

E-Business
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Lecture 12

E-Procurement: Reengineering the Traditional Procurement Process

Welcome back. We have started discussing about how to connect your external stakeholders and in this context last class we saw that you can connect to your external stakeholders who are public through your corporate website.

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Today we are going to see how to connect to one of your very important supply chain partner that is your supplier. So we are now going to discuss about the e-procurement system. So in this particular lecture we are going to learn what e-procurement is? What are the benefits of e-procurement? What is the traditional procurement process and how it is reengineered with the help of information and communication technology which we call as the e-procurement?

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We are going to learn

- What e-procurement is
- Benefits of e-procurement
- Traditional procurement process
- Reengineering of the traditional process using ICT

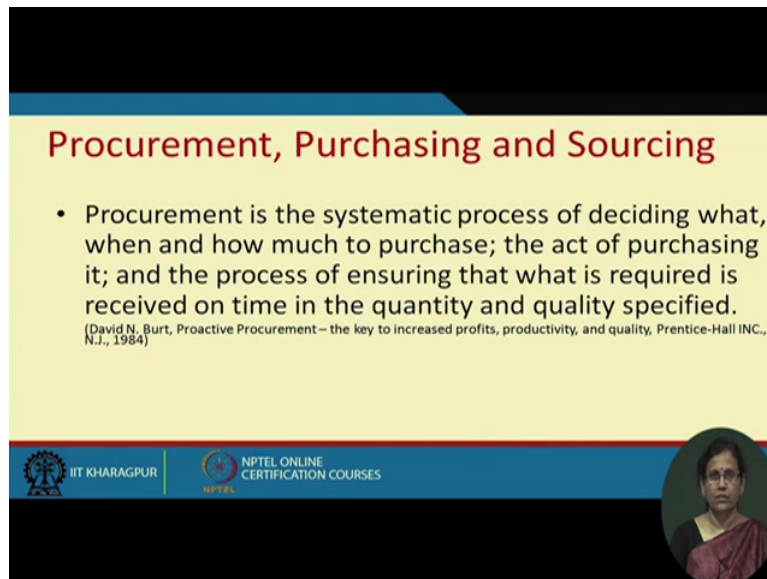
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Now to start with let us see what the procurement is? In fact here three terms when we people talk about procurement three important terms comes in. One is your procurement, second one is your purchasing, third one is your sourcing. Now what is the difference between two? In fact the last one is included in the previous one. That is sourcing is a part of purchasing and purchasing again is a subset of the procurement. So what is procurement?

Procurement is the systematic process of deciding what, when and how much to purchase and the act of purchasing it and the process of ensuring that what is required is received on time in the right quantity and quality specified. So which means starting from the indentation till your supplier evaluation the whole thing is actually included in the (proc) procurement process.


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Procurement, Purchasing and Sourcing

- Procurement is the systematic process of deciding what, when and how much to purchase; the act of purchasing it; and the process of ensuring that what is required is received on time in the quantity and quality specified.
(David N. Burt, Proactive Procurement – the key to increased profits, productivity, and quality, Prentice-Hall INC., N.J., 1984)

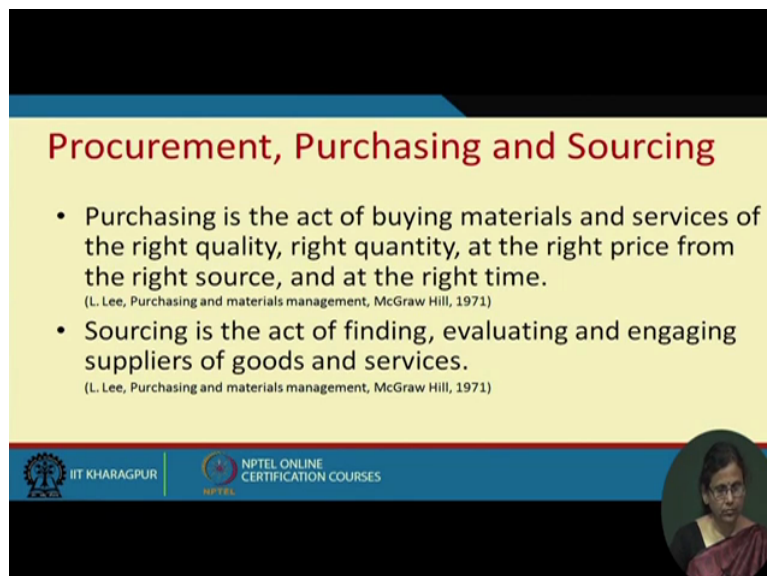
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Now when it comes to purchasing, purchasing is only the act of buying the material and services with a right quality and right quantity and at the right price from the right source and at the right time. So this is only the act of purchasing. But before this purchasing takes place you have to know which material to purchase so you have to go through certain indentation process, you have to prepare your requirements and so on.

So this purchasing is just a subset of the procurement. Then comes the term sourcing. What is sourcing? Sourcing is the act of finding, evaluating and engaging the suppliers of goods and services.


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Procurement, Purchasing and Sourcing

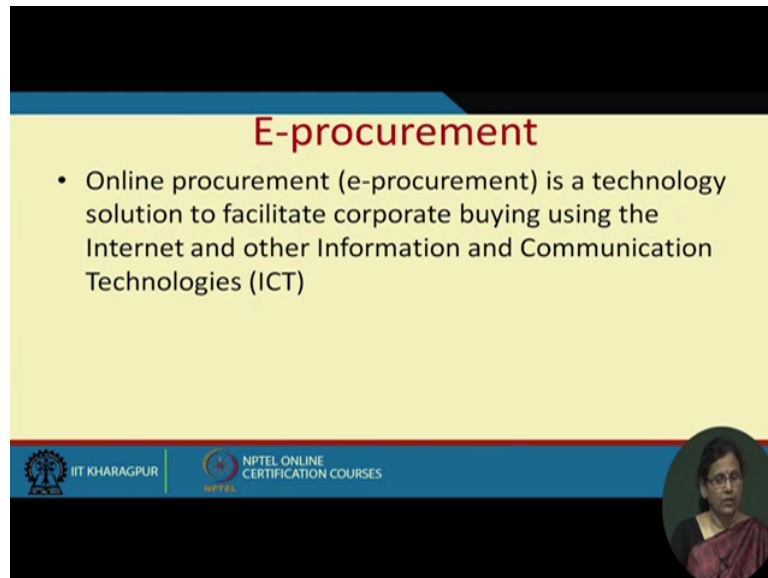
- Purchasing is the act of buying materials and services of the right quality, right quantity, at the right price from the right source, and at the right time.
(L. Lee, Purchasing and materials management, McGraw Hill, 1971)
- Sourcing is the act of finding, evaluating and engaging suppliers of goods and services.
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So basically it is about finding the right supplier. Now what is e-procurement then? E-procurement is the application of (info) various important information and communication technologies and specifically internet to facilitate the corporate buying. Or in other words online procurement is a technology solution to facilitate corporate buying using the internet and other ICT tools.

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E-procurement

- Online procurement (e-procurement) is a technology solution to facilitate corporate buying using the Internet and other Information and Communication Technologies (ICT)

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So these are few benefits of procurement. It reduces administrative cost, it shortens order fulfillment cycle, it lowers inventory cost, it lowers the price paid for the goods by inducing the competition among your suppliers. Then it also increases the collaboration among the partners through technological intervention and helps in planning together.

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Benefits of e-procurement

- Reduced administrative costs
- Shortened order fulfillment cycle
- Lowered inventory levels
- Lowered price paid for goods
- Increased technological collaboration and planning with business partners

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So here we are going to see two example (situ) cases where and how it benefited the specific company? The first one that we are going to look at is actually General Electrics Trading Process Network. In fact let me tell you this is one of the very first initiative for automating the procurement process by any corporate house. So what are the various features of this General Electrics Trading Process Network?

So here they had the facility for the buyer to post a request for a proposal on the internet for access by prequalified suppliers. The suppliers were able to download the request and submit the bids electronically. Then the buyer was able to evaluate the bids, negotiate online and places the order with the lowest bidder. This system also facilitated transaction processing that is for example automatically (recon) reconciling the purchase order with invoices as a part of the payment process.


Then this trading process network also managed the contract agreement components of purchasing process.

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General Electric's (GE's) Trading Process Network (TPN)

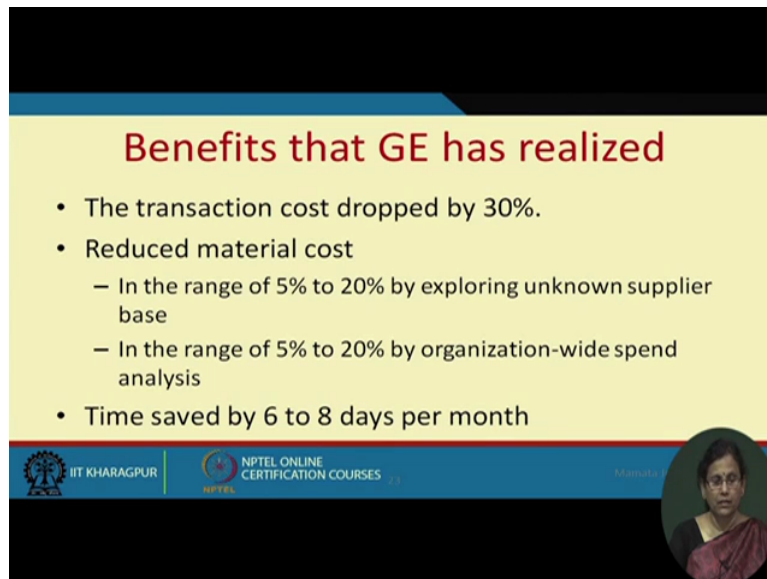
- The buyer posts a request for proposal on the Internet for access by prequalified suppliers.
- The suppliers download the request and submit bids electronically.
- The buyer evaluates the bids, negotiates online, and places the order with the lowest bidder.
- The system also facilitates transaction processing
 - Ex. automatically reconciling purchase orders with invoices as part of the payment process.
- TPN also manages contract agreement components of the purchasing process.

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And look at the benefits that GE got. The transaction cost was dropped by 30 percent. There was a reduction in the material cost and the cost was (rang) ranging from 5 to 20 percent by exploring the unknown suppliers and in the range of 5 to 20 percent by the organizational wide spend analysis. We are going to learn about spend analysis little late. And the procurement cycle time was actually got reduced and there was a time save of by 6 to 8 days per month.

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Benefits that GE has realized

- The transaction cost dropped by 30%.
- Reduced material cost
 - In the range of 5% to 20% by exploring unknown supplier base
 - In the range of 5% to 20% by organization-wide spend analysis
- Time saved by 6 to 8 days per month

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This particular example the second example that we are going to look at, the second case that we are going to look at is actually something we have already discussed at length. It was about the Tata Steel procurement solution. And as we have discussed in that class Tata Steel actually uses four different options. First one is its metaljunction which is an e-market plus for steel industry sponsored by consortium of SAIL and Tata Steel.


Though it was initially started with SAIL and Tata Steel now almost all the big steel companies are now part of this metaljunction. And here all kind of non routine items they purchase and they also sell which of course we are not talking about e-procurement but they sell some of their products through this metaljunction.

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Different e-Procurement solutions at Tata Steel

- Metaljunction.com – an e-market for steel industry sponsored by a consortium of SAIL and Tata Steel
- An internal e-Bidding solution
- E-negotiation solution
- Online Stock Information System for VMI suppliers

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Then they also have one internal a bidding solution. As I have told you this was earlier they used to have internal e-bidding solution which was actually getting integrated with their ERP system. But right now they are actually using a third party solution providers platform for this e-bidding. Then they also had one e-negotiation solution internally developed and they had a stock information system available for their vendor managed inventory suppliers.

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Different e-Procurement solutions at Tata Steel

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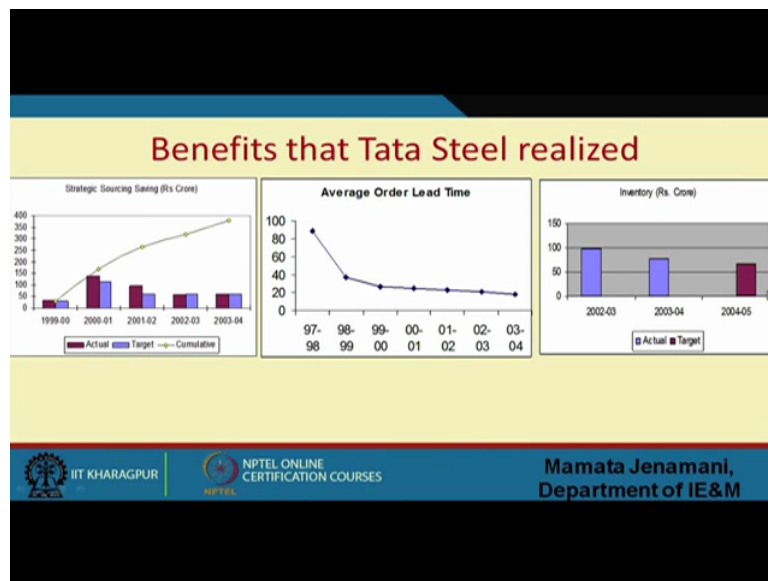


And this is the benefit over a period of 1999 to 2004. Around 2004 this is the benefit that they obtained.

There was a strategic sourcing saving which in the first adoption it actually got you know like it was actually they wanted to reduce the cost and they were actually initially there was a

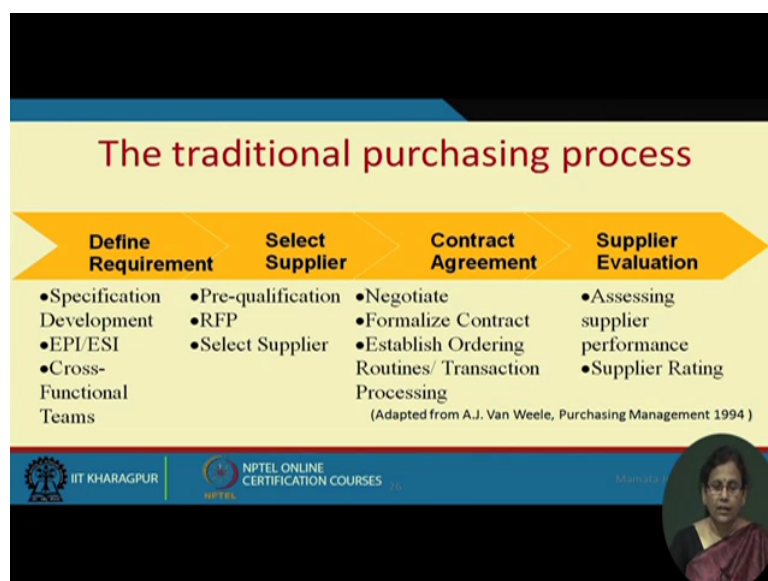
difference between their target value and their actual value but slowly they converse and by the end of 2003 and 04 both their target and as well as actual cost saving strategic sourcing saving was same. Similarly their order lead time got reduced substantially and their inventory cost also got decreased over the years.

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Now with these two motivating examples one was from the GE trading process network which was one of the very first application of adoption of e-procurement by any corporate house and the second one was a motivating example about the Tata Steel which is a company from our country only. Then let us try to understand how this e-procurement what all changes have happened in the traditional procurement process through (inter) this ICT intervention? This is the traditional purchasing process.

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In this traditional purchasing process you have four stages. First one is you have to define the requirement, then you have to select the suppliers, then you have to carry out the contract

management activities and finally evaluate the suppliers. So in the first one while defining the requirement first task is you develop the specification. When the specification for a new product gets developed many times there is early purchase department involvement and early supplier involvement.

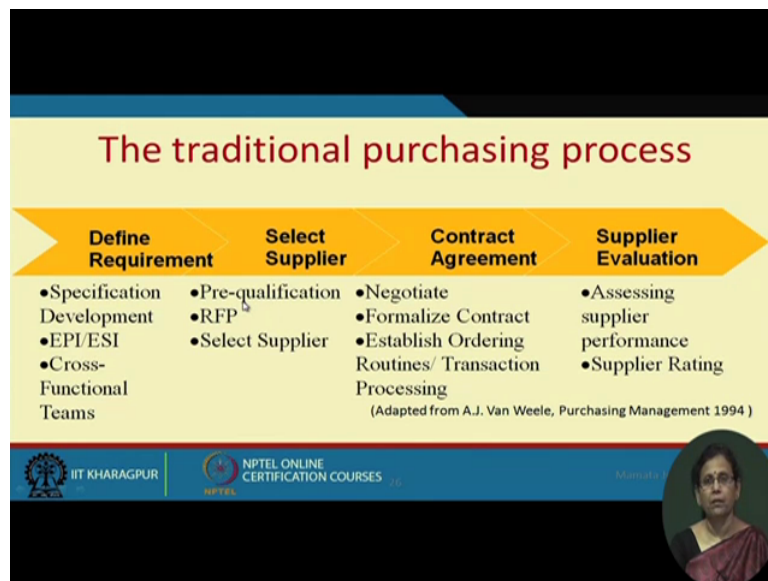
You take the help of supplier to come up and the help of purchase department to come up with your specification. And this defining the requirement are many times a cross functional activity. It need not be pertaining to your own department. Let us say as an industrial engineering department we would like to buy a specific software. We may take help of some other department let us say our computer and information centre to find out about the software and to find out what features the software should have?

Then the next stage is your selecting the supplier. In this while selecting the supplier most of the time the company will be maintaining its own supplier base where the suppliers we have preregistered list of suppliers. And every supplier is not capable of providing every kind of item. So you have to be getting from your company supplier database you should select the appropriate suppliers which we call as the prequalified set of suppliers.

And once we have this prequalified set of suppliers we call for quotation. We request for the proposal and once we get the proposal we will be finalizing our specification and then we will ask for the quotation. Then once we get the quotation and typical as you know there will be in a typical two cover system you will have a technical bid and price bid and technical bid will be opened.

Then based on if the supplier actually qualifies in the technical bidding session then you will be opening the price bid. And that is how you select the supplier.

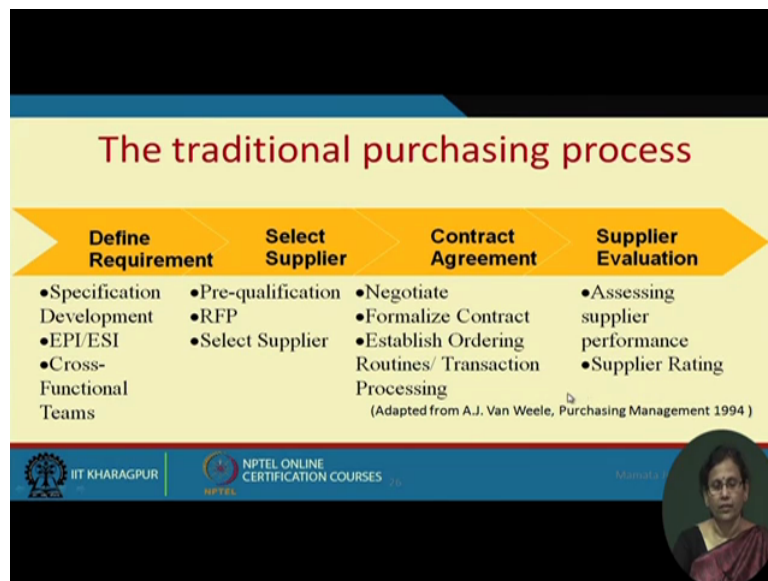
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Then the next one is actually contract management. This contract management has many stages. Once the supplier is selected usually the L1, the person showing the lowest price will be getting selected. But usually L1, L2 and L3 three of them will be asked to compete with each other by and giving opportunity to the L2 and L3 buyers to further decrease their prices. So and with L1 also you can negotiate to bring the price further down.

Then after this negotiation is over you go for (formal) formalizing the contract. After the contract is formalized you establish the ordering routine, how the items are going to arrive and how the appropriate transaction processing activities will be related to it? Then final is your supplier evaluation. After you get up to the actual delivery takes place you evaluate the suppliers performance based on various parameters like his quality, his delivery schedule and so on and finally the supplier gets a rating.

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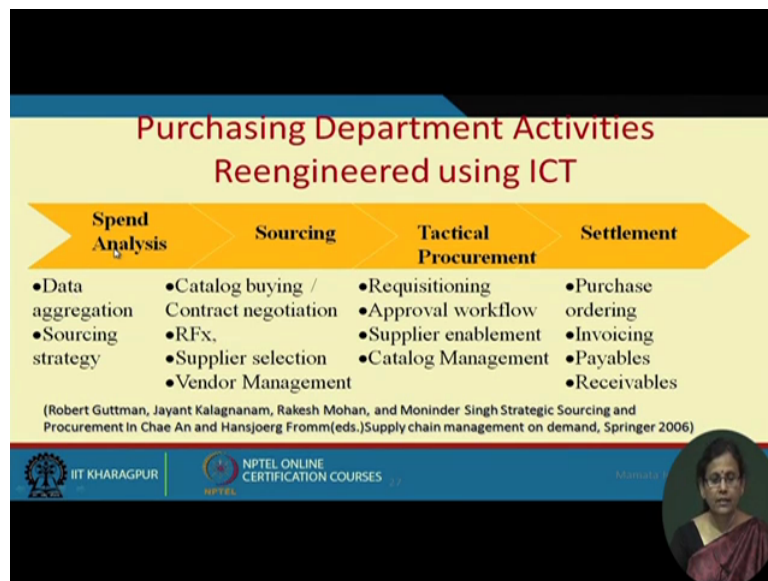


Now with the intervention of ICT definitely (supp) this particular process is not going to change drastically. In fact as we have discussed in one of the earlier classes some of the processes now are to be improved and reengineered. So now we are going to see that because of this ICT intervention how some of the activities in the purchase department have got reengineered. But some of the activities cannot be reengineered. For example let us look at this defining the requirement.

Now this defining the requirement can this process be automated? while discussing about the type of decision making we were talking about three kinds of decision making situations. Structured, semi structured and unstructured. Basically defining the requirement is a very unstructured decisions. So therefore this process even if you have ICT tools and techniques, completely automation of this one is not possible.

So therefore basically this part will not be a part of your reengineered process due to ICT intervention. However due to ICT intervention many things happen. Basically this improved procurement cycle because of ICT has four stages again.

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First one is spend analysis which is actually possible because of ICT intervention and this particular part was not there in your traditional process. So this spend analysis involves data aggregation, deciding sourcing strategy, etc. Then next one is your sourcing. This sourcing again you have various options now available for sourcing. It is not that traditional to cover the tendering process is adopted here.

Here you have now various options for getting the contract. It can be catalog buying, it can be a contract negotiation, it involves this request for proposals, request for quotation and so on. Then supplier selection takes place. Then you have vendor management software to manage the life cycle of a vendor during a particular purchasing process. Then next is your tactical procurement. Here making the requisition, approving the workflow, supplier enablement, (cataga) (manag) catalogue management these kind of things can happen.

And if you look at this, these are actually as an indicates. They are not very strategic activities. They are routine activities. And finally (pro) there has to be settlement processes. So finally the purchase order has to be issued, invoice is to be made, accounts payable and receivable needs to be managed.

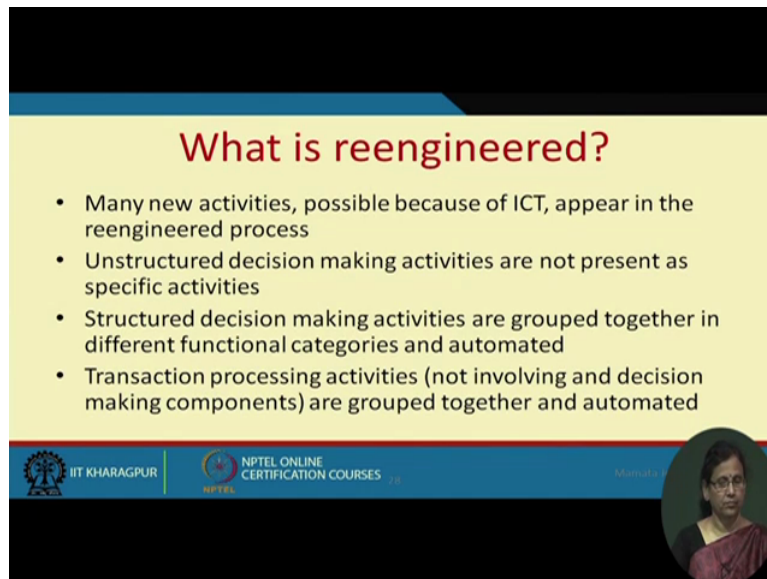
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So with this we can see that many things have been reengineered. Now what all have been reengineered? Many new activities are possible because of ICT which appear in the reengineered process. Now what are those? For example your spend analysis. So this spend analysis is one of the activity which is now a part of e-procurement process. Then we also saw that the unstructured decision making activities are not present as not shown as specific activities under e-procurement cycle.

They are part of the procurement but they cannot be considered under e-procurement which is about automating the procurement process because those are unstructured activities and they cannot be automated. Then all the structured decision making activities are grouped together in different functional categories and automated. All the transaction (process) processing activities which do not have any kind of decision making components are grouped together and automated as transaction processes.

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What is reengineered?

- Many new activities, possible because of ICT, appear in the reengineered process
- Unstructured decision making activities are not present as specific activities
- Structured decision making activities are grouped together in different functional categories and automated
- Transaction processing activities (not involving and decision making components) are grouped together and automated

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Manali

Now let us have a look at what are (vari) various kinds of e-procurement models available for the user. The first one is the use of e-procurement software. So this e-procurement software or the catalogue software is actual an internet based software application that enables employees to purchase goods from approved electronic catalogues in accordance with company buying rules while capturing necessary purchasing data in the process.

Now this particular procurement software or the catalogue software is actually it is supplied this is a software which is actually developed or adopted by your supplier. This is not a part of your own corporation own company. So therefore it may be required that, that particular software may have to be integrated with your own internal system. Then second one is your internet market exchanges.


Now this internet market exchanges are third party service providers who are specialized in automating e-procurement processes. In fact they bring multiple buyers and multiple sellers together and they simply provide a virtual market place for them to interact. So such things are provided by third party and they are external to the organization information system. Now second one is your internet B2B auctions.

This internet based B2B auctions can either be conducted by the company itself or the company can take help of again some third party (ser) service provider who provides the platform for conducting such (B) B2B auctions. Then the fourth one is actually your internet purchase consortia. In fact one example of one internet purchasing consortia we have already seen in case of steel industry.

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E-Procurement Models	
E-Procurement model	Description
E-Procurement software	<ul style="list-style-type: none">Any Internet-based software application that enables employees to purchase goods from approved electronic catalogues in accordance with company buying rules, while capturing necessary purchasing data in the process.Can be coupled with the organization's information system
Internet market exchanges	<ul style="list-style-type: none">Web sites bring multiple buyers and sellers together in one central virtual market spaceExternal to the organizations information system
Internet B2B auctions	<ul style="list-style-type: none">Internet B2B auctionsExpanded base of potential suppliers from around the world.Can be coupled with the organization's information system
Internet purchasing consortia	<ul style="list-style-type: none">Gathers the purchasing power of many buyers to negotiate more aggressive discounts.External to the organizations information system

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So in case of steel industry we were talking about your metaljunction and we know that this metaljunction website provides a portal where many of the steel buyers and sellers actually come in and they transact with each other. So these are the four options for electronic procurement. Now let us try to differentiate how they are actually different?

If we try to differentiate in terms of whether the platform is provided by the supplier or by the seller or by the third party. For example the first one the procurement software or which is which we call as the online catalogue software is actually provided by the supplier. And the company has to integrate its business process with this particular supplier.

In fact if you are (ac) going to use any procurement software on any electronic catalogue provided by your upstream supply chain partner that is your vendor then what you have to do first is that you have to have already approved list of items which can be purchased from that supplier. And once that list is prepared than that list only will be displayed to your corporate buyers.

Typically the corporate buyers will be using their payment cards to buy the items from this catalogue with a pre specified or pre agreed price. Now the second one that is your internet market exchange. There is a subtle difference again between the internet market exchange and (inter) internet purchase consortia. In fact both of them are the third party (serv) service providers.

But the difference here is this internet market exchange is a third party which can provide a platform for different category of products. It is not that it is for only one kind of product. Whereas this internet (pur) purchasing consortia is for a particular industry. So (in) internet purchasing (con) consortia is for a particular industry whereas the internet market exchanges are for multiple industries.

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Then you have your internet based B2B auctions. Now this internet based B2B auctions can be conducted either by the company, it can be conducted by this internal market exchanges, it can also be conducted by your internet purchasing consortia. So let us try to (reca) recapitulate what all we have covered in this lecture. So first thing that we covered is that we actually understood what is the difference between purchasing, procurement and sourcing and we have understood that purchasing is a superset of procurement.

Procurement is only the buying and selling activities and sourcing is about selecting the right supplier. Then we saw that (pros) (pros) what is the traditional procurement process and how it got improved by the use of information and the communication technology. And then we also understood that because of information communication technology many new processes have been introduced and one such process is actually your spend analysis.

Then we also understood that because of these ICT technologies we can actually group decision support and transaction activities together in different groups and you can carry out the process. Then we also understood that what are various ways to conduct this e-

procurement activity? Thank you very much. Next class we are going to discuss the technical details involved in each of the processes.