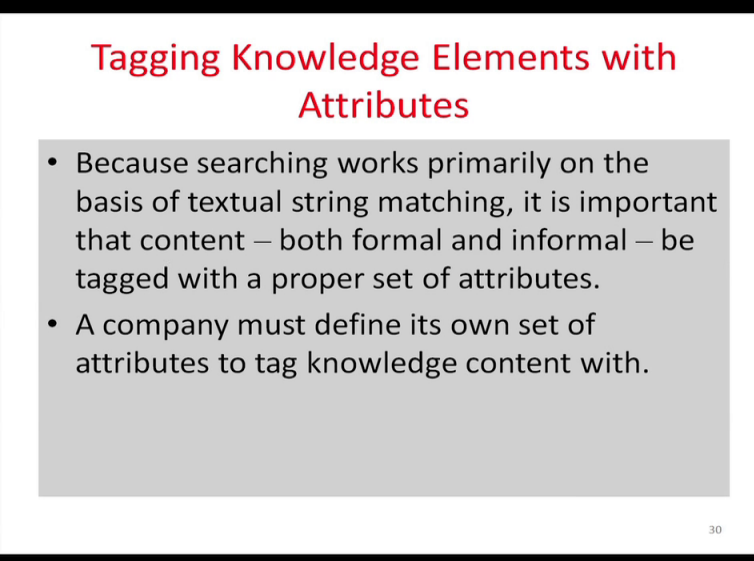


Lecture 17
Knowledge Infrastructure(Contd..)

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Tagging Knowledge Elements with Attributes

- Because searching works primarily on the basis of textual string matching, it is important that content – both formal and informal – be tagged with a proper set of attributes.
- A company must define its own set of attributes to tag knowledge content with.

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Ok, so, we have discussed about the Search strategies related to attributes. Now, you have to see that how we are going to tag elements with these attributes. When you are going to tag knowledge elements with the attributes, the basic objective is that since searching takes place based on the textual string matching, we have to see that the content, that is the knowledge whether it is available formally and informally has to be tagged with some set of attributes.

Because these attributes are not attached, attached with the knowledge; Then, search becomes very, very difficult. And when it comes to tagging elements with certain attributes, how you are going to define attributes? This definition of attributes depends upon the organisation in hospital organisation different kinds of attributes could be used.

Like whether it is related to OPD or whether it is my related to particular medicine or whether it is related to circular disease, particular disease. In case of organisation, particular department or something like that. So, when you are going to define it, you are going to have one set of attitude depending upon sorry, attributes depending upon the nature of the organisation so that you can tag knowledge with that content, right.

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Table 7-10 Tagging Attributes for Knowledge Content in a KM System

Attribute Type	Tagging Attribute
A	Activities
D	Domain
F	Form
T	Type
P	Products and services
I	Time
L	Location

Tagging attributes are identified on the basis of extensive research on knowledge usage reported in Heijst, Spek, et al., *The Lessons Learned Cycle in Information Technology for Knowledge Management*, in Borghoff, U. and R. Pareschi *Information Technology for Knowledge Management*, Springer Verlag, Berlin (1998), 17–34.

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Now, we are going to discuss about that how tagging attribute for a knowledge content system; works in a knowledge management system. Now, these are the different kind of attributes that could be used: A for activity, D for domain, F for form, T for type, P for Product and services, I for time, L for location. So, when we have to discuss about these attributes basically we have to see that these attributes has been defined based on lot of research.

Here, it means that activity attribute; D is a domain base like it is related to marketing or HR function, then F is form based, okay. What kind of attribute it is? Then it is a type based attribute. Attribute: The product or service, location and time. What you are going to discuss now is that how these different kinds of attributes are tagged with the knowledge content, okay. So, we will discuss it one by one, okay.

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Activities Attribute

- The activities attribute refers to the organizational activities to which the given knowledge element is related.
- The value of this attribute must be defined up front, and individual values need not be mutually exclusive.
- Therefore, your company must have an explicit model of the activities and processes that are carried on during the course of “running the business.”



Starting with the first one, the Activities attribute. When I am talking about activities basically you are referring to activities of the organisation, right with which is the knowledge elements is to be tagged. So, what are the various activities that organisation does, the activities for an organisation is going to vary depend upon nature of the organisation, right. For example, the activities of an Educational Institute may be teaching, research, learning and consulting, okay right.

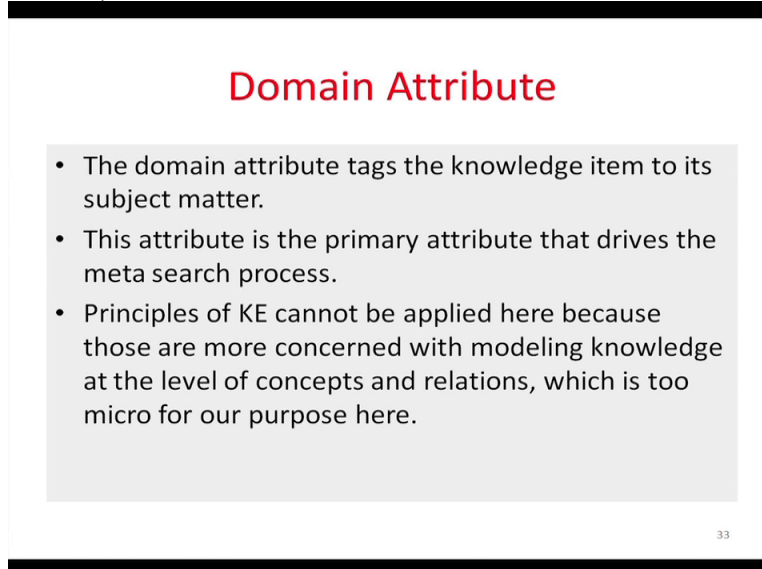
Admission and these kinds of things or placements, these are the different kinds of activities which the organisation is engaged these days. I am talking about the academic institution. But, when it comes to manufacturing organisation then, it could be related to Logistics, Supply chain, HR, Recruitment, right. So, these could be R & D, so these could be various activities.

So, we have to identify activities, okay based on the knowledge sorry the nature of the organisation and then accordingly we are going to attach certain knowledge elements to these activities. So, the value of the attributes must be defined upfront; individual attributes needs to be virtually exclusive, so that it is not inclusive. It means that two attributes are significantly different from each other and it is exclusive and not inclusive, right.

So, you have a very explicit model of activities and processes which is done as a part of the business, right. And each activity must be exclusive in the sense it should not overlap with other activities, right. Otherwise what happens? The same knowledge element would appear or would be tagged with the same activity into two different areas, so that is to be avoided.

And that is why it has to be exclusive and explicit. These are the two characteristics. So, depending upon the nature of the organisation, you have to define these attributes related to each and every activity and make them exclusive and explicit depending upon the organisation.

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The slide is titled "Domain Attribute" in red text. It contains three bullet points in a grey box. The first bullet point states that the domain attribute tags the knowledge item to its subject matter. The second bullet point states that this attribute is the primary attribute that drives the meta search process. The third bullet point states that principles of KE cannot be applied here because those are more concerned with modeling knowledge at the level of concepts and relations, which is too micro for our purpose here. The slide number 33 is in the bottom right corner.

- The domain attribute tags the knowledge item to its subject matter.
- This attribute is the primary attribute that drives the meta search process.
- Principles of KE cannot be applied here because those are more concerned with modeling knowledge at the level of concepts and relations, which is too micro for our purpose here.

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Then, coming to another way to define attribute, that is domain attribute, okay; so, domain attributes is related to basically the knowledge, item related to subject matter, okay whether it is related to mechanical engineering, whether it is related to electrical, whether it is related to management, okay. And that is how we are going to define the subject matter.

And accordingly we are going to add knowledge element whether it is related to knowledge management, whether it is related to mechanical engineering, whether it is related to civil engineering, right. So, this attribute is basically a primary attribute that drives the Meta search process.

Take for example in organisation, the knowledge related to recruitment or the knowledge related to Production department and this knowledge related to Advertising and Promotions, right. So, we have to see that knowledge element cannot be applied here, because what actually happens, when you are going to model knowledge at the level of conception relationship it is very, very micro level.

And this could Domain attributes actually takes place at the macro level. Because we are going to define the Macro level domain and accordingly you are going to attach knowledge elements related to these domains one by one, okay. This is about the domain attributes.

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Type attribute

- The type attribute is more relevant to formalized knowledge that is captured in electronic or textual form such as a document or a report.

- | | |
|-------------------------|-----------------------------------|
| – Procedure | – Best practice report |
| – Guideline | – Note |
| – Protocol | – Memo |
| – Manual | – Failure report |
| – Reference | – Success report |
| – Time line | – Press release/report |
| – Worst practice report | – Competitive intelligence report |



Then, coming to Type attribute, Type attribute is more relevant compared to Domain attribute because here you can formalize knowledge. That is, you can go for a more structured, codified knowledge which is captured either in electronic form or textual form. It could be of a form of document or a report. So, you are going to add this element in the form of a type, for example, okay.

It could be related to process so, how you certain activities are being done. So, it is related to procedure. And you know that these are the procedure that is to be followed and this procedure is available either in document form or as a guideline or a manual whatever it is, okay. And that is what you are going to follow. So, or it could be related to your protocol or a reference material or it could be a timeline, or the practices that is, good practices or worst practices.

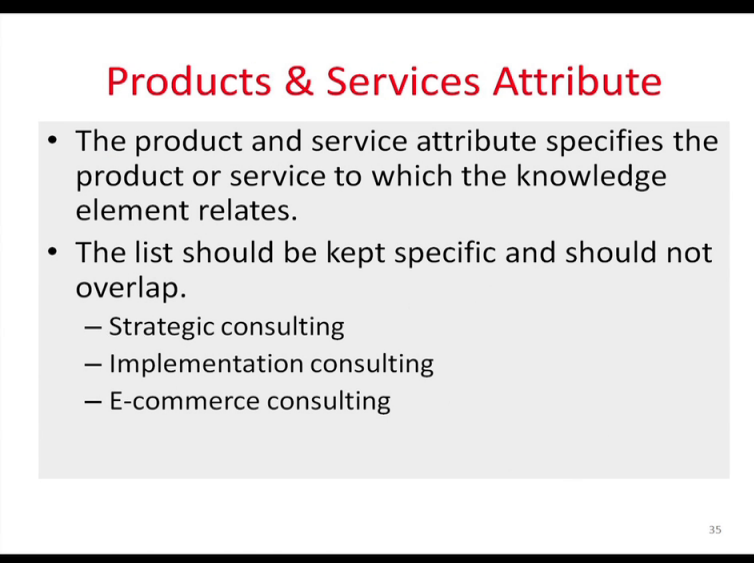
It would be available in the note or a memo or a failure report or a success report or it could be a press release or competitive intelligence. Now if you look at these different kinds of attributes okay, you can see that this kind of knowledge is more codified; more in the form of, or it is captured in very explicit form ok, which could be electronic or textual. Electronic means that it is scanned and copied somewhere and it is kept over there.

Or it is available in the digital form, okay. Now, textual means that it is available in the document or a report form. Now, if you look at this like guidelines, manuals, references, reports, notes, memos, okay as reports it is available in the document or report form, right. While others like procedures, best practices, could be also available in the electric form but something like procedure and other things may not be available in the document or report form.

So it is, may be, they have captured it through certain processes and prepared a report based on the basis of that ok. And in that way the procedure is also available in document or report form.

So, this is related to what you call the Type attribute.

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Products & Services Attribute

- The product and service attribute specifies the product or service to which the knowledge element relates.
- The list should be kept specific and should not overlap.
 - Strategic consulting
 - Implementation consulting
 - E-commerce consulting

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Now, after type attributes, we are moving to the next part of the, next type of attributes, that is product and service attribute, okay. If you look at product and services attribute it actually it specifies that, okay whether this knowledge element is related to a particular product or particular services, right. And it is easy to define it when it is specified to product or services depending upon the nature of the organisation.

Like, if it is a manufacturing system, so you have a different product line. You know that different produce you have a, b, c, you can say that, this knowledge element produce a or b or c, okay. And this knowledge element is related to different kind of services ok, may be, bedding services, maybe nursing services, maybe other kind of services, okay. Say, for example, in the Hospitality Services you offer different kinds of services for your customers.

Now, you can identify these are the different types of services that we offer. And this is where knowledge, knowledge base which is tagged with this kind of services. And then, further you can identify process and other things associated with the product and services, right. Now, the thing is that yes it has to be specific and it should not overlap.

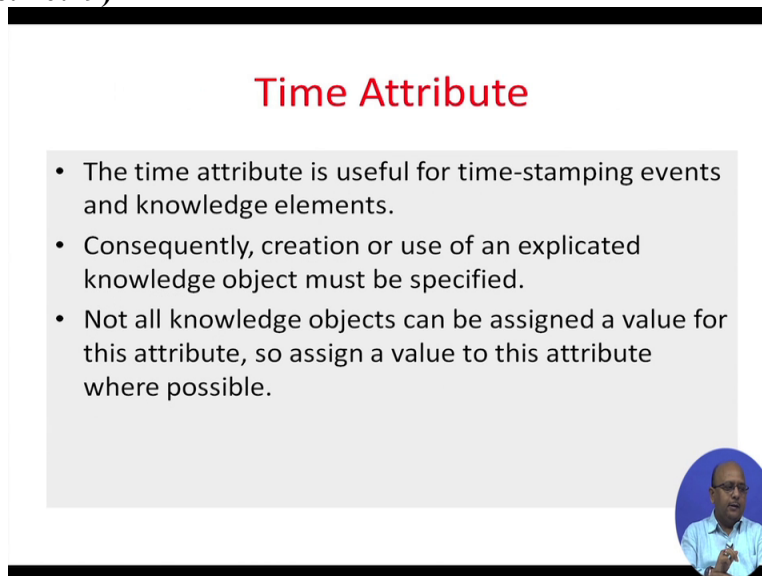
It does not mean that one product element knowledge element should be also related to other product knowledge element. Though there could be some overlap but you try to make it as

specific and exclusive as possible, okay. For example, if you look at these three areas, right: Strategic Consulting; Implementation Consulting and E-commerce consulting. These are three different areas of services, right.

Strategy Consulting is what? Strategy consultant is where the top management is been consulted or top management consults about identifying vision, mission and strategies of the organisation. What are the process and how to go about it? It is related to this one, okay. And when it comes to Implementation consulting, suppose you want to go for you Change management strategy, right suppose, you want to go for a change, right?


Then, how are you going to execute and implement the activity. So knowledge related to that would be coming over there. Then, E-commerce: Suppose you are into e-commerce, okay. So, anything related to that would come under that. But it does not mean that see, all of them are related to consulting. But the area of Consulting is different. So, the knowledge element associated with these three areas should be distinct and specific. And they should not overlap with each other.

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Time Attribute

- The time attribute is useful for time-stamping events and knowledge elements.
- Consequently, creation or use of an explicated knowledge object must be specified.
- Not all knowledge objects can be assigned a value for this attribute, so assign a value to this attribute where possible.



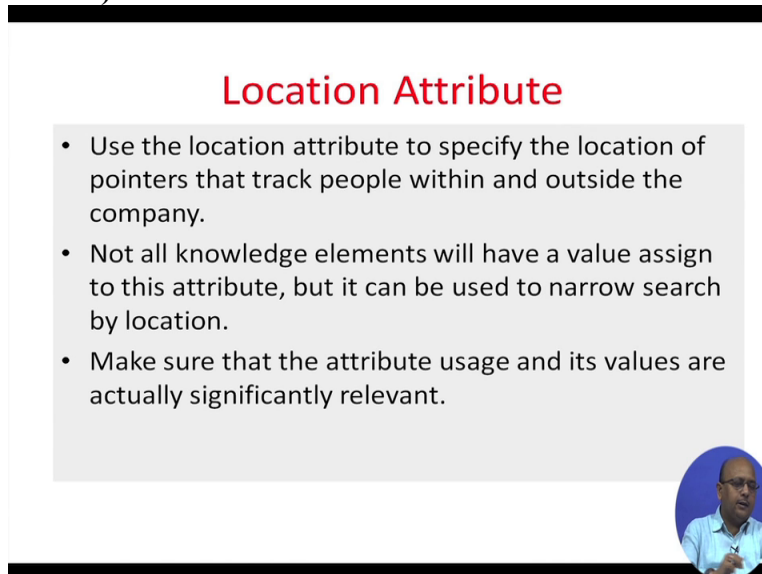
Now, coming to time attribute, time attribute is very, very important because see, any events that happens in the organisation happens in a time frame, right; maybe in the past or in the present right. Now, when you are going to analyse or tag or look at knowledge created or codified in a particular time you put a stamp whether this knowledge was created during this period.

The basic idea is that you can ensure that, okay you can find that point of time, what was the context, what was the environment, what was the scenario in which this knowledge was created and was made useful, right. You have to very, very explicitly define it, specify it that ok. This knowledge was created by this person, at this point of time, for this particular use, okay.

The idea is that if you have created and used an explicit knowledge, okay and it is specified in terms of time, then, you can see whether you are having similar situations, similar context or similar environment in which it could be used in future or not, right; because the time, the environment keep on changing. So, if you do not understand the time frame or the context in which people it was used, it may not be possible for you to use in the future.


Now see, when you are talking about different kind of attributes, okay you cannot, see, you cannot see that you are going to assign a value for these attributes, okay; because it happens in a certain time period. It may or may not be useful to you. There is no point in assigning a value. The only thing you have to see is whether it is going to useful for you or not, okay. But it is very difficult to assign a value for this kind of time attribute, okay.

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Location Attribute

- Use the location attribute to specify the location of pointers that track people within and outside the company.
- Not all knowledge elements will have a value assign to this attribute, but it can be used to narrow search by location.
- Make sure that the attribute usage and its values are actually significantly relevant.

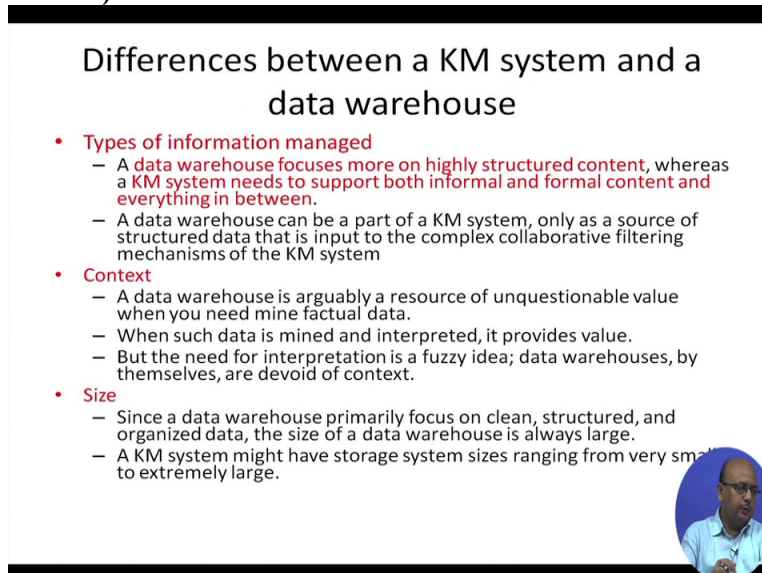


Next is location attribute, Location attribute where it happens, okay. So, you need to point out the location, okay so that you can track people with and outside the company. Who did it, why they did it? So, you have to find where this knowledge was generated, okay. It is very, very important to identify the location attributes.

And this helps you to specify, to find out and track people either within the organisation or outside the organisation. So, not necessary that it is possible for you to identify and locate people who created knowledge, okay. Then it will be very difficult to assign any value, okay. But it helps you to search your, narrow down your search, because you know that this is the knowledge was created.

And then you also add certain context and other elements to it, okay. So, when you are going to make use of these attributes, you should make sure that it has certain values, okay. And it is actually related to certain things which we are relevant for you in the future. Otherwise it may not be possible for you to use.

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Differences between a KM system and a data warehouse

- **Types of information managed**
 - A data warehouse focuses more on highly structured content, whereas a KM system needs to support both informal and formal content and everything in between.
 - A data warehouse can be a part of a KM system, only as a source of structured data that is input to the complex collaborative filtering mechanisms of the KM system
- **Context**
 - A data warehouse is arguably a resource of unquestionable value when you need mine factual data.
 - When such data is mined and interpreted, it provides value.
 - But the need for interpretation is a fuzzy idea; data warehouses, by themselves, are devoid of context.
- **Size**
 - Since a data warehouse primarily focus on clean, structured, and organized data, the size of a data warehouse is always large.
 - A KM system might have storage system sizes ranging from very small to extremely large.

Now, since we have been talking about knowledge management system and we have been talking about especially the infrastructure part and we have seen that how we go about searching and then identifying certain attributes so that user interface easy. And then you go to filtering and other stages, okay.

Now, you have to see that when you are talking about the knowledge management system and data warehouse in what way data warehouse is going to be different from a knowledge management system. So, it is going to be different in terms of its content, context and style. And there are certain other variables which could be of useful.

Now, if you look that the type of information that is managed, by both knowledge management system and data warehouse is different, okay. See, a data warehouse basically has very structured

content, okay. While a knowledge management system is both informal and formal. Why I am saying this because you have both tacit knowledge and as well as explicit knowledge.

Tacit knowledge which is basically shared or transferred formally sorry informally and explicit knowledge is formed, right. Data warehouse has only formal explicit knowledge but knowledge management system will have both formal that is explicit or codified knowledge. Similarly it may also have personalized tacit knowledge which could be your informal, right.

Or anything that goes on between formal and informal or in between tacit and explicit, I mean, you have to see that whether the extent to which this knowledge is tacit or this knowledge is explicit. So, in a bipolar dimension, starting with tacit to explicit everything that goes on in between could be part of knowledge management system, right.

In Data warehouse, can be a part of knowledge management system because it has a highly structured content which is very, very important, right because it is going to provide you source of data, okay. And it could be a part of a collaborative filtering system. But a knowledge management system has per se it is not a data warehouse because knowledge management system also include informal, explicit, personalized knowledge.

Which is not true in case of data warehouse, so, that is about the content difference, now, coming to the other part the context difference, okay, though if you look at the context, context is that the environment and whether it is going to be relevant, when it comes to use, right. So, definitely data warehouse is going to provide you a lot of data, okay and you have to identify which data is going to be important.

And that is where you go for mining the data, from the data source and unless you are able to mine and interpret, it is not going to have any value for you, okay. But because the data warehouse, the data is available in more ambiguous form, it is basically fuzzy and it does not have any context, right.

For example, if I provide your database of the number of students that have failed over a period of 10 years, right. So, what you have only the data about the number of students who have failed over a period of time, right. And then, you can get this data from the warehouse. But it does not have any context. How they are failed, what happened to them, okay. All this information is not available in the database, right.

So, you have to mind this data and then you have to interpret in order to provide the value to this data. Otherwise you are not going to make use of this data. So, the context is very, very important which is available with knowledge management system. In knowledge management system, whatever knowledge is available, you also have a context to that, okay.

This was used by this, and how it was used because you are adding certain attributes to it, okay so that it is easy for you to understand the time, domain, product attributes related to particular knowledge that is created; and then, when it was used, who has used it, what is the relevance, when it can be used, which is not the case with the data warehouse.

And that is where data warehouse and knowledge management system differ from each other. Now, coming to the size, okay, now if you look at the size, if you look at the warehouse, okay it may be very big, okay. The data size is very large in case of warehouses and it could also be cleaned structure and organized. So, if you look at the KM system, since it has limitation related to storage, it may be having very small to extremely large.

It may vary depending upon the capacity to store the information and knowledge management system which is basically technology enabled. So, it could be either very small or very big; another thing is that the data that is structured is available in data warehouse but the information or the knowledge that is available with that KM system would be either structured or unstructured as I told you, okay.

These are the some of the references. Let us see that what are the other differences? okay.
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Differences between a KM system and a data warehouse

- **Content focus**
 - The content focus of a KM system is on highly filtered information and on knowledge, whereas that of a data warehouse is on scrubbed, raw, clean, and organized data
- **Performance**
 - Because of the complex nature of retrieval and classification requests that a KM system must be able to handle, performance requirements and computing power needed for a KM system are much higher than those of a data warehouse
- **Networks**
 - A data warehouse does not need to be on a live network to function properly; however, this live network is imperative for a KM system that is trying to draw from resources available throughout the entire enterprise and beyond it – from the Internet and collaborative, extended enterprise.



So, the difference is not the content focus, performance and networks, okay. So, if you look at the content of the knowledge management system, okay it is basically highly filtered information, okay while the data warehouse is scrubbed, raw, clean and organised data. So, that is the major difference between KM system and data warehouse that I have told you.

Now, look at the performance which is going to enable to have a better performance, right. See, getting or retrieving data from knowledge management system which has a basic complex system or a retrieval and qualification ok unless you are able to do it, your performance may not be good, okay. So, you also need to see that in order to have a better performance from a knowledge management system, you should be able to retrieve data.

You should be able to make use of that data, okay using certain tools and techniques so that you can use it, okay. But, in case of data warehouses, you can straight away mind the data; facts that is available and you can organise and interpret it, ok. And your performance may be good. Now, coming to another important factor that is networks if you look at networks, see a data warehouse does not need to have a live network, okay.

But it is very, very important for knowledge network because you are going to draw resources from different sources, within the organisation and outside it. You also need an Internet and a collaborative platform which is not the case with the data warehousing warehouses; because the data warehouse is something that is idle and it could be used, it could be structured but it is not connected through networks, okay. So, you need to go to the source and identify it.

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The application layer

- Tools that enable integration of information across tacit (such as people) and explicit (such as databases, transaction-processing repositories, and data warehouse) sources help create and share context (the process itself is called contextualization), and facilitate sense making.

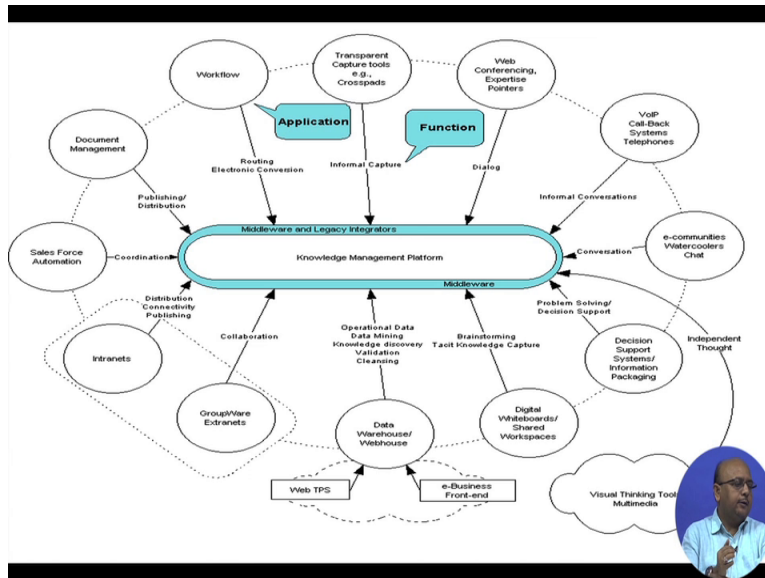
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Now after discussing this layer I am moving to the next layer that is the application layer. Now when I am talking about the application layer, you have to see that how you are going to integrate it, okay. Basically, in order to use that information the explicit level, in the interface level, you have to go for collaborative filtering. And next level is the application level, okay.

Now, when I am basically I am going to talk about application layer you have to see that what are the tools going to help you to integrate information; both tacit as well as explicit, okay. Tacit knowledge that is more personalized knowledge and explicit knowledge which is more codified knowledge like databases, repositories and warehouses.

Now, you have to see that the people should be able to have access to both tacit as well as explicit information, right. So, you need to create and share context for that, okay. And also need to contextualize in order to use it and so that people who are going to make use of this find something that is worthwhile. So that it sense to him that this is the data and this is the information that is available to them. And that is how they are going to make use of that. So, unless you have tools to integrate both kind of information which is available formally and informally formerly or available into what you call tacit form or explicit form, okay. It is not possible for you to share it and then and it is not have any sense for use.

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Now, if you look at it this, this is basically the knowledge management platform, okay. So, what we are talking about is this layer, the application layer. This application layer is very, very important, okay because you have if you look at this, after this you have this middle layer and legacy hardware.

Middle layer is Legacy hardware basically is very, very important. And that what you are going to have? You have different kind things like data warehouses, digital whiteboards and decision support system, e-communities, VOIP internet protocol, web conferencing, transport captures. So, you have to see that how formally and informally you are going to convert and then you are going to see that how software and other things are going to integrate different kind of information the knowledge management platform, right.

What we were talking about is that we are to see that how application layer is going to be very, very useful.

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Intranets and Extranets

- One of the most important aspects of information access is that of being able to view content of documents regardless of file formats, operating system, or communications protocol.
- Intranets, owing to their consistent, platform-independent access formats, such as rich HTML, and a common, consistent protocol (HTTP), make this possible.



Moving farther you are going to use what both intranet and extranets, okay. See, how this information is made available to the people, okay. So, you have intranet and extranet, both. Intranet within the organisation, you have platform, okay like HTML, HTTP. If you familiar with web based systems, okay you are familiar with these kinds of terminologies, right.

So, these protocols actually help you and have an organised system to have access to the data using internet, right. And that is why it is very important tool for accessing the data at the application level, okay.

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Pointers to expertise

- Electronic yellow pages
- When a key resource person is needed or when a person with specific skill sets or expertise is required, keyword and attribute tag searching can pull up pointers with contact information about persons who qualify, both inside and outside the organization.



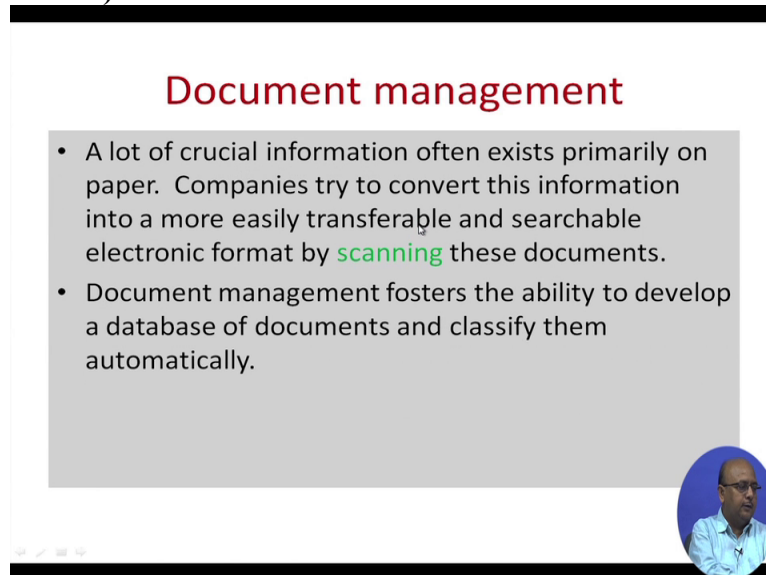
Now, you also have the Electronic yellow pages, okay. What is the role of the Electronic yellow pages, okay? Suppose you are looking for some information of some person, okay with specific skill sets or expertise, what you do? You go to these Electronic yellow pages, okay. Keyword and

Attributes tags searching is done like you try to find out what kind of person you are, suppose you want to have expertise, say, in a particular field, right.

Say, you are looking for a neurosurgeon, right. So, you are going to suppose you have a Neuro brain surgeon, more specific. So, you point out and then you search for this kind of thing in the yellow pages, Electronic yellow pages and then it take you to another search from where you can find out contact and other information details.

And then, you can get lot of details from there and see that who is going to qualify to become the resource person which you are looking forward to. So, it is very, very important to have access to that and then Electronic Yellow Pages can help you in the process.


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And then, the thing is document management. See, what happens is most of the companies whatever information they have, they prepare a document and classify this document into different categories, okay. And these documents could be also transformed into electronic format, okay. And how this can be done? You can scan all the documents and put them into a web page or in your repositories, okay.

These repositories does not only have data warehouse but they could also have scanned documents and lots of information, okay which companies have created related to the processes, products and other things, okay. So, this document management is another way to see or to develop a database of documents. And then you can classify documents whether it is related to this or that or product or domain or attribute, whatever it is.

The document management also helps you. The only thing is that you have to convert this document into electronic form and put it into the repositories which can have access, okay. Like a book, a scanned book in a webpage, okay. So, that is a document that is available or accessed can we access through the internet like if you go to the Google Books, you can find lot of documents or books, okay. So, these are scanned and digitalized which can be available to you.
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Project management tools

- Although the role of PM tools in the actual creation of knowledge is limited, these tools can provide a good basis for organizing and storing documents, records, notes, etc., coming out of a single project engagement.
- Many companies populate these tools in a post project phase, leaving the accuracy of project history traceability open to questions.

Then, moving to the Project management tool; See, the project management tool may not be very, very useful here, but basically helps you to organise and store documents properly, right because knowledge management could be treated as a project; so, you can apply some of the tools and techniques for organising and storing documents, okay here. So, and then, you see that whether the project was good, okay so this is basically related to the project management.
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Video Conferencing and Multimedia

- Video conferencing enables people to exchange both full-motion video and audio across a distributed network.
- In a KM system, multimedia allows the system to capture information content that would otherwise be lost forever.
- Multimedia, especially video content, bypass limitations of languages – an occasional barrier to knowledge sharing when you are working in transnational project.



Then, Video conferencing and Multimedia can also be done basically for sharing tacit information, okay. It is very, very important because it helps you to capture the information content which could be otherwise lost. So, if you are going to video conferencing, if you go for recording of information, okay and for using multimedia especially the video content, okay.

Though, there could be difficulties related to language and other things, but you can share knowledge, okay for any project especially it is good for sharing what you call tacit knowledge. **(Refer Slide Time: 27:45)**

Transparent capture enablers

- Digital whiteboards
- Tools such as this are indispensable in moving a company from a structured, information-based focus to a formal and informal, knowledge-centric focus.




Then, you have to find out certain other enablers, technology enablers to capture knowledge like you can have White boards, Digital whiteboards, okay. These are indispensable especially most of the organisation has today and you can write on these boards, okay. The company have a structured formal and informal knowledge centric focus.

Where these white boards are good because here you can write anything which could be shared across the board, vertically and horizontally which people can find useful ok. And anybody can see it, right.

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Virtual share spaces

- There must be a way to encourage and enable informal chat and conversations (even office gossip) that are a part of work life in most office settings.
- Virtual meetings
- Document collaboration
- Informal communication




Then, you also have another important thing which is known as Virtual share spaces. The virtual share spaces are nothing but those like a virtual meetings and collaboration of documents and informal communication, okay. That is done basically virtually, not physically, okay. So, you share certain spaces, okay like you have blogs, meetings and Skype and these kinds of things. So, that is where you can share the knowledge.

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Mind mapping

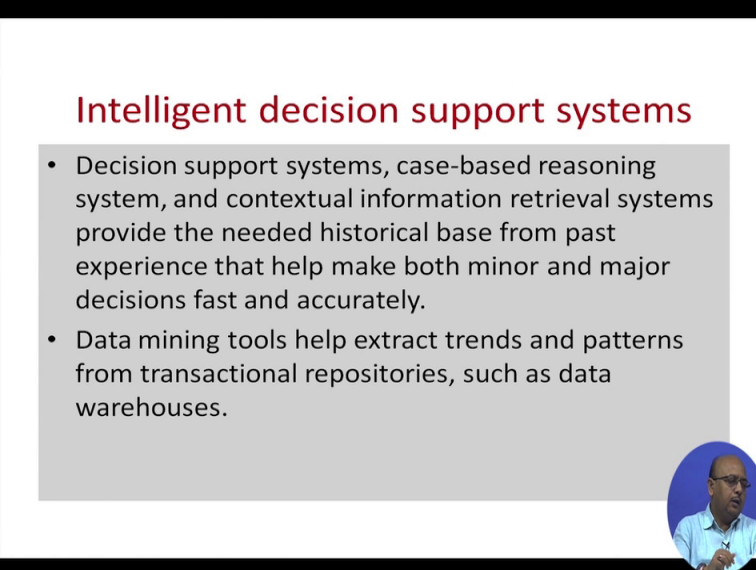
- Mind maps, very similar to concept maps, can be used to organize individual or collective thought and represent it visually.
- Mind mapping can be an excellent knowledge creation and organization tool, especially with the advent of excellent software supporting it.



Then, moving to Mind mapping. Mind mapping is basically just like concept mapping, okay where you are going to capture the thoughts of the people either individually or collectively, okay. So, it is a good exercise basically and that you have to see that what is going on in the mind of the people that can be captured and it is good but it is very difficult.


For that you need very good support right now we have certain electronic software which is put or attached to the people. So, you can find out the kind of emotions, the kind of other things that is going on. And you will be able to know, the kind of processes through which the person is going, in a particular situation. And that helps you to take decisions and other things.

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Intelligent decision support systems

- Decision support systems, case-based reasoning system, and contextual information retrieval systems provide the needed historical base from past experience that help make both minor and major decisions fast and accurately.
- Data mining tools help extract trends and patterns from transactional repositories, such as data warehouses.



Then, you also have decision support systems which are very, very intelligent, today. These are software basically case based reasoning systems. And it is very good for retrieving contextual information. And it provides you data related to past and which helps you to take decisions about the future. And that is where you are using lot of data mining tools to identify trends and patterns.

And you are going to use certain statistical tool and techniques to look into it. And then, you can get data from the warehouses; you can organise them; you can use certain statistical tools to get certain inferences; to identify patterns and trends, okay. And that is how it is going to help you to do it.

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The promise of peer-to-peer knowledge networks

- Peer-to-peer networking naturally extends to support KM because it closely mirrors face-to-face human communication.
- Peer-to-peer networking is defined as sharing of resources by direct exchange between individual systems in a digital network.

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Then, another important issue is peer to peer knowledge networks. It is also good because it helps you to support your knowledge management system especially when you basically discuss it face to face it is always good because peer to peer networking is very, very good for sharing knowledge especially tacit knowledge. That is where you have direct exchange of knowledge ok with each other and it could be done digitally as well.

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Affinity to infinity

- Individuals initially begin to share information, expertise, best practices, and content in peer networks because of the affinity that networks create.
- Each additional member increase the potential value of the network manifold or, in economic term, create increasing value.
- Intricate webs of affiliations open multitudinous possibilities for collaborative knowledge integration in autonomous groups that can be spontaneously assembled and disassembled.



Finally we are moving from affinity to infinity. Affinity means where we are going to be very close, you have to sympathize, interact, relate with other person. Then, you have very close relationship like peer-to-peer to infinity where there is no end to it, right. So, to start with what happens? You start studying information from your peer networks because you sympathize, you relate, you understand, what they need, okay and you create a network of peers.

And then, the moment you understand potential value of this network, you try to increase it many fold, okay in economic terms. And it helps you to create more economic value and ultimately what happens? It becomes so big that sometimes it is very difficult to manage ok. And this integration becomes very, very feasible.

So, you move from affinity to what you call infinity and that is bad as things may go wrong also, okay because this collaborative knowledge integration in autonomous groups is good. But if you expand it, then, it is not going to help you, okay. So, these are the things that you wanted to discuss related to knowledge infrastructure, okay. Thank you