

**Management Information System**  
**Prof. Kunal Kanti Ghosh**  
**Vinod Gupta School of Management**  
**Indian Institute of Technology, Kharagpur**

**Module – 01**  
**Week – 07**  
**Lecture - 30**  
**Information Systems (IS) Strategy**

Hi, welcome to the 1st module of the 7th week related to our course on “Management Information Systems”! Today's subject topic is ‘information systems strategy’.

(Refer Slide Time: 00:37)



**Information Systems (IS) Strategy**

- ❖ A strategy is a coordinated set of actions to fulfill objectives, purposes, and goals
- ❖ The essence of a business strategy is setting limits on what the business will seek to accomplish
- ❖ A business strategy is a plan articulating where a business seeks to go and how it expects to go there
- ❖ It is the means by which a business communicates its goals

NPTEL Online Certification Courses  
IIT Kharagpur

So, before we dive into the details of information systems strategy, it is essential, to know what is meant by a strategy. A strategy is commonly understood to be a long term action plans, action plans that have got a long term effect and depending on the context, this long term can be 3 years, 5 years, but since information technology is a rapidly changing field in here when we talk about information technology strategy, we refer to action plan spanning over say more than one year. It is between say 2 to 3 years.

So, what is a strategy? A strategy is a coordinated set of actions to fulfill objectives, purposes and goals and in the field of business management, we are basically referring to fulfilment of objectives, purposes and goals of a business enterprise or a firm.

So, the essence of a business strategy is setting limits on what the business will seek to accomplish. A business strategy is a plan articulating where a business fix to go and how it expects to go there. A business strategy is also a vehicle or a means by which a business enterprise communicates its objectives and goals.

(Refer Slide Time: 03:38)

**Information Systems (IS) Strategy**

- ❖ Strategy starts with a mission.
- ❖ A mission is a clear and compelling statement that states the purpose of existence of an organization – it basically describes what the firm is all about.
- ❖ A mission statement sums up what is unique about the firm.

NPTEL Online Certification Course  
IIT Kharagpur

The slide features a background with a stylized tree of nodes and icons representing technology and business. A video inset in the bottom right corner shows a man in a white shirt and tie speaking. Logos for NPTEL and IIT Kharagpur are visible at the bottom.

So, every strategy starts with a mission and for a business enterprise, this mission basically refers to the very purpose of existence of that business. In common parlance, a mission is a clear and compelling statement that states the purpose of existence of an organization.

It basically describes what the organization is all about. A mission statement reflects what is unique about a particular organization or a firm, how it is different from its competitors or rivals.

(Refer Slide Time: 05:25)

**Information Systems (IS) Strategy**

❖ Mission statements about computer companies:

Company	Mission Statement
Amazon	We seek to be Earth's most customer-centric company for three primary customer sets: consumer customers, seller customers and developer customers
LL Bean	Sell good merchandise at a reasonable profit, treat your customers like human beings and they will always come back for more

NPTEL Online Certification Course  
IIT Kharagpur

If you look at the mission statements of some computer companies for example, Amazon, let us see what that mission statement is; we seek to be the earth's most customer centric company; mind the term, most customer centric company.

So, basically it indicates responsiveness for three primary customer sets; consumer, customers, seller customer and developer customers [FL] customer centricity is at the core reflecting the purpose of existence of Amazon. Let us look at the mission statement of LL Bean. Sell good merchandise at a reasonable profit.

So profit is not the be all and end all of this company, they want to make reasonable profit but the purpose of existence is to treat your customers like human beings, so that they will always come back for more.

So, they want to achieve the loyalty of customers by treating them like human beings and at a same time, they want to make a reasonable profit for the growth and survival of that company. So, that is the very basic purpose of LL Bean which is getting reflected through their mission statement.

(Refer Slide Time: 07:48)

**Information Systems (IS) Strategy**

- ❖ Management constructs this strategic plan in response to market forces, customer demands, and organizational capabilities.
- ❖ Some markets, such as those faced by manufacturers of laptop computers, and issuers of credit cards, are characterized by many competitors and a high level of competition such that product differentiation becomes increasingly difficult.

NPTEL Online Certification Course  
IIT Kharagpur

The slide features a blue and white color scheme with a background of faint icons including gears, a laptop, a credit card, and a network diagram. A small red dot is visible on the slide. A video overlay of a man in a white shirt and red tie is positioned in the bottom right corner of the slide.

So, management of a company constructs their strategic plan in response to market forces, customer demands and organizational capabilities. Some markets such as those faced by manufacturers of laptop, computers and say issue of credit cards are characterized by many competitors and the high level of competition, such that product differentiation becomes increasingly difficult.

So, scanning the environment, trying to identify the factors that will play a very important role in achieving the goals of the organization is very-very important when you frame a strategy.

(Refer Slide Time: 09:19)

**Information Systems (IS) Strategy**

- ❖ Other markets, such as those for airlines and automobiles, are similarly characterized by high competition but product differentiation is better established
- ❖ Customer demands comprise the wants and needs of the individuals and companies who purchase the products and services available in the marketplace.
- ❖ Organizational capabilities include the skills and experience that give the corporation a currency that adds value in the marketplace

NPTEL Online Certification Course  
IIT Kharagpur

The slide features a background with a blue and white color scheme, including a stylized atom symbol and a network diagram. A small inset image of a man in a white shirt and red tie is visible in the bottom right corner of the slide area.

Other markets such as those for say airlines and automobiles, they are also there is lot of competition but in here it is easy to establish product differentiation. In here customer demands, comprise the wants and needs of the individuals and companies who purchase the products and services available in the marketplace. And while framing strategies there is another thing that needs to be taken into consideration is the capability of the organization.

Organizational capabilities include the skills and experience that gives the corporation a currency that adds value in the market place, is you know strategy is all about deriving some competitive advantage to try to companies try to find out in what way they are different from their rivals, what are those things that they can do much better than their competitors. And capitalising on that strength, they try to frame their objectives, set their goals and lay down action plans through which those objectives and goals can be met.

(Refer Slide Time: 11:23)

The slide is titled "Information Systems (IS) Strategy". It features a background with a stylized tree of icons representing various information systems and a large atom symbol on the right. The text on the slide is as follows:

- ❖ Strategies Formulated by Information Systems:
  - Low-cost Leadership:
    - Organizations need to reduce their operational costs so as to deliver the product or service at the most optimum price.
    - Information systems play an important role in managing the operational cost of an organization.

In the bottom right corner, there is a video inset of a man in a white shirt and red tie speaking. At the bottom of the slide, there are logos for NPTEL and IIT Kharagpur.

Normally information systems they play a very important role in achieving a company's strategic objectives. At the same time since we had discussing the topic of information systems strategy sometimes people also understand that what are the long term action plans formulated and adopted by the information technology function because IT is also a function.

If you look at the value chain, information technology is a supporting activity sometimes known as a secondary activity which supports primary activities for fulfilment of strategy goals of the company, but then every such supporting function they also need to formulate their action plans over a long period of time.

Information systems strategy sometimes referred to those action plans which are formulated and deployed by that function in order to support these strategies of other related function with the overall objective of seeing that the company's objectives and goals are met.

That means, the business strategy of an enterprise and the strategy adopted by the information technology function should be consistent. The strategy adopted by the informations technology department or function must support the business strategy as well as the information technology strategy; must be such that it will enable the achievement of other functional objectives.

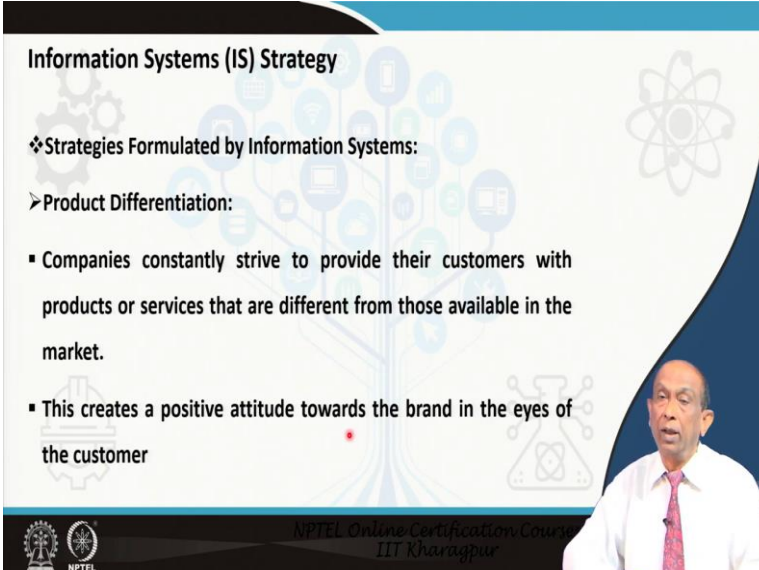
Now, let us look at the different kinds of strategies which are formulated by a business enterprise taking the help of information systems. So, first thing that we look at is a low cost leadership strategy.

Organizations they need to reduce their operational costs, so as to deliver their products and services to the customer at the best possible price which is basically optimum price subject to the constraints within which the companies need to operate and information systems, they play an important role in managing the operational cost of an organization. They help the organization to keep their operating costs at a minimum level.

So, the strategies that must be adopted by the information technology department or function in terms of buying the right kind of servers in kinds of providing the organization with the appropriate network infrastructure, storage infrastructure, backup infrastructure. The plans required for disaster recovery, all these together reflect the strategy or the action plans that information technology must deploy such that the organizational strategy is achieved or fulfilled.

So, when the organization its following the low cost leadership strategy information technology function must support the organization in terms of minimising their operational cost and so, the it infrastructure must be designed and maintained in such a way that objective is fulfilled.

(Refer Slide Time: 18:12)



**Information Systems (IS) Strategy**

❖ Strategies Formulated by Information Systems:

- Product Differentiation:
  - Companies constantly strive to provide their customers with products or services that are different from those available in the market.
  - This creates a positive attitude towards the brand in the eyes of the customer

NPTEL Online Certification Course  
IIT Kharagpur

Another commonly adopted strategy is by business enterprises. It is product differentiation companies. They try to deliver, manufacture and deliver products and services which have unique or which are different from the products and services delivered by their competitors.

Companies they constantly strive to provide their customers with products or services that are different from those available in the market. This creates a positive attitude towards that particular brand in the eyes of the customer; and in here, information systems should be designed and deployed in such a manner that it helps the organization to differentiate their products and services to establish a brand image which is unique from the customers' perspective.

(Refer Slide Time: 19:33)

**Information Systems (IS) Strategy**

❖ **Strategies Formulated by Information Systems:**

➤ **Focus on Niche Markets:**

- Information systems help organizations record the buying behavior and demands of the customers.
- This information enables companies to serve customers in an efficient manner.

NPTEL Online Certification Courses  
IIT Kharagpur

The third strategic approach commonly adopted by business enterprises is to concentrate on specific market segments and that strategic approach is known as focus on niche markets companies. They do not want to satisfy and deliver services to each and every customer or they do not want to provide services to the entire market.

A particular segment is their focus and information systems help the organisations record their needs, the demands and the buying behaviour of the customers in that particular segment where it wants to serve. This kind of information related to the demands or the needs of the customer enables companies to serve customers in an efficient manner.



(Refer Slide Time: 21:02)

**Information Systems (IS) Strategy**

❖ **Three Strategies for Competitive Advantage:**

Uniqueness Perceived by Customer      Low Cost Position

Industry wide	Differentiation	Overall Cost Leadership
Particular Segment Only	Focus	

NPTEL Online Certification Course  
IIT Kharagpur

So, you see uniqueness perceived by customer that is differentiation strategy, low cost production strategies, overall cost leadership and when we are focusing on a particular segment that is the focus on niche market.

(Refer Slide Time: 21:29)

**Information Systems (IS) Strategy**

❖ **Summary of strategic approaches and IT applications:**

Strategic Approach	Key Idea	Application to Information Systems
Porter's generic strategies	Firms achieve competitive advantage through cost leadership, differentiation, or focus	Understanding which strategy is chosen by a firm is critical to choosing IS to complement the strategy

NPTEL Online Certification Course  
IIT Kharagpur

So, if we summarise the strategic approaches, we find that firms achieve competitive advantage through cost leadership differentiation or focus and understanding which strategy is chosen by a firm is critical to choosing information systems to complement and support that strategy.

(Refer Slide Time: 22:05)

**Information Systems (IS) Strategy**

❖ Summary of strategic approaches and IT applications:

Strategic Approach	Key Idea	Application to Information Systems
Dynamic environment strategies	Speed, agility, and aggressive moves and countermoves by a firm create competitive advantage	IS are critical to achieving the speed needed for moves and countermoves. IS are in a constant state of flux or development

NPTEL Online Certification Course  
IIT Kharagpur

The slide features a speaker in a white shirt and red tie in the bottom right corner. The background includes a stylized atom icon and various technology-related icons like gears and a smartphone.

Sometimes the strategic approach may be dynamic environment strategies where speed, agility and aggressive moves and customer moves by a firm create competitive advantage.

Information systems are critical to achieving the speed needed for moves and counter moves. In here information systems are in a constant state of flux or development. Accordingly the action plans deployed by the information systems department must match those requirements.

(Refer Slide Time: 22:48)

**Information Systems Strategy**

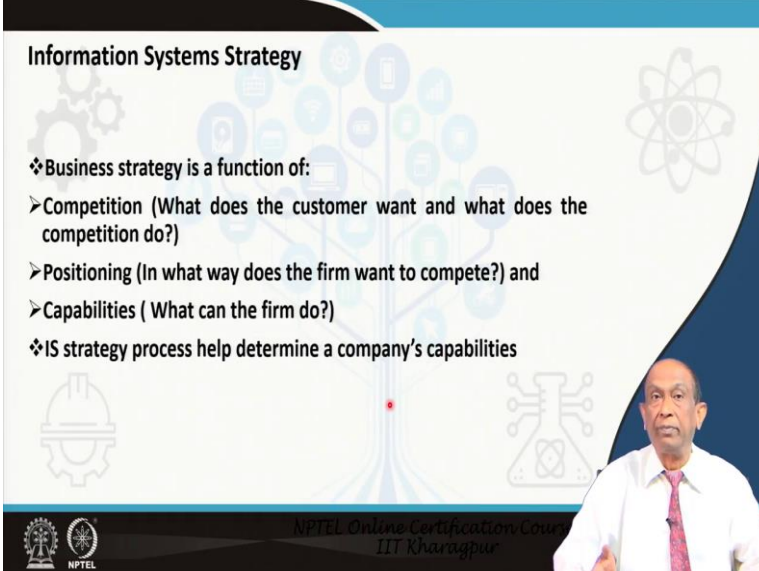
- ❖ Information Systems (IS) strategy is the plan an organization uses to provide information services.
- ❖ IS allows a company to implement its business strategy.
- ❖ In IS strategy, the deployment plan for the required technology to support the business needs is documented.

NPTEL Online Certification Course  
IIT Kharagpur

The slide features a speaker in a white shirt and red tie in the bottom right corner. The background includes a stylized atom icon and various technology-related icons like gears and a smartphone.

So, information systems strategy is the plan an organization uses to provide information services. Information system strategy allows a company to implement its business strategy. In information system strategy, the deployment plan for the required technology to support the business needs is documented and then subsequently deployed.

(Refer Slide Time: 23:24)



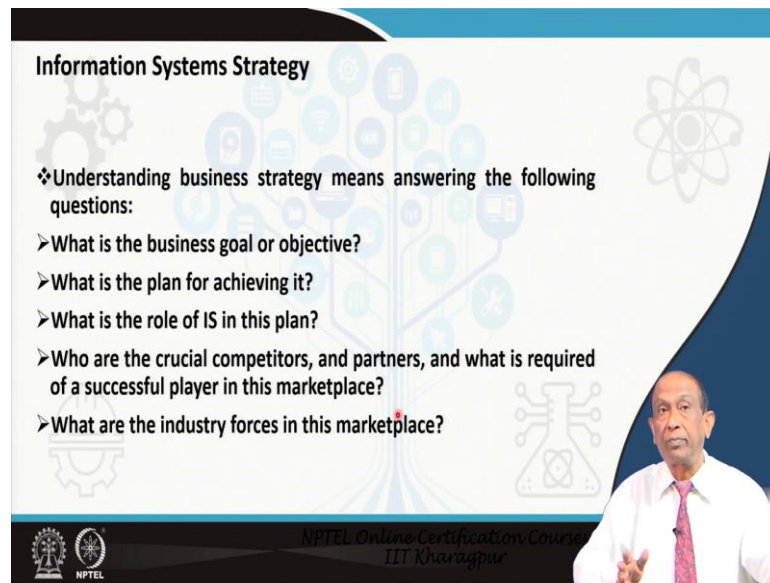
The slide is titled "Information Systems Strategy" and features a background with various icons representing technology and business. The text on the slide is as follows:

- ❖ Business strategy is a function of:
  - Competition (What does the customer want and what does the competition do?)
  - Positioning (In what way does the firm want to compete?) and
  - Capabilities (What can the firm do?)
- ❖ IS strategy process help determine a company's capabilities

The slide also includes the NPTEL logo and the text "NPTEL Online Certification Course IIT Kharagpur" at the bottom. A speaker is visible in the bottom right corner of the slide.

So, business strategy is the function of competition means what does the customer want and what a competitors are doing in order to fulfil those needs, how do I position my company, in what way my company wants to compete in the market, what are my capabilities. And information systems strategy the processes help determine the capabilities that a company has got.

(Refer Slide Time: 24:05)



**Information Systems Strategy**

❖ Understanding business strategy means answering the following questions:

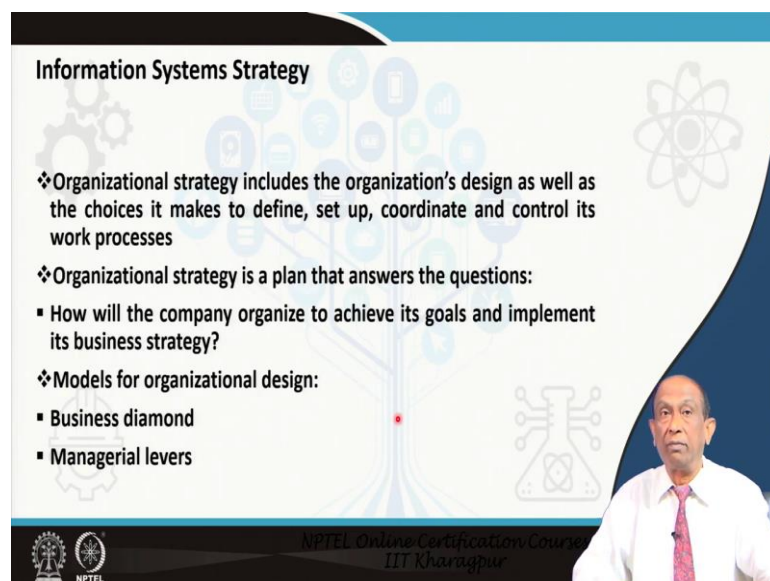
- What is the business goal or objective?
- What is the plan for achieving it?
- What is the role of IS in this plan?
- Who are the crucial competitors, and partners, and what is required of a successful player in this marketplace?
- What are the industry forces in this marketplace?

NPTEL Online Certification Course  
IIT Kharagpur

The slide features a background with a blue and white color scheme, including a stylized atom symbol and various icons representing technology and business. A speaker is visible in the bottom right corner.

If another information technology manager one wants to understand the business strategy, he has to answer, he is to find the answer to the questions. What is the business goal or objective, what is the company's plan for achieving it, what is the role of information systems in this plan, who are the crucial competitors and partners and what is required of a successful player in this market place and what are the industry forces influencing this marketplace.

(Refer Slide Time: 24:50)



**Information Systems Strategy**

❖ Organizational strategy includes the organization's design as well as the choices it makes to define, set up, coordinate and control its work processes

❖ Organizational strategy is a plan that answers the questions:

- How will the company organize to achieve its goals and implement its business strategy?

❖ Models for organizational design:

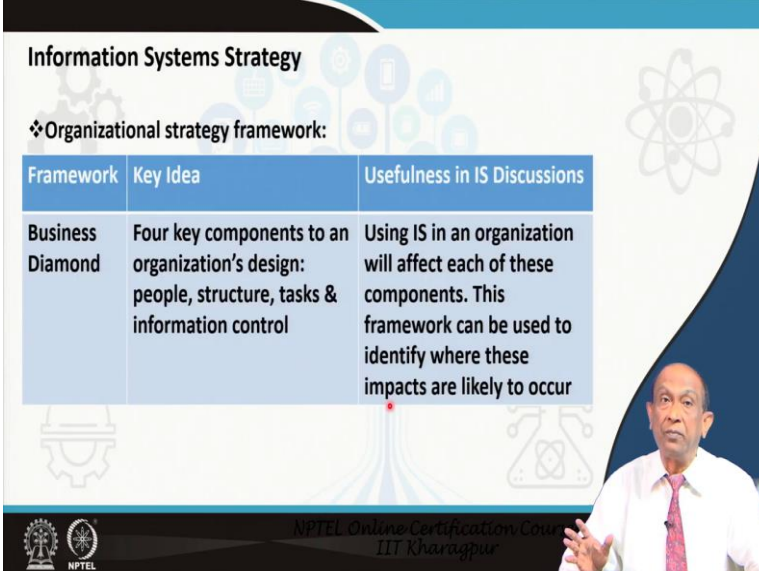
- Business diamond
- Managerial levers

NPTEL Online Certification Course  
IIT Kharagpur

The slide features a background with a blue and white color scheme, including a stylized atom symbol and various icons representing technology and business. A speaker is visible in the bottom right corner.

Organizational strategy is also very important. The design of the organization, the structure of the organization plays a very important role in shaping and helping the organization to achieve its business strategy and IS plays a very important role in enabling the organization structure and successful achievement of the organizational strategy.

(Refer Slide Time: 25:21)



**Information Systems Strategy**

❖ Organizational strategy framework:

Framework	Key Idea	Usefulness in IS Discussions
Business Diamond	Four key components to an organization's design: people, structure, tasks & information control	Using IS in an organization will affect each of these components. This framework can be used to identify where these impacts are likely to occur

NPTEL Online Certification Course  
IIT Kharagpur

The slide features a speaker in a white shirt and tie on the right side, gesturing towards the table. The background includes decorative icons like a gear, a lightbulb, and a network diagram.

So, there are various frameworks related to organizational strategy. One is business diamond. Using information systems in an organization will affect each of these components of this organizational framework related to organization design, people, structure, tasks and information control.

(Refer Slide Time: 25:46)

**Information Systems Strategy**

❖ Organizational strategy framework:

Framework	Key Idea	Usefulness in IS Discussions
Managerial Levers	Organizational variables, control variables, and cultural variables are the levers managers can use to affect change in their organization	This model gives specific areas where IS can be used to manage and change the organization

NPTEL Online Certification Course  
IIT Kharagpur

And there can be another framework for organizational strategy which is solely dependent on managerial levers. The organizational variables in her are the control variables and the cultural variables and this model gives specific areas where information systems can be used to manage and change an organization.

(Refer Slide Time: 26:18)

**Information Systems Strategy**

❖ Understanding organizational strategy means answering the following questions:

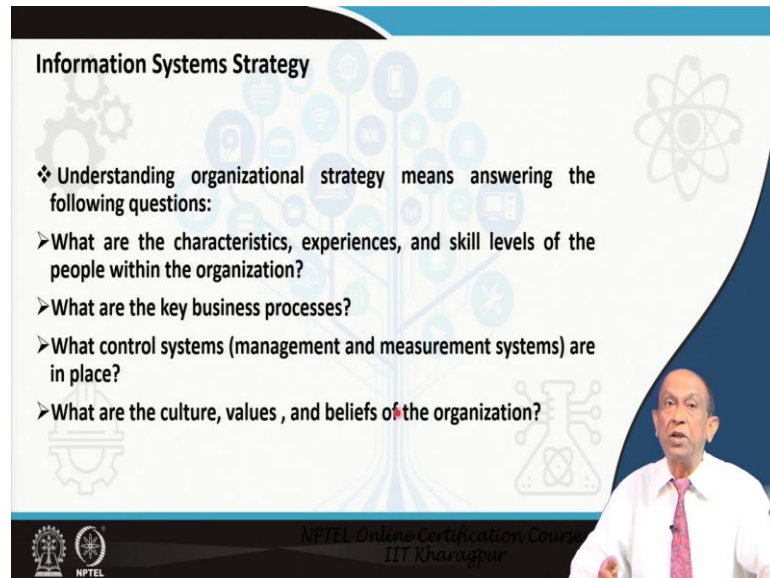
- What are the important structures & reporting relationships within the organization?
- Who holds the decision rights to critical decisions?
- What are the important people-based networks (social and informational) and how the managers can use them to get work done better

NPTEL Online Certification Course  
IIT Kharagpur

Understanding organization strategy means answering questions like say who holds the decision rights to critical decisions, what are the important people based networks and

how the managers can use them to get to their work done in a much better manner and information systems strategy can help achieve organizational strategy.

(Refer Slide Time: 26:41)



**Information Systems Strategy**

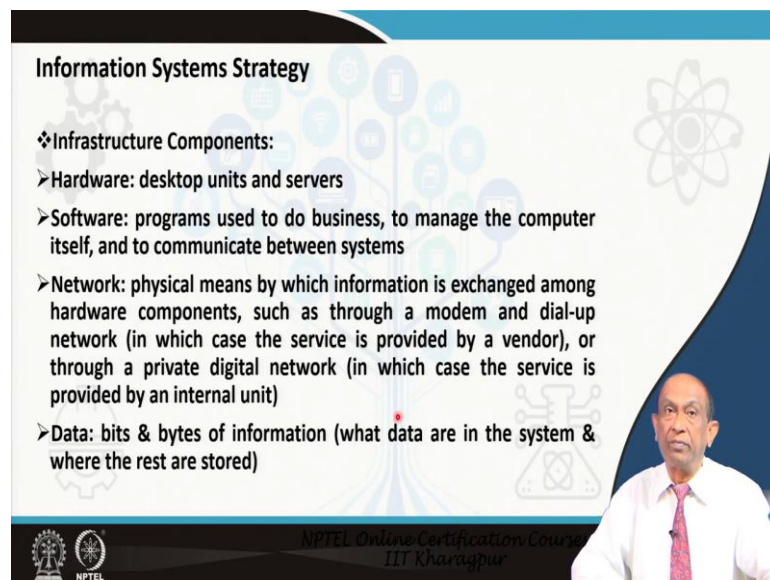
❖ Understanding organizational strategy means answering the following questions:

- What are the characteristics, experiences, and skill levels of the people within the organization?
- What are the key business processes?
- What control systems (management and measurement systems) are in place?
- What are the culture, values, and beliefs of the organization?

NPTEL Online Certification Course  
IIT Kharagpur

The slide features a background with various icons related to technology and business. A speaker is visible in the bottom right corner of the slide frame.

(Refer Slide Time: 26:50)



**Information Systems Strategy**

❖ Infrastructure Components:

- Hardware: desktop units and servers
- Software: programs used to do business, to manage the computer itself, and to communicate between systems
- Network: physical means by which information is exchanged among hardware components, such as through a modem and dial-up network (in which case the service is provided by a vendor), or through a private digital network (in which case the service is provided by an internal unit)
- Data: bits & bytes of information (what data are in the system & where the rest are stored)

NPTEL Online Certification Course  
IIT Kharagpur

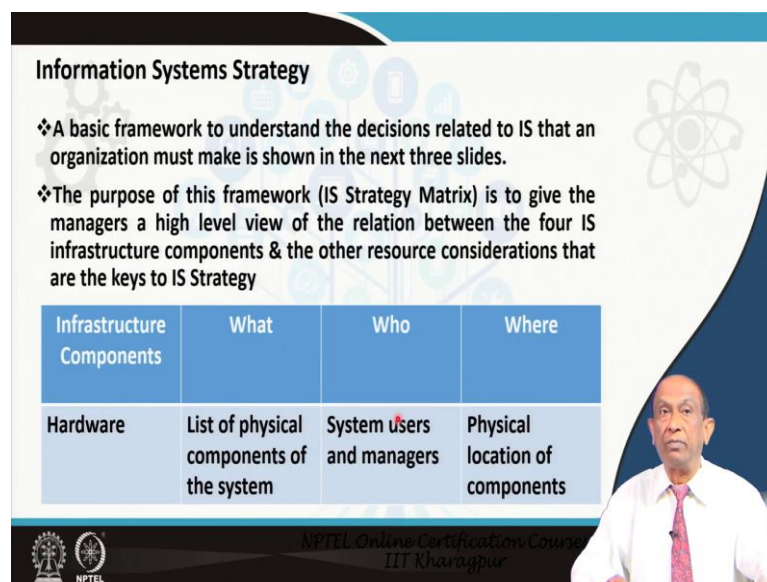
The slide features a background with various icons related to technology and business. A speaker is visible in the bottom right corner of the slide frame.

When we look at information systems strategy, we need to see: what are the action plans that can be designed and deployed related to hardware; what kind of desktop units and servers are required which we found out as part of that strategy? With respect to software we need to find out what kind of software programmes need to be developed and put in place, so that the business can operate efficiently and effectively.

So, technology is a very important thing and the we need to find out as part of that IS strategy not only the programmes used to do business, but also what are the software needed to manage the computer itself, what are the software required for communication between systems, what should be the level of response that must be provided when you think about the networks infrastructure.

We basically refer to the physical means by which information is exchanged among hardware components. For example, through a modem or a dial up network or a private digital network what should be the architecture, the design of the network is a part of information systems strategy.

(Refer Slide Time: 28:51)



**Information Systems Strategy**

- ❖ A basic framework to understand the decisions related to IS that an organization must make is shown in the next three slides.
- ❖ The purpose of this framework (IS Strategy Matrix) is to give the managers a high level view of the relation between the four IS infrastructure components & the other resource considerations that are the keys to IS Strategy

Infrastructure Components	What	Who	Where
Hardware	List of physical components of the system	System users and managers	Physical location of components

NPTEL Online Certification Course  
IIT Kharagpur

So, information systems strategy the basic framework to understand the decisions related to information systems that an organization must make and the purpose of this framework is to give the managers a high level view of the relation between the four IS infrastructure components and other resource considerations that are the keys to information systems strategy.

For example, with respect to hardware which basically it means the list of physical components of the systems. They need to find out who are the system users and managers. As part of the strategy, they need to identify the location of the all these physical components.



(Refer Slide Time: 29:53)

**Information Systems Strategy**

❖ IS Strategy Matrix

Infrastructure Components	What	Who	Where
Software	List of programs, applications, and utilities	System users and managers	What hardware it resides on and physical location of hardware

NPTEL Online Certification Course  
IIT Kharagpur

In terms of software, they need to find out the appropriate hardware over which the software can be run. The physical location of the hardware needs to be determined. It also needs to know the list of programmes, applications and utilities that is also a part of the information system strategy.

(Refer Slide Time: 30:22)

**Information Systems Strategy**

❖ IS Strategy Matrix

Infrastructure Components	What	Who	Where
Networking	Diagram of how hardware and software components are connected	System users and managers, company that provides the service	Where the nodes are located, and where the wires and other transport media are located

NPTEL Online Certification Course  
IIT Kharagpur

In terms of networking, the strategy should find out where the nodes should be located and where the wires and other transport media should be located. They need to formulate a diagram of how hardware and software components need to be connected.

(Refer Slide Time: 30:46)

**Information Systems Strategy**

❖ IS Strategy Matrix

Infrastructure Components	What	Who	Where
Data	Bits of information stored in the system	Owners of data, & data administrators	Where the information resides

NPTEL Online Certification Course  
IIT Kharagpur

And in terms of data who are the owners of data, how the data administration should take place, what should be the data volume, all these things need to be known in order to formulate the right kind of information system strategy.

(Refer Slide Time: 31:09)

**Information Systems Strategy**

❖ Strategic Relationships:

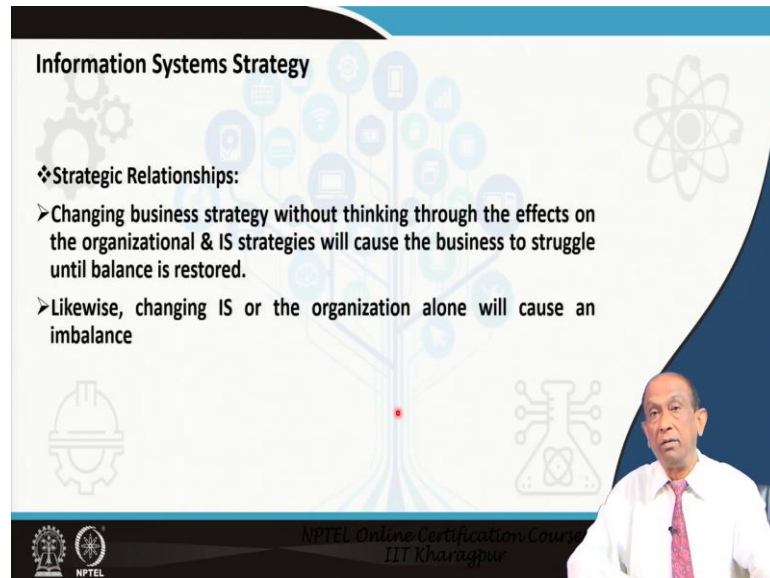
- Organizational strategy and information strategy must complement each other.
- They must be designed so that they support, rather than hinder, each other.
- If a decision is made to change one corner of the IS strategy triangle, it is necessary to evaluate the other two corners to ensure that balance is preserved.

NPTEL Online Certification Course  
IIT Kharagpur

Then organizational systems strategy and information systems strategy must complement each other. They must be designed, so that they support rather than hinder each other and this is not only true for IS strategy and organizational strategy, IS strategy should support

each and every functional strategy, otherwise imbalance will be created in the organization.

(Refer Slide Time: 31:37)



**Information Systems Strategy**

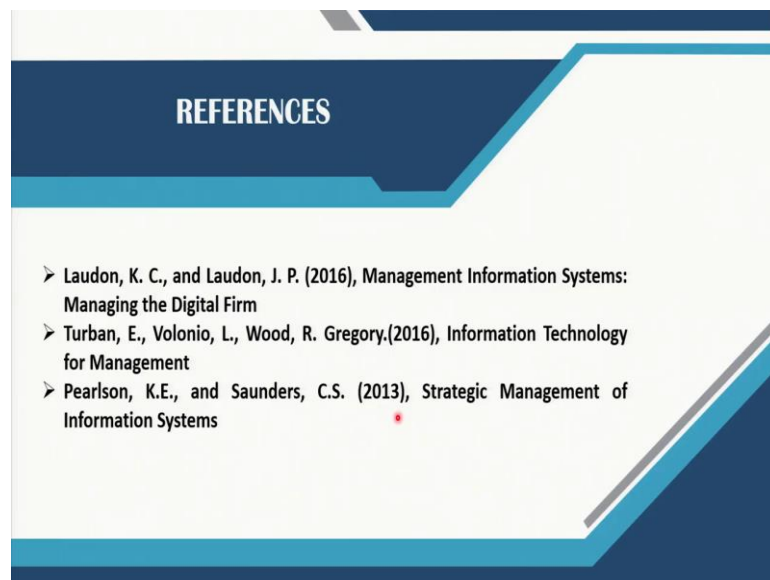
❖ **Strategic Relationships:**

- Changing business strategy without thinking through the effects on the organizational & IS strategies will cause the business to struggle until balance is restored.
- Likewise, changing IS or the organization alone will cause an imbalance

NPTEL Online Certification Course  
IIT Kharagpur

These are the references that have been used to prepare this particular module.

(Refer Slide Time: 31:41)



**REFERENCES**

- Laudon, K. C., and Laudon, J. P. (2016), Management Information Systems: Managing the Digital Firm
- Turban, E., Volonio, L., Wood, R. Gregory.(2016), Information Technology for Management
- Pearson, K.E., and Saunders, C.S. (2013), Strategic Management of Information Systems

Thank you all for your patience!