

**Designing Work Organization**  
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**Lecture 20**

**Role of IT in decision making**

In this particular session, we will talk about the role of the IT And the decision making process. When we talk about the role of information technology, then the decision how these information technology is playing the important role in the decision making and the controlling of those organization decision making systems. Management information systems role and an executive information system are there. Decision support system which is giving you the feedback control model and the management control system also. And as usual, the case study, research paper, book recommendations and the references are there. So, information is a source of learning, but unless it is organized processes and available to the right people in a format for the decision making, it is a burden not a benefit is there.

So, information technology evaluation is initially, IT system in organizations were applied to operations. These initial applications were based on the notion of the machine rooms efficiency that is current operations could be performed more efficiently with the use of the computer technology. The goal was to reduce the labor cost by having these computers take over some task. These systems became known as a transaction process systems are there, which automates the organization's routine day to day business transactions.

In recent years, the use of the data warehouse and the business intelligence software has expanded the usefulness of these accumulated data. Data warehousing is the use of the huge databases and it combine all of a company's data and allow users to access the data directly, create reports and obtain responses on what if questions are there. Here, in this case, these TPS Evolution of Organization Applications of Technology, you will find that is a strategy, plans and non-profiting is there and then this case there, when then this particular management level is there, where the non-program decisions are there, then the operational, past and programmed decisions are there. So, here the operations will be the transaction processing systems will be there. Now, this TPS system which will be having the data warehousing and data mining also and on the basis of this data warehousing and data mining, the operation systems will be decided.

Second is the decision making and the control is there. So, management information systems, decision support systems, executive information systems, management control

systems and the balance scorecard is there. The adding strategic values are the internal coordination and the external coordination. So, internal coordination is the intranet, social networking, knowledge management and enterprise resource planning is there. In the external coordination, integrated enterprise, customer relationships and the E-business is there.

So, this system complexity develops from the low to high for the direction of the information system evaluation which talks from the operations, then the decision making and control and the adding the strategic value through the internal coordination and the external coordination is there. Building a database at the large corporation is a huge undertaking that includes defining hundreds of the gigabytes of data from many existing systems, providing a means of continually updating the data, making it all compatible and linking it to the software that makes it possible for users to search and analyze the data and produce helpful reports. Software for business intelligence, also called analytic software helps users make sense of the all these data. So, business intelligence refers to a high tech analysis of a company's data in order to make the better strategic decisions. Sometimes referred to as data mining, business intelligence means searching out and analyzing data from multiple sources across the enterprise and increasingly from outside sources as well to identify patterns and relationships that might be significant.

Though the application of more sophisticated computer based systems, managers have tools to improve the performance of departments and the organization as a whole. And, these applications use information stored in corporate databases to help managers control the organization and make important decisions. The following figure illustrates the various elements of the information reporting systems and decision support systems and the executive information systems. These facilitate the rapid and the effective decision making. The elements for the control include the various management rapid control systems including the executives at dashboards and the procedure known as the balance scorecard is there.

Information systems for managerial control decision making is here, the corporate databases is there, information for the decision making and therefore, the information for the control is there. So, these MIS where the executive information systems and the reporting systems and they create these decision support systems are there. Here, the feedback control systems are there where the balance scorecard and management control systems behaviour versus the outcome control is there. So, here we will find that is this information system which has been created here, which is creating the either the MIS or through the feedback control system is there. If we go by the MIS then we find that is the executive information system, so that EIS will work or the reporting system decision support systems are there.

While, in the case of the feedback control system, it will be based on the balance scorecard and management system controls behaviour versus the outcome control is there. So, we will see now in the details these processes. A MIS is a computer based system that provides information and support for the managerial decision making. The MIS is supported by the organization's transaction processing systems and by organizational and external databases are there. The information reporting system, the most common form of the MIS, provides mid-level managers with reports that summarize data and support day -to -day decision making is there.

For example, when managers need to make decisions about the production scheduling, they can review data on the anticipated number of the orders within the next month, inventory levels and availability of the human resources. At Harrah's casinos, an information reporting system gives the track of detailed information on each player and uses quantitative models to predict such each customer's potential long term value. The information helps managers create customized marketing and the plans as well as provide the customers just the right combination of the services and rewards is there. While, when we talk about an executive information systems, it is a high level application that facilitates decision making at the highest level of the management. These systems are typically based on the software that can convert the large amounts of complex data into the pertinent information and provide that information to the top managers in a timely fashion.

For example, Motorola's semiconductor products sector, based in Austin, Texas ,had massive amounts of stored data, but managers could not find what they needed. The company implemented an EIS system that is a executive information system using the online analytical processing software so that they more than a 1000 senior executives as well as the managers and the project analyst in finance, marketing, sales and accounting department around the world could quickly get information about the customer buying trends, manufacturing and so forth right from there the desktop computers are there. So therefore, in that case here the executives were involved for these senior executives which are taking the having the information from their place only. A decision support system provides a specific benefits to managers at all levels of organization and these interactive computer based systems rely on decision models and integrated databases are there. Using decision-support software users can pose a series of what-if questions to the test possible alternatives are there.

Based on assumptions using the software as specified by the user, managers can explore various alternatives and receive information to help them choose the alternative that will likely have the best outcome. They even adopted APOS software to fasten and smoother

its operation is there. The other primitive use of information in organization is for control. Effective control system involves the use of feedback to determine whether the organizational performance that meets the established standards to help the organization attain its goals. The managers set up the systems for the organizational control and that consists of the four key steps in the feedback control model illustrated in the following figures.

The cycle of a control system includes the setting strategic goals, establishing the metrics and standards for the performance, comparing the metrics of actual performance with standards and the correcting and changing the activities as needed is there. A simplified feedback control system is there and that is a set of strategic goals, establish the metrics and the standards of performance and the compare the metrics of the actual performance is the standards and take the corrective actions as needed is there. So, therefore, in that case you will find that is the here the proper feedback control system and that is making these mechanisms are there. Now here, then example from the Jefferson Pilot Financial, a full service life insurance and annuities company, illustrates the feedback control model and the executives established goal for the one department to reduce the time between the receiving an application and issuing a policy by 60 percent and to reduce the number of reissued policies due to the errors by 40 percent. When performance was measured, the unit had met its goal of reducing reissues by the 40 percent and help surplus the application to policy goal reducing turnaround time by the 70 percent is there.

So, feedback control helps managers make needed adjustments in the work activities, standard of performance, or goals to help the organizations be successful. Management control system are broadly defined as the formal routines, reports, and procedures that use information to maintain or alter patterns in the organizational activities. These are feedback control systems include the formulating the information, information based activities for planning, budgeting, performance evaluation, resource allocation and the employee rewards are there. Targets are set in advance, outcomes compared to targets, and the variance reported to managers for the corrective action. The following figure lists four control system elements that are often considered the core of management control systems.

The budget and financial reports, periodic non-financial statistical reports, reward systems and the quality control system is there. Now, on the basis of this core control systems, the subsystems and the content and frequency has been developed. This is the subsystem is the budget financial reports are there and the content and frequency will be financial, resources, expenditure, profit and loss monthly. While, the statistical reports are there which are talking about the non-financial outputs weekly or monthly often

computer based. Reward system is there where, the evaluation of managers based on the department goals and performance set rewards yearly.

And, the quality control systems that is the participation, benchmarking guidelines, Six Sigma goals and the continuous is there. Now, here the budget is typically used under these management control system for the organization's expenditure for the year and then report actual cost on monthly or the quarterly basis. As a means of the budget the report actual as well as the planned expenditure for the cash assets and raw materials, salaries and the other resources so that managers can take action to correct the variances are there. Sometimes, the variance between the budgeted and actual amounts so far each line item is listed as a part of the budget. The balance sheet shows the firm's financial position with respect to assets and liabilities at a specific point in time.

An income statement, sometimes called a profit and loss statement summarizes the company's financial performance for a given time interval such as for the week month or a year is there. Managers can use periodic statistical reports to evaluate and monitor non-financial performance such as customer satisfaction, employee performance or the rate of the stock turnover is there. For e-commerce organizations, important measurements of the non-financial performance includes metrics such as the stickiness, how much attention a site gets over time, the conversion rate, the ratio of buyers so site visitors are there. And site performance data, such as how long it takes to a place on an order. Managers often track both non-financial and financial data by means of an executive dashboard is there.

An executive dashboard, sometimes called a business performance dashboard is a software program that presents key business information in graphical, easy to interpret form and alerts managers to any deviations or unusual pattern in the data is there. In management control system, in an executive dashboard managers can see at a glance they control indicators such as sales in relation to the targets, fill rates on orders, number of products on backorder, production status or a percentage of the customer service calls resolved and then drill down for the additional details. Dashboard systems coordinate and organize and display the metrics that managers consider most important to monitor on a regular basis with software automatically updating the figures. At various communications a dashboard system keeps track of more than 300 different measures of business performance in three board categories. Market pulse including daily sales numbers and market share.

Customer service for example, call the tenure rate times and therefore, in that case it is always call centers which are having the wait times and the problem resolved in the first call and the cost drivers such as the number of the repair trucks in the field is there. So,

these are the certain examples by which the business performance that can be measured on the dashboard. So, elements of a good control systems must possess the certain basic elements. Since they all play a major role, the absence of any of them can make the whole system weak and hence the managers must ensure that their control system contains the following basic elements and consideration.

The first one is the feedback. Feedback is the backbone of all control systems. This feedback is nothing but the information that managers use to correct their organization's actual performance is there. The aim of feedback is basically to adjust future actions using the previous experience. Now, the managers use the information they receive from the feedbacks to implement the corrective measures are there. Such measures generally help in bridging the gap between the actual performance of the organization and its goals are there.

The another part of the elements of a good control system is that must be control must be objective. The second essential requirement of a good control system is that it must always be objective. A subjective criteria should never be the basis of evaluating the actual performance. For example, evaluation of an employee's performance should comprise of the standards like working hours, productivity, efficiency, etc. Managers should not evaluate employees using the subjective prejudices is there.

The prompt reporting of the deviations are there. Now, this element of the controlling system basically requires the quick reporting of the deviations and the discrepancies. If some work is not going according to the plans, relevant managers must take notice of this immediately. This is because any delay in reporting problems and taking corrective measures can lead to financial losses for a business is there. So control system should be forward looking.

Control system can often suffer from the defect of delays in reporting of deviations and taking of corrective measures. Now, hence managers must ensure that their control system are forward looking and they will help in predicting these deviations in advance as well as the giving adequate time for the course correction is there. Now, on basis of this, the controls will be the most effective. The control system is also required to be flexible. A rigid control system can often make it ineffective in extraordinary and unpredictable situations.

So, it should thus, be flexible and open to changes. Managers must be able to adopt their control measures as per the requirements of the every possible scenario. The hierarchical suitability, almost all business organizations possess the management hierarchies comprising of managers at various positions and the levels are there. Since,

each manager performance controlling function at this level, the system itself must suit its organization's hierarchies. Every manager must have adequate powers for this purpose and the lower performance for evaluation of this should be effective.

So, economic control is also required. So therefore, every good controlling system has to be economical when it comes to its implementation and maintenance. In other words, its benefits should be outweigh its costs. So, an organization must be able to afford it and also derive all possible advantages from it. The control should focus on workers. Good control systems always focus on workers instead of the work itself.

Since, it is workers who implement these systems, everybody should be able to work with them effectively. Now, the strategic control points, it talks about not all deviation requires a level of attention and importance. For example, if an infrastructure company loses one government tender for constructing roads, it can work on the other projects are there. However, if the government blacklists it altogether due to its financial irregularities, this can be a huge issue. A good control system must be able to deal with the every deviation as per its seriousness.

is concerned. No organizations can afford equal importance to each and every problem. This is basically the whole aim of the strategic control points are there. So, control must be the simple to understand and sophisticated policies can make the elements of the control system are difficult to understand and the implement is there. So a good system, however, is always simple to comprehend and work on. Thus, before launching and controlling some measures, managers should first check whether their employees will be able to understand them.

They should be also try to resolve any ambiguity, any confusion that may arise later is there. Now, we will talk about the case study, the practical implications. So, Raymond has a hold of over 60 percent market share in worsted suitng in India and with the company exporting to over 50 countries, it ranks among the first three fully integrated manufacturers of the worsted suiting in the world. So USA, Canada, Europe, Japan and Middle East happen to be among its clients. The Raymond retail shops offer men complete wardrobe solutions.

These stores stock product brand, there are four brands namely the Manzony, Parx, Park Avenue and Color Plus is there. Raymond require all its franchises to adopt the POS (point of sale) software applied by the telly. All decisions related to the company's operations such as the stock report, sales report, billing inventory, CRM database and the loyalty card program are taken with the help of the POS are there. The advantage, this software had to offer the following. Because of the integration, a reduction in errors was

witnessed.

Orders given were more accurate to POS helped forecast demand. As a lot of manual operations were rendered redundant due to the introduction of POS, it lifted the morale of the employees. As the scanner about phase during the transaction details, so the database in real time it would be resulted much quicker and error free billing since no manual feeding was required and reduce the unnecessary paper drastically. The company's loyalty card program enabled customers to use the card country wide without the store having to maintain the separate records are there. The particular store could easily download the required data from the company's centralized database is there.

This is a research paper, Big Data Management and Environmental Performance. Here, the role of the big data decision making capabilities and decision making quality is here. Now, the purpose of this study is undertaken to examine the antecedents and role of big data decision making capabilities towards decision making quality and environmental performance Among the Chinese public and the private hospitals, it also examined the moderating effect on big data governance that was almost ignored in the previous studies. This conceptual paper was literature review method to the analyze and categorize the current research on organizational resilience. And, then based on the analysis of existing organization resilience studies, this paper proposes the integrated model for a more exclusive and integrated concept of an organizational resilience with the refined future research directions are there.

Findings revealed that data management challenges (leadership focus, talent management, technology and organizational culture for the big data) are significant antecedents. So, here because of these both public and private hospitals are work for these in this particular study were considered. Moreover, it was also found that the big data decision making capabilities played a key role to improve the decision making quality, effectiveness and the efficiency, which positively contribute towards the environmental performance in public and private hospitals of China. Now, public hospitals are playing greater attention to big data management for the sake of the quality decision making and environmental performance, then the private hospitals are there. This study provides guidelines required by the hospitals to strengthen their big data capabilities to improve decision making quality and environmental performance.

The proposed model provides an insight look at the dynamic capabilities theory in the domain of the big data management to tackle the environmental issues in the hospitals. The current study is a novel addition in the literature and it identifies that big data capabilities are the intention to be a game changer, player and effective decision making and to improve the environmental performance in the health sector is there. The



information technology strategy decision making marketing of managers, the book recommendation is informed by the strategic decision making for the managers and the authors are Henry C. La Crosse and the Junior is there. This book is published by the Wiley India Private Limited and here in this book, we will find that it gives the managers the tools to effectively manage technology in the 21st century organizations.

The author clearly demonstrated how to best allocate resources to and within the technology functions are there. He also includes a framework for determining the IT strategy given the dynamic environment of the electronic commerce and the internet is there. Here in this book, we will find that what we have discussed into the earlier sessions with the role of the information technology and that is to be taken. Here, I would also like to make a case study of the State Bank of India. Wherein these technology IT was introduced, computer was introduced and then it was resisted.

Many companies, they feel that this introduction of technology may be getting the losing of the jobs of the manpower is there. So, this threat for these union leaders or the organizations, employees, they have they feel that is a threat, but that time has gone. Now, we have seen like for example, I would like to give the example of SBI, State Bank of India, which has developed the technological system and now convert has working on this or from these internet banking to the mobile banking that is the worldwide wireless web to from these net banking was there. So, therefore, in this case from the WWW to the WWW, so therefore, in this case, we will find that is the if we are we are making the more introduction or the use of the information technology at the workplace, your decision making power that is becoming a very, very much easy is there. So, you will find a number of the models there, which are taking the help of the software's maybe the analytical software's are there, whichever you can use and find out that you are required to develop a particular the customized software also or when we are talking about the like here in the case study, it has been mentioned about the ERP is there and when we are talking about this particular ERP.

So, then we talk about that is the how this ERP system that is enhancing the efficiency is there. Now, to conclude this particular session, I would like to say that is whenever we are taking a particular decision and then the role of the information technology that becomes very crucial. First and foremost, is it is helping us to now working beyond the boundaries and therefore, in that case, if for decision making system, if you require certain information and that information earlier was restricted with the geographical areas. Now, that information for resolve the problem and that you can get across the boundaries and that is also in a very short period of time. So, therefore, in that case you find that is the this particular aspect of the collecting the data and the analyzing the data, interpretation of data and then having the converting that data into information,

information into knowledge, knowledge into wisdom and wisdom into truth.

So, therefore, in that case this particular pyramid that which we convert is that data is making a strong sense for the decision making process is there. So, with the help of the IT we create the knowledge management database management systems and this database management systems they are helping you for the taking the decisions are there, whether it is a manufacturing industry or whether it is a service industry is there. So, this book making these technology transforms in the organization, a dynamic model of IT strategy in a net centric economy, new business models, globalization in IT in international business, assessing the value of investing in IT, the productivity products, IT investment decisions. Now, you see that is when you we talk about that is the taking the decisions through the IT then definitely there is some cost is there and that cost is to be decided. That is a computer system, database, powerhouse networks, changing how business is done, ERP and CRM as I mentioned, that is how these business processes are helping in decision making and inclusion systems are there.

The haves and have nots, the digital divide is the US and the world ethical issues and look and to look ahead and because the many times when you are taking the help of the information technology, you should not forget the business ethics. These are the references in the book.

One is Richard L. Draft and M. T. O. S. the nature and use of the formal control system for manager control and strategic implementation. This, general management and this paper has been published, so please look into this particular paper. Similarly, like Leigh Buchanan, Working Wonders on the Web is there, Raymond's book is there which is information technology and changing framework of organization. Organizational science and Erik Berkman, How to Stay Ahead in the Curve that is a CEO that is who talks about that is general use of this particular technology which has been published into the Wall Street Journal. And the Megan Santosus is there, Motorola Semiconductor Product Sector is EIS and Gary Loveman, Diamonds in the Data Mine, Harvard Business Review that will be also giving you the help to study in detail further this particular aspect of this role of information technology into the business.

These are the further references for the papers are there which you can find out the research papers, how they are the studies have been conducted and what are their findings are there. I am sure this all will help you to understand what is the role of the information technology in the decision making processes there. Thank you. Thank you.