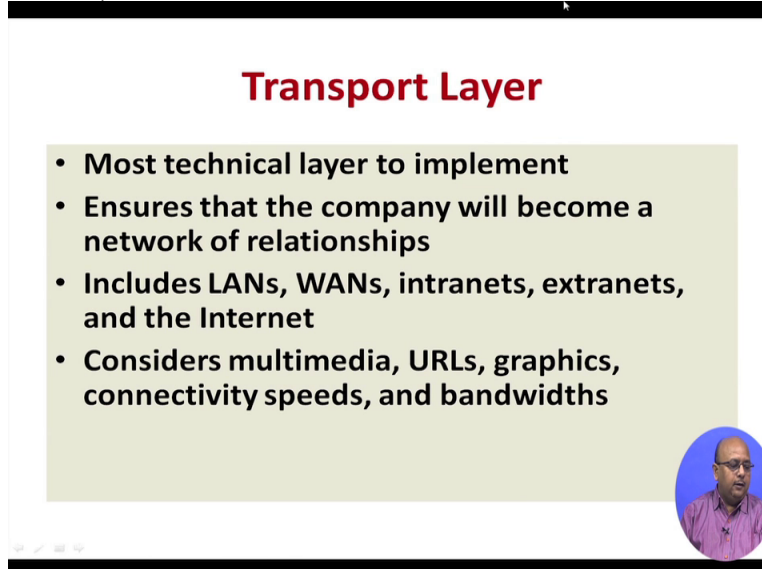
## Knowledge-Enabling Application Layer

- Often referred to as *value-added layer*
- Creates a competitive edge for the learning organization
- Provides knowledge bases, discussion databases, sales force automation tools, imaging tools, etc.
- Ultimate goal: show how knowledge sharing could improve the lot of employees




Then knowledge enabling application layer basically is a value added layer. That is where you are going to learn something, you have knowledge bases and some databases and other information's. And you are going to share this to improve the things.

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## Transport Layer

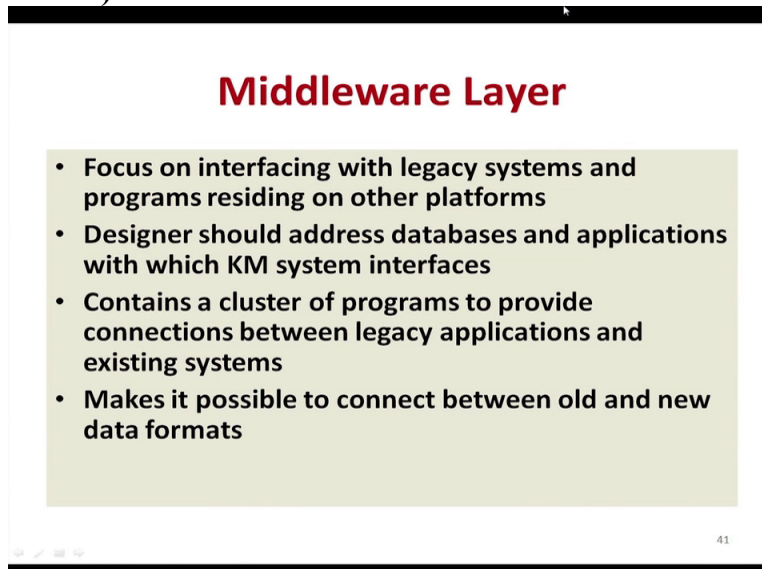
- **Most technical layer to implement**
- **Ensures that the company will become a network of relationships**
- **Includes LANs, WANs, intranets, extranets, and the Internet**
- **Considers multimedia, URLs, graphics, connectivity speeds, and bandwidths**



Then, at the transport layer basically you see that how you are going to take it to local area network ok, wide area networks, intranet and extranet and other things. You can use URL, graphics and connectivity and bandwidth. These are basically used to see that from where information is transported from one set of people to another set of people.

And then you have middle wears basically, it talks about how they interface takes place with different systems. Like accounting system, payroll system how this accounting or payroll system is integrated with other systems, okay.

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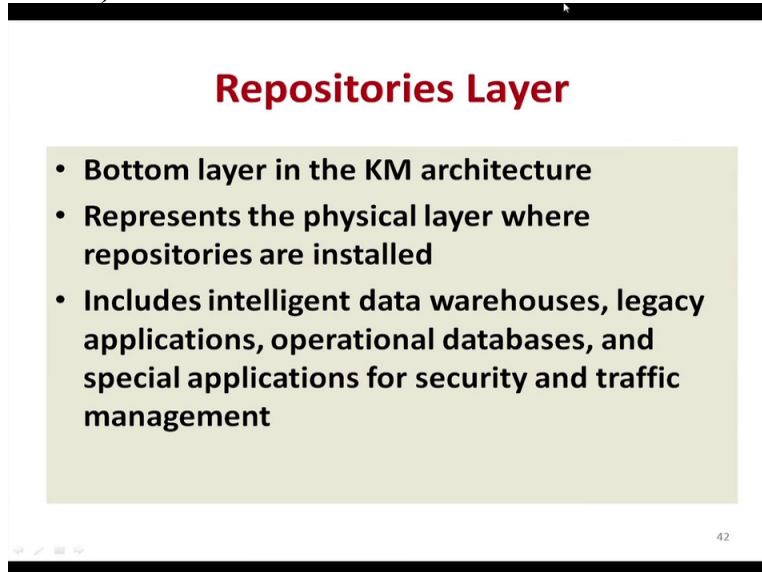
## Middleware Layer

- **Focus on interfacing with legacy systems and programs residing on other platforms**
- **Designer should address databases and applications with which KM system interfaces**
- **Contains a cluster of programs to provide connections between legacy applications and existing systems**
- **Makes it possible to connect between old and new data formats**

41

So, you have different software's, programs which are connected with each other may be old databases and the new databases.

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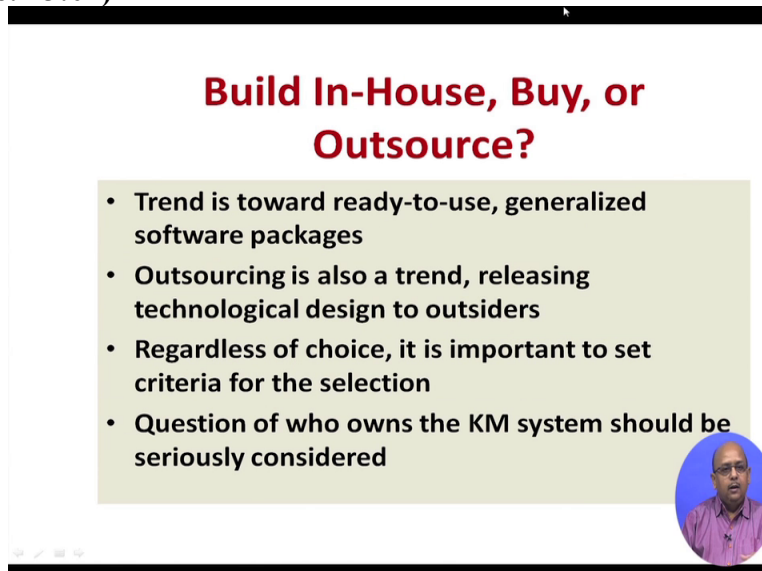
**Repositories Layer**

- **Bottom layer in the KM architecture**
- **Represents the physical layer where repositories are installed**
- **Includes intelligent data warehouses, legacy applications, operational databases, and special applications for security and traffic management**

42

Then you have a repository layer, the repository is very, very important that is where the content is okay. It includes data warehouses, legacy applications like payrolls, operational databases specific application for security and traffic management. And that is very, very important. This is protected by password and login and other kind of things.

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**Build In-House, Buy, or Outsource?**

- **Trend is toward ready-to-use, generalized software packages**
- **Outsourcing is also a trend, releasing technological design to outsiders**
- **Regardless of choice, it is important to set criteria for the selection**
- **Question of who owns the KM system should be seriously considered**

43

Now the most important thing whether you are you going to build in or outsource it. It is very, very important. So, you have to see that whether you are going to develop packages say for example you want to develop ERP system. In order to develop ERP system which is very, very cost effective, if you have expertise, go for it.

Because it is less cost effective but you can also buy ERP systems and customise it depending upon your requirement, okay. So, nowadays companies go for more and more outsourcing because it is more cost-effective, okay. Because they may not be having the knowledge and expertise kind of ERP system that would be required by them okay..

And then, you decide what kind of ERP system you want to introduce, depending upon the requirement of the organisation. Then, you see that who is going to maintain and do all kind of things related to this, thank you.