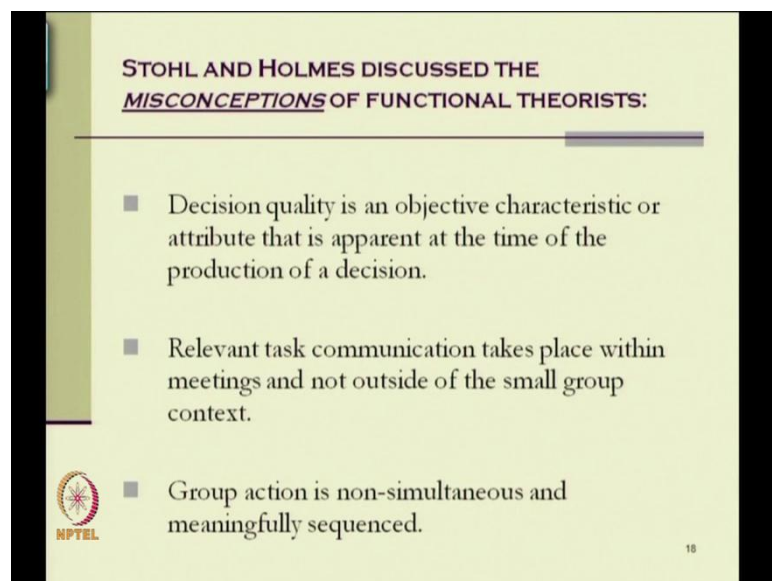


Organization of Engineering Systems and Human Resources Management
Prof. Vinayshil Gautam
Department of Management
Indian Institute of Technology, Delhi

Module - 1
Basics of Organizations and Human Resources Management
Lecture - 12
Operating Organizations (Contd.)


We have been looking at the different kind of decision making processes for understanding the issues of operating organizations. To take the discussion forward, before we move on to the next component of the task, it may be a good idea to take a look at what some of the leading researchers and scholars; not to overlook the practitioners have felt about the subject matter.

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STOHL AND HOLMES DISCUSSED THE
MISCONCEPTIONS OF FUNCTIONAL THEORISTS:

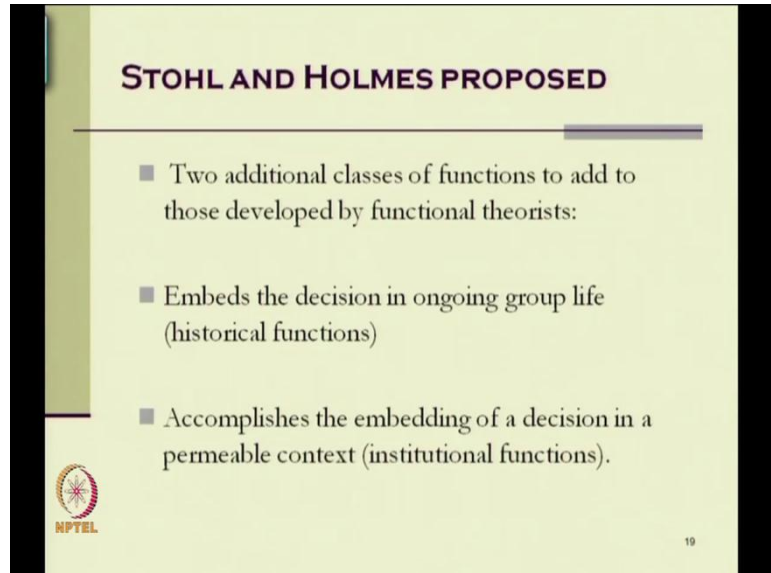
- Decision quality is an objective characteristic or attribute that is apparent at the time of the production of a decision.
- Relevant task communication takes place within meetings and not outside of the small group context.
- Group action is non-simultaneous and meaningfully sequenced.

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Stohl and Holmes discussed the misconceptions of the functional theorists. Basically, they had two objections. Decision quality is an objective characteristic or attribute that is apparent in the time of the production of a decision. Therefore, the functional theorists to them were making assumptions which were simply not valid. These two gentlemen were further of the opinion that relevant task communication takes place within meetings and not outside of the small group context. And finally, they were of the view that group action is non-simultaneous and meaningfully sequenced. If these two gentlemen have to have

their way, these three concerns have to be built into the thinking of the functional theorist before they can be accepted.

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STOHL AND HOLMES PROPOSED

- Two additional classes of functions to add to those developed by functional theorists:
- Embeds the decision in ongoing group life (historical functions)
- Accomplishes the embedding of a decision in a permeable context (institutional functions).

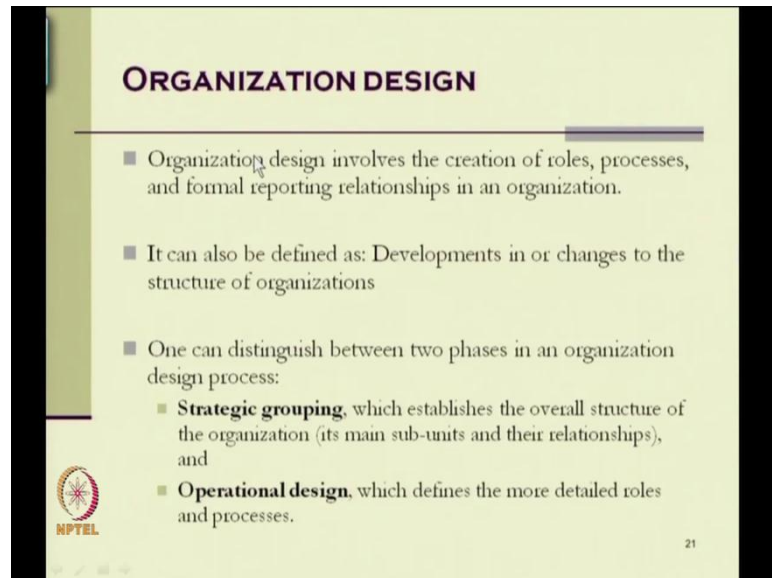
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I would like you to be aware of this debate, and that is what the learning process at this stage is about. Accordingly it was proposed by Stohl and Holmes, that two additional classes of functions be added to those developed by functional theorists. Because if you find that what somebody else has said is deficient, it stands to reason that you must suggest how it can be improved; and to improve it, it is important that according to Stock Stohl and Holmes, two additional efforts be made. One is that the action embeds the decision in the ongoing group life; this is the historical function. In other words, no decision making activity would be an autonomous variable. It would be embedded in some results of past action and some proposition, which would make it essential for the decision maker to recognize what the system would accept or would not accept.

It would accomplish the embedding of a decision is a in a permeable context, that is institutional functions. In other words, the decision being taken must be in systemic consistency and must be at peace with what the operational parameters of the organizations are. I would like to now move on quickly to a discussion on organization design and workflow. Some discussion has already taken place on design issues, and there is not going to be any need to re-view or re-state them. Because each lesson builds upon what the preceding lessons have achieved, but what this section of the presentation will


seek to do is to link up organization design with workflow, which is an essential part of operating an organization, handling workflows.

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ORGANIZATION DESIGN

- Organization design involves the creation of roles, processes, and formal reporting relationships in an organization.
- It can also be defined as: Developments in or changes to the structure of organizations
- One can distinguish between two phases in an organization design process:
 - **Strategic grouping**, which establishes the overall structure of the organization (its main sub-units and their relationships), and
 - **Operational design**, which defines the more detailed roles and processes.

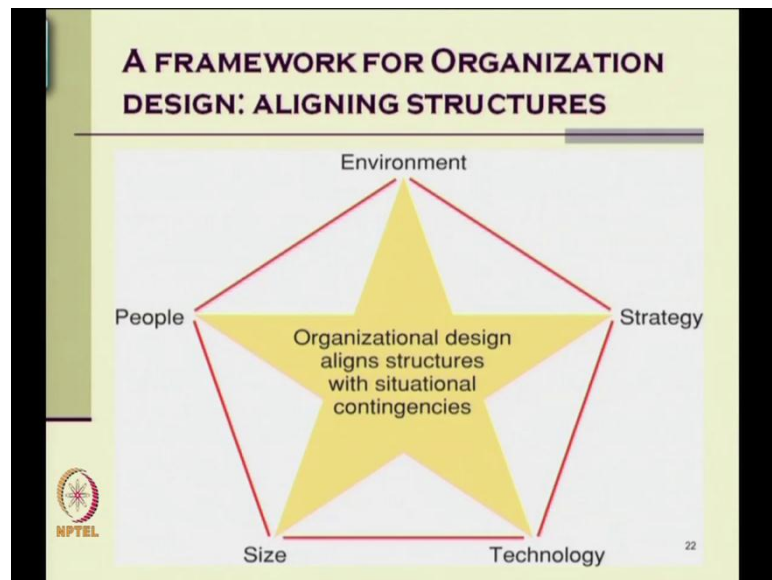
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So, if you will recall organization design involves the creation of roles, processes, formal reporting relationships in an organization. If organization designed involves the creation of roles, processes, and formal reporting relationship in an organization; then obviously, it has significance for the workflow. The workflow itself cannot take place unless it passes through the roles and the roles have to be defined in an operational sense, which raises the issue of job design and we have discussed that. It can also be defined as development in or change to the structure of organization.

One can distinguish between two phases in an organization design flow, process as strategic groupings which establishes the overall structure of the organization, its main subunits and their relationships and operational design which defines the more detailed roles and processes. So, there are the strategic groups and there are the operational designs. The strategic groups have to do with creation of the subunits and their relationships, and operational design has to do with more detailed roles and processes. Because remember this part of the discussion is an organization design and workflows.

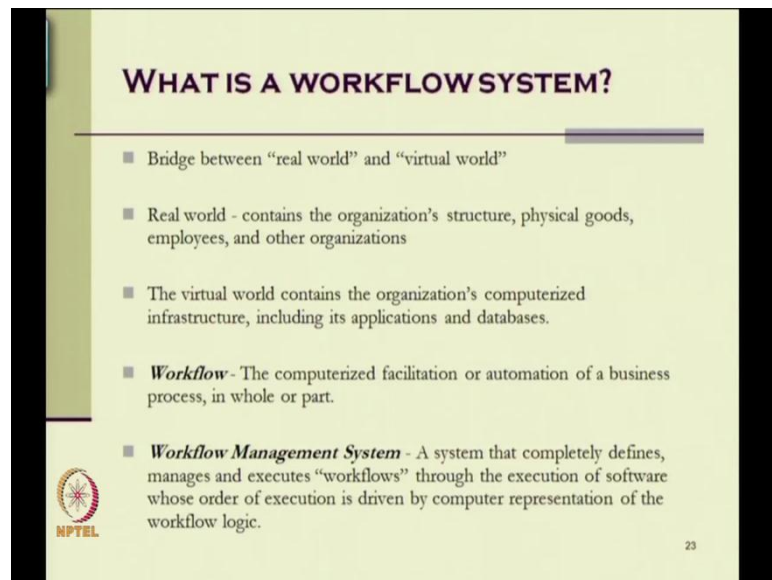
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So, workflows would require a mental model to understand that organization can have two groupings; one by strategy and other by operational design. This can be converted into a model or a framework for organization design aligning structures. So, what are the elements of the structures? As usual, we have environment, strategy; technology is being repeated; size and people is being repeated. We have added to people, environment, technology, two elements; size and strategy. As you notice, linking these six points of the pentagon is one thought. Organization designed aligns structure with situational contingencies. That is a very important thought.


I will pause here for a few moments to let that thought in to you namely, the thought that organization design aligns structure with situational contingencies. What is it that is attempted to be said here? In operating an organization, one has to walk on two legs or as it were move on to peace. One is the permanence of structures; two, the ephemeral character of a part of decision making which has to deal with situational contingencies. So, one has to combine the continuing stable component of operating an organization to the ephemeral and the passing component of an organization. A framework for organization design would involve aligning of structures. I would like to submit that this effort is an integral component of operating organizations.

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WHAT IS A WORKFLOW SYSTEM?

- Bridge between “real world” and “virtual world”
- Real world - contains the organization’s structure, physical goods, employees, and other organizations
- The virtual world contains the organization’s computerized infrastructure, including its applications and databases.
- **Workflow** - The computerized facilitation or automation of a business process, in whole or part.
- **Workflow Management System** - A system that completely defines, manages and executes “workflows” through the execution of software whose order of execution is driven by computer representation of the workflow logic.

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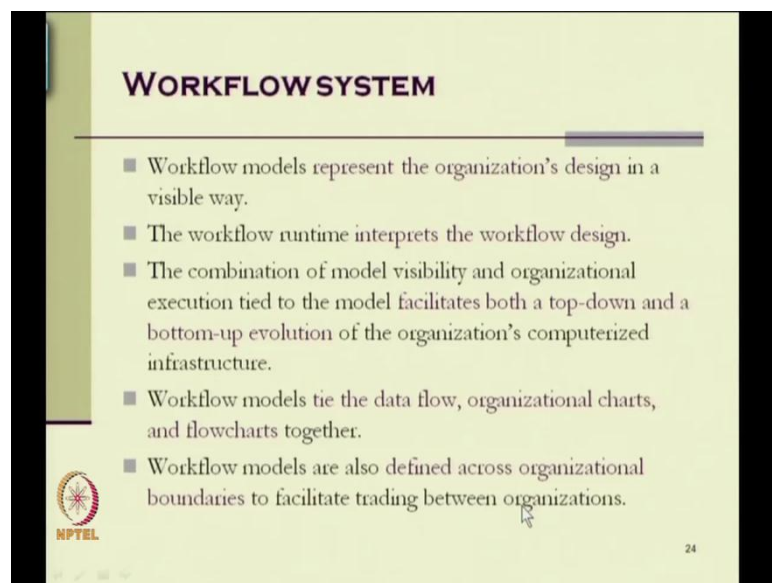
To focus more on the workflow system, I would like to walk you through some of the essential characteristics of a workflow. Because after all operating on a system is a part of optimal functioning of the workflows. Workflow can be defined as the bridge between the real world and the virtual world. If a play of words be permitted in the world of organization management, the virtual world itself has a very high impact role. The real world often becomes the label for the material world which can be experienced not just cognitively, but materially it is impact making say typically production conditions, inventory management, supply chain management, whereas whereas virtual world will have to do with decision making styles.

The real world contains the organizations structure, physical goods, employees, and other organizations, and we have just explained it. The virtual world contains an organization’s computerized infrastructure, including its applications and databases. If the real world contains organization’s structure, physical goods and employees, and the virtual world contains organizations, computerized infrastructure, including its application and databases. Then marrying the two would require workflow, which recognizes computerized facilitation or automation of business processes in whole or part and that is an important tool in operating organizations.

If that is workflow; that is the computerized facilitation or automation of a business process, then workflow management deals with a system that completely defines,

manages, and executes workflows through the execution of software whose order of execution is driven by computer representation of the workflow logic. Let us pause here to understand what is being suggested. Workflow management system is a system that completely defines managers and executes workflows through the execution of software, whose order of execution is driven by computer representation of the workflow logic; which means, there is no material flow matching that workflow management system. Hence, operating an organization requires the understanding of workflows in a very subtle sense but in a very operational sense.

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WORKFLOW SYSTEM

- Workflow models represent the organization's design in a visible way.
- The workflow runtime interprets the workflow design.
- The combination of model visibility and organizational execution tied to the model facilitates both a top-down and a bottom-up evolution of the organization's computerized infrastructure.
- Workflow models tie the data flow, organizational charts, and flowcharts together.
- Workflow models are also defined across organizational boundaries to facilitate trading between organizations.

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Workflow model represents the organization's design in a visible way. We have discussed design issues. Design issues are really issues of channelizing work, but you can't feel that design, you can't touch that design, and I am now taking forward what I have already explained to you earlier on. Organization's design has a very real relationship with workflow models. Unlike job design organization design, job design which cannot be felt or touched. Workflow models have visible impact have a situation or a positioning, where you can almost be cognizant of work having passed a certain stage.

If a discussion is on, and four people are being involved in it, and a contract has to be drawn up. Each of the four will make a contribution. Each of the four will help to move the contract forward. It may or may not be always committed to writing. But one thing which becomes increasingly clear is that work is moving. The level of sophistication of the

thoughts, concretization of ideas, conversion of ideas into clauses; the refinement of those clauses are indicators of workflows. The workflow runtime interprets the workflow design. Now this is very important. The workflow runtime defines the runtime. The combination of a model visibility an organizational execution tied to model facilitates both a top-down and a bottom-up evolution of organizations computerized infrastructure.


This is something which many systems people have not been able to grasp. That is the software, which an organization needs is to be modulated to the evolution of an organizations computerized processes; and therefore, the computerized infrastructure has to match the evolution that settle interface, where the virtual world meets the real world will essentially define how an organization is operating. It is not unusual; therefore, that where these levels of evolution of the virtual world have not been marked. Computerization has brought in severe strains on decision making and in many cases, decision making is calibrated or affected to be in synergy with what the computerized system or model can handle.

So instead of computerization aiding the decision making, the decision making processes are modulated to what computers can handle; that to say the least is an irony of the situation. The workflow models are also defined across organizational boundaries to facilitate trading between organizations, and therefore it raises questions of intra organizational relationships. No organization is an autonomous variable. No organization is a standalone organization. All organizations have a supply chain and have a distribution and a sales chain. Now of course there can be more players at either ends, but suffice it to say for the moment, that workflow is also between organizations and to understand workflow between organizations is central to grasping how do you operate organizations, which brings us to the question of what is the nature of organizations.

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NATURE OF ORGANIZATIONS

- **Rational** - Collective oriented to pursuit of relatively specific goals and exhibiting relatively highly formalized social structures (e.g., a business).
- **Natural** - Collective whose participants share a common interest in the survival of the system and who engage in collective activities, informally structured, to service this end (e.g., a religion or charity).
- **Open** - Coalition of shifting interest groups that develops goals by negotiation; the structure of the coalition, its activities, and its outcomes are strongly influenced by environmental factors (e.g., a standards organization).

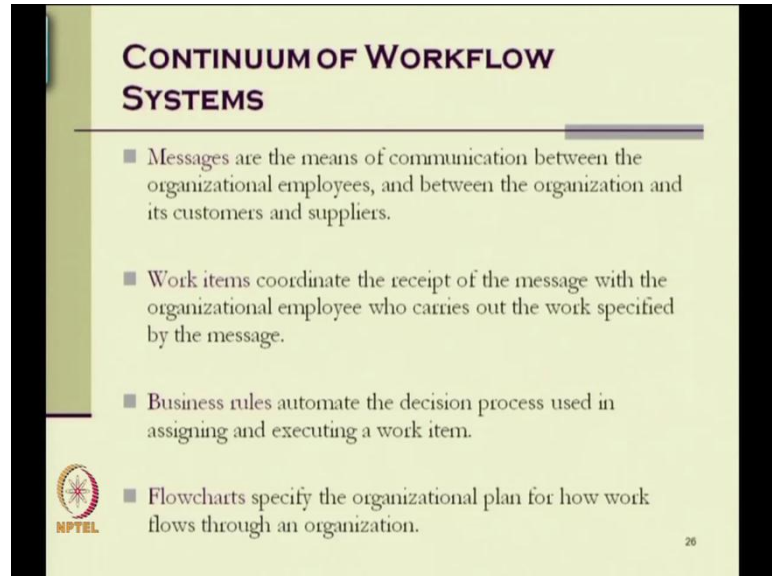
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When I talk of nature of organizations in this context, I am talking of something more material and cognizable, than what I was talking of when I was talking of understanding organizations. To get the discussion to serve the purpose for which it is directed, the nature of organizations can be rational, can be natural, can be open. Now, how to distinguish one word from another? If the nature is rational in terms of the nature of organization, collective it is collective oriented to pursuit of relatively specific goals and exhibiting relatively highly formalized social structures, that is business. It is to the pursuit of relatively specific goals exhibiting relatively highly formalized social structures. It is rational because it is pursuing business, its success, or otherwise is determined by the kind of results of business growth and profitability which can achieve.

A natural organization is a collective whose participant share a common interest in the survival of the system and who engage in collective activities, informally structured to service this end; for example, a religion or a charity. Here the end products are not that measurable. They are not seen in terms of profits, but the collective has a set of participants who engage in collective families; collective collective activities for an objective which is somewhat abstruse and difficult to grapple. A collision of shifting interest groups is an open system that develops goals by negotiation. The structure of the coalition, its activities, and its outcomes are strongly influenced by environmental factors. One could think of political groups who come together to share power in a system, and


who will walk out and walk in depending upon their calculation of what is going to work or what is not going to work.

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CONTINUUM OF WORKFLOW SYSTEMS

- Messages are the means of communication between the organizational employees, and between the organization and its customers and suppliers.
- Work items coordinate the receipt of the message with the organizational employee who carries out the work specified by the message.
- Business rules automate the decision process used in assigning and executing a work item.
- Flowcharts specify the organizational plan for how work flows through an organization.

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However that may be, it is important to recognize that there is a continuum of workflow systems. Workflow does never have a break. It is like the perennial stream. Messages are the means of communication between the organizational employees and between organization and its customers. One needs to recognize that the continuum of workflow has to do with an integrated throughput system which all organizations represent. Work items coordinate the receipt of the message with the organizational employee who carries out the work specified by the message.

So, please recognize that operating organizations has a very significant component of passing instructions and the receipt of the message and the complaints. The organization has to communicate within the system. The organization also has to communicate outside the system. Be that as it may, it is significant that communication modes will vary depending upon the players who are in that system and the kind of messages which are to be conveyed; and the size of the message, the medium of the message, the parties to the message will decide upon the actual flow content of the method of communication. But that is how organizations operate.

Work items coordinate the receipt of the message with the organizational employee who carries out the work specified by the message. Business rules automate the decision

process used in assigning and executing a work item. There is a need to recognize that even business rules are a communication method; and finally, flowcharts specify an organizational plan for how work flows through an organization. Operating an organization therefore is a complex process from planning to decision making, to understanding workflows, to recognizing that there has to be a continuum of messages and all these to keep an organization functioning and at an optimal level at that.

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MESSAGES IN WORKFLOW

- Need to deal with any type of message coming into the organization
- Can be routed to the correct employee for processing
- Can also be routed to a workflow
- Annotations are added to a message as it is processed

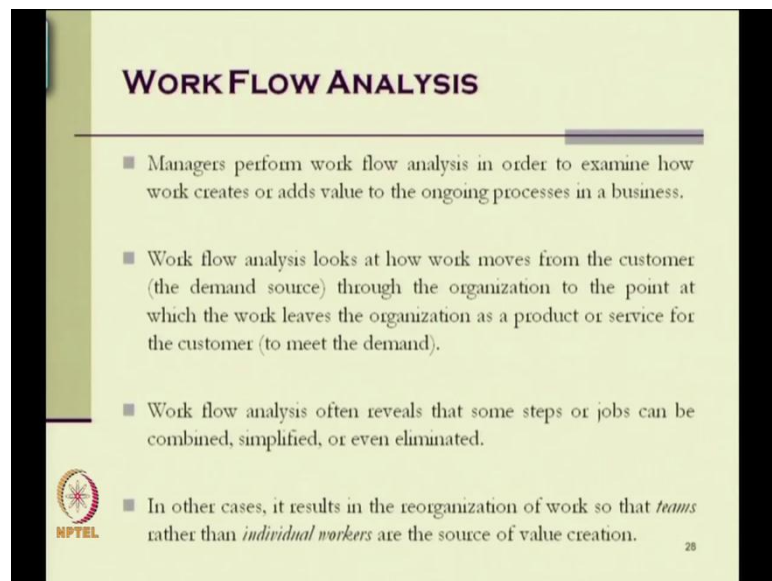
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There are messages in a workflow, because it deals with any type of message coming into the organization. Remember my reference to communication between organizations. If the messages coming into the organization are not decoded, then there may be a misfit between the linkage patterns, and therefore there may be internal jerks and jolts within an organization. Once it enters in the organization, it has to be routed to the correct employee for processing. So, a message travels from outside the organization to inside the organization. Once it reaches beyond the boundary of the organization, it is important that organization structures, processes, design enable that message to get to the correct employee.

Because if it does not get to the correct employee, then there will be all types of issues with reference to the job design, the role which was best equipped to handle that message; and hence, the character of the workflow is a central determinant to operating organizations. It is my case that proactive and worthwhile organizations always monitor

their workflow. They always have a requirement to make sure that there are no transmission losses in course of the workflow. No transmission loss of any variety can be acceptable, if the organization cannot risk loss of opportunity or loss of effectiveness. In fact, the truth is annotations are added to a message as it is processed. In other words, messages also acquire a structure.

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WORKFLOW ANALYSIS

- Managers perform work flow analysis in order to examine how work creates or adds value to the ongoing processes in a business.
- Work flow analysis looks at how work moves from the customer (the demand source) through the organization to the point at which the work leaves the organization as a product or service for the customer (to meet the demand).
- Work flow analysis often reveals that some steps or jobs can be combined, simplified, or even eliminated.
- In other cases, it results in the reorganization of work so that *teams* rather than *individual workers* are the source of value creation.

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To achieve all this, a workflow analysis is needed. A manager performs workflow analysis in order to examine, how work creates or adds value to the ongoing process in a business. This again is an important concept. No workflow. However efficient is worthwhile, if as it flows there is no value being added to the concern that is being handled. Value being added means the quality of analysis being improved, the quality of solutions to improve that situation being improved; and above all, the quality of choices being improved. So, one has to perform workflow analysis to make sure there is consistent and constant value addition at each level of the flow.

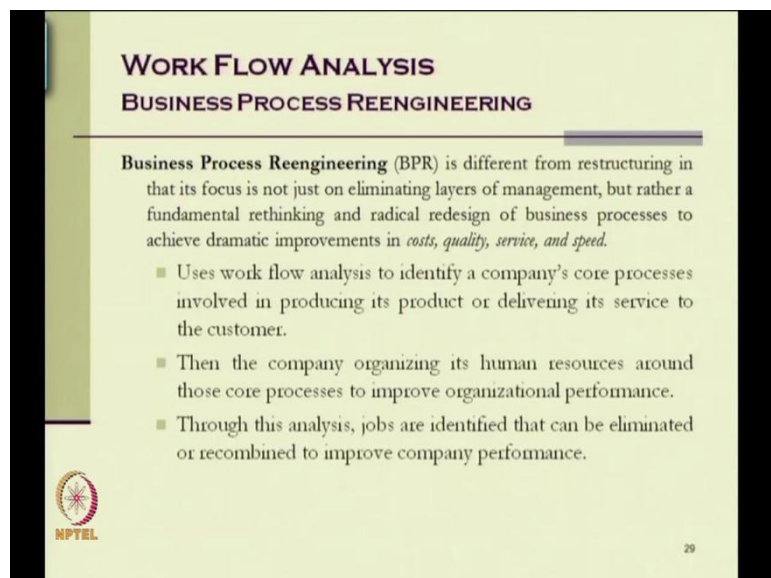
It will be worthwhile to remind ourselves that a system can be very, very efficient, but it need not be equally effective. The relationship between efficiency and effectiveness is not necessarily that of congruence. Therefore, many work analysts at times loose the sight of the woods for the trees, because they are so busy improving systems efficiencies; that the actual impact is almost out of focus. I would like to submit therefore, that the workflow analysis looks at how work moves from the customer; that is the demand source through

the organization to the point, at which the work leaves the organization as a product or a service for the customer again to meet the demand. So the demand came from the customer, and the finished product or the service would leave the organization to satisfy the customer. Workflow analysis often reveals that some steps or jobs can be combined, simplified, and even eliminated.

You will recall our discussion on job simplification by the simple act of bringing together certain COGNET tasks at one desk, and yes, you are quite right. My reference is to the example of the post office. In another case, it results in organization and re-organization of work, so that teams rather than individual workers are the source of value creation. I think this is an important point to remember.

If we agree that in the ultimate analysis, it is not a person who is hired but it is his skills which are being paid for. That but it is not necessary that every individual should carry with himself a self contained package of skills. He may need his skills to be supplemented by somebody else's skills to create the full package. Because the unity which is being sought is not the unity of the person, but the unity of the activity and there again, workflow analysis becomes critical and a significant part of moving organizations forward.


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WORK FLOW ANALYSIS
BUSINESS PROCESS REENGINEERING

Business Process Reengineering (BPR) is different from restructuring in that its focus is not just on eliminating layers of management, but rather a fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in *costs, quality, service, and speed*.

- Uses work flow analysis to identify a company's core processes involved in producing its product or delivering its service to the customer.
- Then the company organizing its human resources around those core processes to improve organizational performance.
- Through this analysis, jobs are identified that can be eliminated or recombined to improve company performance.

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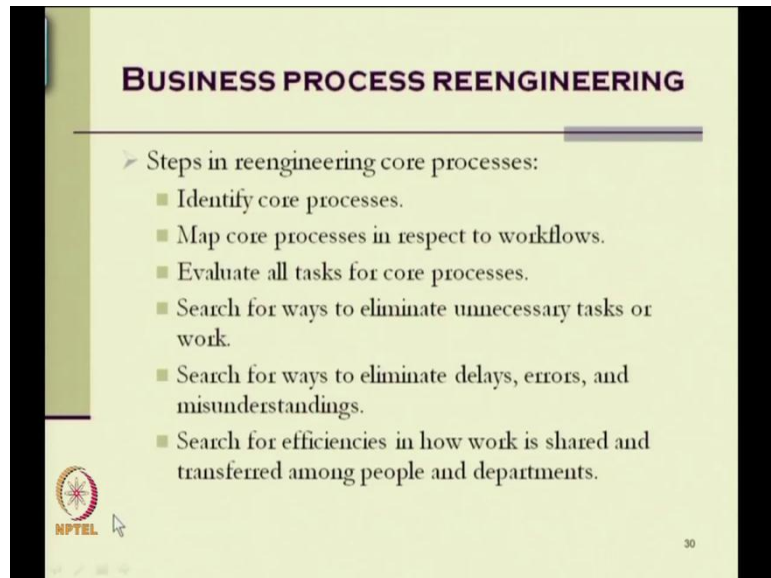
Workflow analysis therefore, is linked up with business process reengineering. Business process reengineering is different from restructuring in so much that it focus is not just on eliminating layers of management, but rather a fundamental rethink and a radical redesign

of business processes to achieve dramatic improvement in cost, quality, service ,and speed. Yes, these four elements: cost, quality, service, and speed would be a repetition. Because workflow analysis and business process reengineering are linked together, and analyses of workflow first lead to an improvement of the workflow analysis. How do we reduce costs, quality, improve service and reduce service losses, improve speed and cut down on time wastages.

The method would be using workflow analysis to identify a company's core processes involved in produce producing its product or delivering its service to the customer. So, business process reengineering process requires identifying a company's core process. Core process of a company is always a factor of the nature of the company. Is it a manufacturing company; is it a servicing company; is it a company which deals with a set of processes which are clearly identifiable and machine driven; or is it a company which deals with processes which are not necessarily machine driven, but very aggressively driven by logic intangible factors, and yet having huge impact worth. The company organizing its human resources around these core processes will improve its organizational performance.


We are again back to the organization socio-technical systems, where it needs to be understood that tasks are put together to create jobs. Jobs themselves may be around machines, may be around deliverables. They can be around any nucleus, but ultimately they require performance. Through this analysis, jobs are identified that can be eliminated or recombined to improve organizations performance. Therefore, be it workflow analysis, be it business process reengineering, the impact is again on the efficiency and effectiveness parameters, the thrust being as usual between the two on effectiveness.

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BUSINESS PROCESS REENGINEERING

- Steps in reengineering core processes:
 - Identify core processes.
 - Map core processes in respect to workflows.
 - Evaluate all tasks for core processes.
 - Search for ways to eliminate unnecessary tasks or work.
 - Search for ways to eliminate delays, errors, and misunderstandings.
 - Search for efficiencies in how work is shared and transferred among people and departments.

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We are not going to get into the details of business process reengineering here. But since this is one the ways in which it is possible to operate organizations, some attention is being paid here to the various components, and I will quickly list for you the various steps in business process reengineering, which has to do with steps in reengineering core processes; and they are identifying the core process, mapping core processes, evaluating all tasks for core processes, search for ways to eliminate unnecessary tasks or work, search for ways to eliminate delays or errors and misunderstands, search for efficiencies in how work is shared and transferred among people and departments.


These seven elements are representative of steps in organizing organizations. They are steps in operating organizations. They are steps in making organization effective and pre-result prone. Operating organizations is really putting organizations to productive use and for which various techniques are available. I have listed some. I am listing a few others, but I have also been at pains to keep you reminded of the fact that there are tangibles and intangibles.

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The slide is titled "WORK FLOW ANALYSIS" and "BUSINESS PROCESS REENGINEERING". It is divided into two sections: "Proponents" and "Critics". The "Proponents" section states that it allows for reinventing a company by making it 'lean and mean'. The "Critics" section quotes Hammer of 'Champy and Hammer' as saying "don't automate; obliterate." and notes that many critics see reengineering's greatest weakness as its lack of a human side or its depersonalization. The slide includes the NPTEL logo in the bottom left corner and the number 31 in the bottom right corner.

WORK FLOW ANALYSIS
BUSINESS PROCESS REENGINEERING

- **Proponents**
 - Allows for reinventing a company by making it 'lean and mean'
- **Critics**
 - Hammer of 'Champy and Hammer' actually says "don't automate; obliterate." To many critics, reengineering's greatest weakness is its lack of a human side, or its depersonalization.

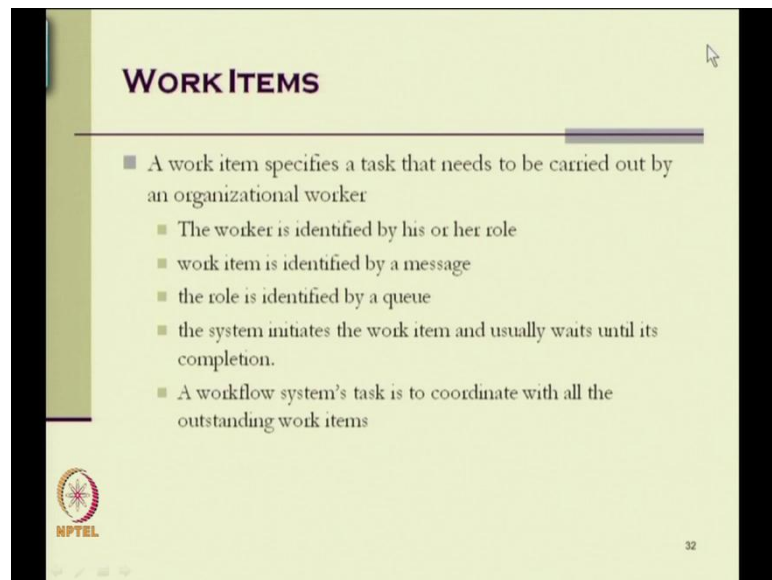
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And above all, workflow analysis is the king of which business processes reengineering is another technique; and since it has been popular for quite a while with people, some time has been spent in helping you to understand how workflow analysis has business process reengineering as one of its techniques, what it has to do with operating operating organizations, and I would like to conclude this discussion by drawing your attention to the arguments of the proponents and some arguments of the critics. Yes like everything else, there will be proponents and like everything else, there will be critics.


Proponents say that it allows reinventing of a company by making it 'lean and mean'. This was a slogan which went the rounds several times, about ten years ago, give me a lean and a mean organization. Today the model has somewhat changed, and people are willing to go for lean organizations. I do not think people are very keen to put up with mean organizations. The organizations today are supposed to have a human face. Then we have the critics of the system. Hammer of Champy and hammer actually says do not automate; obliterate. To many critics, reengineering's greatest weakness is its lack of human side or its depersonalization.

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WORK ITEMS

- A work item specifies a task that needs to be carried out by an organizational worker
 - The worker is identified by his or her role
 - work item is identified by a message
 - the role is identified by a queue
 - the system initiates the work item and usually waits until its completion.
 - A workflow system's task is to coordinate with all the outstanding work items

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But then the critics of the critics point out, that business process reengineering were never meant to be the answer to all problems. It was a logical extension of the scientific method of management which Frederick Taylor had talked about. And in business process reengineering, efficiencies were not very high; and the assumption very often used to be, that if you have efficiencies, effectiveness will follow.

I would like to conclude by the statement of what would appear the useful way of rounding of this discussion, and the useful way to my mind of rounding of this discussion is work involves people. People are therefore, integral to work. Effectiveness of machines requires effectiveness of people. Effectiveness of people requires continuous up gradation of skills and taking care of them. Put together the man-machine system will only be effective, if the operating principles of the organization require and marshal tools and techniques which take care of the both.