

**Management Information System
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**Week - 01
Introduction to MIS
Lecture – 05
Class Discussions and Conclusion**

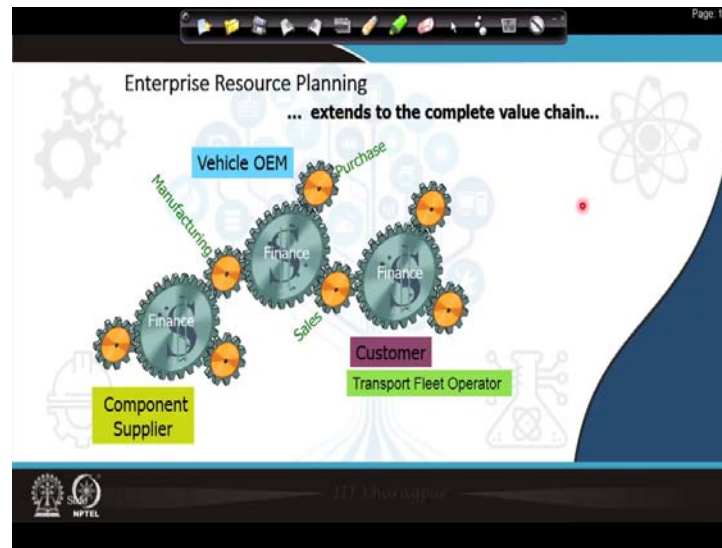
Hello everybody. Today in our last session o Introduction to MIS where I have covered 4 sections. Today in the last section where I will be concluding the introduction to MIS aspect and with some Cass Discussions and a general concluding statement.

After that we will move into very specific topics concerning MIS after this session. Hope you have been able to understand the basics of MIS, what it is constituted of, what are the construction features, what are the equipment's we need, what are the platforms and what it does, what are the benefits and the general aspects management information system.

It's a very vast subject as I told in the beginning and with more and more new technology coming in, it's scope is increasing day by day. We are now adding new fields to MIS literally every day or every week or month something new is coming up and its getting added and with artificial intelligence and things like that, many more fields will get added and it will add more value to MIS as a subject.

It's a very traditional old subject, but it keeps growing and getting modernized. That is what is the interesting aspect about this subject. It's not getting or getting outdated because the importance of information is growing day by day.

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Now, what I will talk about here briefly is something known as Enterprise Resource Planning, but we will be discussing in details about enterprise resource planning in details in the next few sessions.

All that I wanted to give you as an introductory part of MIS is that, enterprise resource planning is one of the backbones of MIS in a modern industry or a modern enterprise, a modern business, a modern service industry etcetra and they cannot simply do without this product known as enterprise resource planning. This is a softftware platform which cuts across all functionalities.

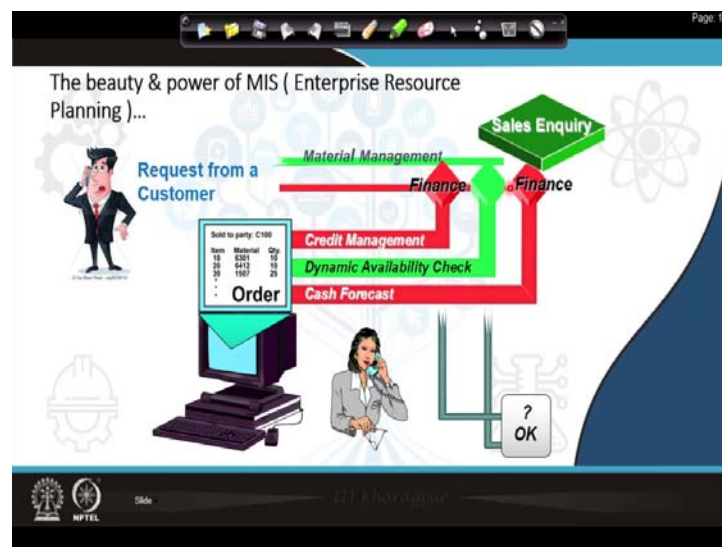
And what this picture tells and I will explain it in details in the following section is, that all the functionality of an organizations like finance, sales, manufacturing, purchase, HR etc. are all integrated. If something (activity) happens in manufacturing it will impact the books of accounts or it will impact the data or impact the information available in other departments as well.

In manufacturing when a product is produced it will impact purchase, it will impact your materials management function, it will impact finance, it will impact sales etcetera. It is a very integrated world. That is all the message I wanted to give in this slide that all business functions are very integrated.

We are not isolated and we cannot have an independent function which is not impacting any other function or any other function is not impacting this particular individual function which I was referring to.

You have to be aware that today's world is all networked and we are all interconnected. This is an example of an ERP software from an industry; however, it applies for everything in our life and we can generalize it to all aspects of our life, that we are all networked and interconnected.

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The next slide I will be discussing more details in the actual ERP section, but will quickly show you the power of integration by which, one individual with one machine sitting in one location of the world or wherever in our office can get information related to various functionalities like material management, finance, credit management, availability check etc.

A sales person sitting in a sales office in some office in India or somewhere and he or she has to commit something to her customer and she can do that without talking to anybody, without calling anybody by just looking at her computer screen. By being online, she can get all the relevant information that she needs to satisfy the customers requirement and she does not have to depend on any other individual.

She is independent as we are all networked and integrated. That is the beauty of the whole ERP system which is part of management information system. In a broader perspective, everything becoming interconnected, a person who has got the authority can get information related to any function on his own without having to depend on others.

You can imagine how things speed up and the whole purpose is to show how people are becoming more productive. That is why we need these tools, we need these softwares, we need this management systems, we need this information system to help us become more efficient, more productive, more valuable and then only we can excel in our business.

Our businesses are becoming smarter and smarter day by day with the help of these technology.

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Globalization Challenges and Opportunities: A Flattened World

Class Discussion :

- Internet has drastically reduced costs of operating on global scale
- Increases in foreign trade, outsourcing
- Presents both challenges and opportunities

Class Q – Airbnb / Uber / Booking.com etc.
How are they managing their entire business only using Internet and Information Systems ? They donot have any other material assets.

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Now, there is a class discussion I would like to have with you is that globalization challenges and opportunities we have been discussing earlier is a flattened world and I referred to the book “ The world is Flat” by Thomas Friedman.

You must have heard about the term called labor arbitrage. How did this entire outsourcing business start? What the western world saw that they can get cheap labor at these countries ,the Asian countries for example, India, Philippines, Vietnam, China

etcetera for delivering IT service. So, why not get the service done from these remote countries at a lower cost.

Because now with the help of technology with the help of internet I mean we are all connected. We are all one world. It does not make the difference whether the person is actually physically sitting in United States of America or physically sitting in Bangalore or Gurgaon or Pune or Kolkata. It is all the same as long as he or she can work in that particular required time zones and also we can work in shift.

That is what has happened and the whole work got shifted to the low cost countries like India and the overall costs of operation got reduced for everybody. That is beneficial to the business world that overall costs are getting reduced because of this outsourcing and all that is all connected to the subject of discussion that is internet, network and the information system and how it is getting managed.

Increase in foreign trade because of outsourcing - India for example, is earning billions of dollars in foreign exchange because of these outsourcing business. Lakhs of young people are working in call centers and in the IT service industries and the big companies like ITC, TCS, Infosys, Wipro, IBM, Cognizant, CTS etc. All of them are working earning valuable foreign exchange for the country such that we can import things which we do not have like petroleum for example, drugs, chemicals food etcetera and technical stuff. It is adding, much value to the country's GDP, this outsourcing business, but it presents both challenges and opportunities of course and there are lot of challenges and there are many opportunities as well.

Opportunities, we are seeing and we are discussing and of course, there are challenges like, network, connectivity etc. Technology itself is a challenge and there can be disruptions, like for example, this corona crisis or any other natural disasters. These can disrupt the business and also links can get disconnected including damage to the under-sea cables through which all the internet data flows across the world.

Those cables can get damaged and there could be physical damage etcetera resulting in failure of broadband and you will not be able to work .Those are some of the challenges which we face when we are working on a remote basis, but now with the current situation (corona virus) of course, apart from global outsourcing, even our local

businesses and government agencies are now promoting to a large extent the idea of employees working from home , that is , working remotely.

Again we are becoming more and more dependent on infrastructure like broadband and electricity. I mean broadband has to be there without which we are handicapped and we cannot work.

Now consider companies like Uber and Airbnb as to how are they managing their entire business only using internet and information systems? They do not have any other material assets. What you need to think is that a company does not own anything, for example, Uber does not have a car, Airbnb does not have a hotel building etcetera, but they are doing a roaring business. Hundreds and thousands of people are traveling and staying in Airbnb accommodation and most of us are using Uber services.

In all the large cities like Delhi, Mumbai, Chennai, Bangalore, Calcutta we are, very much dependent on these Uber taxis everybody and they do not own any car. You just buy a car and you enroll into Uber and they hire you as an owner or a driver and you log in and you start getting orders for trips. You pick up passengers and you earn money and Uber also earns money.

But the car belongs to you, you are maintaining the car, you are filling the petrol, everything is done by you. Uber has got nothing to do with the car, but Uber is earning money because they have provided this platform. They have provided this ecosystem. They have provided the software and they are managing it. So net , net , its all about managing information system.

What Uber is doing is they are just managing an information system. It is very easier said than done. They had to develop a very sophisticated software platform. For that we need software engineers and plenty of software engineers are available in India. Thus we can also build our own sophisticated platforms and we can also develop such business models for us for India .

We need to become Aatma Nirbhar. That is the message from our prime minister. We have to become self sufficient. such that we do not have to depend on technology from China, Europe, Asia, US etcetera specifically in software and information management

system because we have talent, we have skills, we have educational institutes which are delivering highest quality education in computer science and management.

Why cannot we develop such a quality of platforms which can be used by business enterprises to develop business models? , This is what you need to think and you need to study these models because they are actual models successfully running commercially.

Study this and then think on your own, that why cannot we do something equal if not better, than what has been done because we have the talent, we have the knowledge, we have the numbers, we have the education pool, and we have got a very large pool of engineers. India produces about 10 lakhs or 1 million engineers per year from our various government and private educational colleges.

This is a point for you to think about. Only when you think you know that these are the challenges which we need to overcome and develop something on our own such that we can become entrepreneurs and we can do something good for our country, for our society and that will give us lot of satisfaction for doing a good job.

The image shows a presentation slide titled "Customer and Supplier Intimacy". The slide content includes:

- Serving customers well leads them to return, increasing revenue and profits
 - Example: High-end hotels that use computers to track customer preferences and then monitor and customize the environment
- Intimacy with suppliers allows them to provide vital inputs, which lowers costs

Class Q – (Online sites achieving a high degree of Customer intimacy – Amazon / Swiggy etc. How are they doing this ?)

Pointers :

1. Return policy gives confidence to customers
2. Royalty bonus
3. Offers and Discounts
4. Are you aware that your data / browsing history / preferences are sold to marketing agencies .
5. Your every click may mean revenue for someone else.

The slide also features a small video inset of a man speaking in the bottom right corner, and the NPTEL logo in the bottom left corner.

Customer and supplier intimacy : - This is another thing which you need to understand. It is not a very commonly discussed subject. Serving customers well, makes them return for further purchase thus increasing revenue and profits. We have to always keep in mind that when we are into a service business or any other business, customer is the key and , we have to always think as to what can I do better such that the customer feels delighted.

There is something known as Customer Delight. Customer is expecting a common service when he comes to a hotel and he will expect a clean and comfortable room, a television, air-conditioning, nice bathroom and clean bed etcetera.

These are basic things which everybody expects because he is paying money, but can we give him something extra which can make him delighted? Is there a special bowl of fruit? I like apple and when I come into a room I find a dish containing apples I get delighted. But how does the hotel know that apple is my favorite fruit?

That is where information system is playing a role. It is capturing the information that last time the customer came he had asked for apples for his evening snacks, and he also wanted banana in the morning. He had asked for some flowers which were yellow colored as per his preferences and thus his likings are getting captured from his previous visit.

Next time when he comes without his asking he gets all those things, for example, he gets an apple, he gets a banana, he gets flowers. That is what is called customer delight. This is just an example from a particular industry, but similarly when you deal with a customer and you are selling a product maybe he buys a product you give it to him, but you may give it in a very nice pack and not give him in a plastic packet. If you give him in a paper bag instead of a plastic one, or a bag made out of a degradable product may be like jute etc. it will be a customer delight as the customer will know that yes I am getting something which is not going to damage the environment and I feel proud to carry my material in a paper bag or a jute bag which is not damaging the environment.

I feel delighted. I know that the shop owner is not just interested in selling a product, but he is also interested in additionally making me happy. What makes me happy when I buy something? One is the product should be of the right quality, secondly, it should be at the right price and thirdly if I get anything extra.

Intimacy, similarly can be built with a supplier and this may allow them to provide goods at a lower cost, if I can help him in any way to deliver in time. I can become a priority customer for him and during any shortage of material, chances are that he will give preference to me instead of my competitor when supplying materials. I have to develop relationships with him such that I can become intimate with my supplier.

We will talk about supply chain later how the supplier - customer and yourself , the three components get integrated. Integration is the key and integration is helped by information system. When you know more information about your supplier, you can find out in which areas he may need help. This helps to build good relationships. That is how the whole dynamics works and that is what you need to think. You always think about your customer of course, because that is business for you but you also need to think about your supplier because if the supplier does not give you goods of right quality and in time , you cannot satisfy your customer.

Customer comes and asks for something and you are out of stock because your supplier did not deliver it in time. These are things are becoming important nowadays because everything is very competitive.

Question: Online businesses are achieving a high degree of customer intimacy e.g., Amazon, Swiggy etcetera. How are they doing it? Study and see what is the business model being used b Amazon to achieve this ?

We are quite satisfied with Amazon, as there are hardly any complaints, things are delivered on time. If you do not like the material , they take it back, no questions asked and money is refunded immediately. You do not complain, Amazon does not complain, the seller of Amazon does not complain. Nobody is unhappy.

Nobody is complaining when you return things. Similarly with Swiggy and Zomatos. Study these models and see what they are doing. Think about it and you can learn lot of things from what they are doing. Plenty of information will be available in the internet. I will request you to go through them, study them on your own time and you will get lot of inputs and understanding.

From here you will know what items to focus on, which areas to search and then see how they are and everywhere you will see the presence of information system. They are using information management system from end to end.

Everybody is dependent completely on information system to run such digital business models because we have not seen an Amazon office at least I have not seen an Amazon office. I have not seen an Amazon employee, you have not seen an Amazon employee.

You have only seen the delivery boys who come and deliver, but they are not Amazon employees, but still you find Amazon is everywhere.

Whenever we want to order something we just open an Amazon app or login to their portal and order and things are done. The pointers for you for when you do these studies, to keep in mind the return policy which gives confidence to customers thus making these models , successful.

Some additional discounts and offers are of course, there. Royalty bonus offers and discount these are the incentives for one to go to online portal and buy things. On the other hand , you are aware that your data browsing history preferences are sold to marketing agencies. This is the negative side and you need to be aware of.

That is as a smart and intelligent person you should be aware that your browsing history, your likes and dislikes and everything about you are the data which they are collecting and they are sold to marketing agencies and the marketing agencies sell it to the suppliers who throw ads at you when you next time browse the internet.

Maybe you are going to some other site and suddenly you see pop ups coming up about things which you bought in Amazon maybe 7 days back. You bought a shoe and then the shoe advertisement keeps coming. How do they come to know? They get the information from Amazon. Amazon is also making money by selling the data. They are very smart people.

That is why their business models are successful and they are growing in revenues and stock values. They are highly valued companies, although they may not be making profits nowadays because they are giving heavy discounts. But their stock value is very high. The companies are highly valued because they are doing business in multiple ways apart from the product they are selling they are selling information and they are selling data.

I have told you in the beginning and we have been discussing here that information today is power. I mean everything in the entire business world is moving on information. Data is becoming such important thing and big data analytics you are hearing everywhere is, important and where is the data coming from? These, internet transactions are one of the major sources of data. These are all our personal data our likes and dislikes.

What I bought, which color of shirt which color of pants, which jeans, which model, which make size all of these data my likes and dislikes is now available to many people and without our knowledge we do not know who has my knowledge. These are the things which you also need to be knowledgeable about and concerned about because you have to take care of these things.

Everybody is impacted and your every click may mean revenue for someone else like in digital marketing. Whenever you are clicking something on a Google site, probably some YouTube video etcetera the person who floated that video is earning some cent or some dollars from every click or every video you are seeing.

That is also another smart way of doing a business or earning money and that is again information system being managed to generate revenue for individuals for people. You can become very popular YouTuber, if you are uploading videos which are useful to others. These may be liked by others either for entertainment or for knowledge specifically and people once they view it, you are earning money.

You do some video sitting at home, upload it, you are not going anywhere you just simply record it on your own and upload it to YouTube and if people like it and if it becomes popular you will be earning money. The site maybe becomes an advertisement sites for other companies and Google will be earning money because Google is posting those advertisements at your site.

When I am seeing your video, I am also seeing some advertisements. Google is earning money and you are also earning money. You can see how this information system is being utilized by various agencies to earn dollars or money. That is what is now the interesting business models which are coming up nowadays that everybody is getting used to such models.

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Interactive Session: Management- The Mobile Pocket Office

- Class Discussion
 - What kinds of businesses are most likely to benefit from equipping their employees with mobile digital devices such as iPhones and iPads?

e.g. – Point of Sales Order and Supply information at the Retailers
Customer satisfaction survey
Marketing data collection / questionnaire
Payment banks in rural areas.

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The mobile pocket office - What kinds of businesses are most likely to benefit from equipping their employees with mobile digital devices such as iPhones and iPads? Like iPhones iPads or your phone itself the mobile phone are becoming very important tools. Not only for your personal communication etcetera apart from that is of course, a phone is supposed to be used talk and also share videos, messages etcetera that is a fundamental use of a mobile phone device.

But what else? Can it be used for business? And they are being used for business and that is what you need to go and study and the pointers here are - Point of Sales (PoS), Order and Supply information for the retailers and you might have seen many sales agents from marketing companies like Hindustan Unilevers or Godrej or Coca-Cola or Pepsi, come to the dealers or the retailers and they bring out their iPads or Tablets, or even on their iPhone and they take orders from the dealer there itself.

There is no paperwork being done or no verbal communication that I want this, so much credit is required or quantities of items etcetera. They simply record these on the mobile devices and from there itself because they are connected through internet, as soon as they enter the data the information goes back to the main dealer or the wholesaler or even may be to the factory warehouse depending on the whether it's a retailer or a large dealer or a wholesaler and the size of the order.

As the sales person comes to the shop and captures the requirement on his iPad or iPhone the order immediately gets transmitted to the whole-seller and the material gets supplied probably that same day evening or the next day. That is how it is done fast as otherwise he would have to get the information, call up somebody and then that person has to record that message, put it in his computer by manual entry. Manual entry can also cause mistakes or when sometimes information is communicated over phone, the phone lines may not be very clear. Not being able to hear properly the quantity etc. could result in mistakes, for example, dealer wanted 100 pieces and he heard probably 200 pieces.

So, instead of 100 he supplies 200. Mistakes can happen and then when retailer gets the wrong quantity he would question as to, what to do with this 100 extra? He would refuse to pay for the extra quantity and might ask the sales man to take back the 100 quantity.

That becomes a problem. The 100 quantity has to be taken back and taking back means that is a cost, but here when you do it Online on your phone or your iPad or your Tab that immediately gets transmitted, there is no question of human error because it gets transmitted into their ERP system about which we will be talking later.

The entry from the retailer , just one entry of 100 quantity of item x, gets inputted into their ERP system and a sales order is released automatically for that customer whatever the name of that customer is , the shop and the order is released, invoice is created and material is dispatched say 100 quantity and the retailer gets it depending on the distance and delivery time and delivery mode or when he wanted it. Two days later or on whichever date he wanted the supply.

That is how things are working and this is again all about managing information system. When you take a customer satisfaction survey for example, you go and meet customers and you ask them questions and record their responses. You can use the iPad and or a Tablet to capture their feedback and then once you do that it automatically goes into your system and there can be no manipulation of the responses given by the customer.

The surveys are thus authentic because the customer will give him the rating and that is directly transferred to your company's IT systems. The beauty is that if you had taken a paper survey then you could have always manipulated that later on depending on whatever you wanted to show, but here there is no question of manipulation because data is captured online and goes online. There is no scope of any manipulation by anybody.

Similar thing for marketing data collection and questionnaire. Things are now very integrated and hence that genuineness of quality is assured. The quality of data which is captured is getting assured because it is not in a paper mode, which can be changed rewritten or thrown away and another paper created and somebody can sign etcetera.

Payment banks in rural areas where you do not have proper banks ATMs etcetera you can use these iPads and iPhones to capture their requirement and the cash can be delivered to the person. He can do any fixed deposit or whatever cash withdrawal request from that iPad and his bank account gets debited and the person from the bank can then give him the money which was required by the customer.

This is very much used in a rural banks and Grameen banks. It is a very successful model - Grameen bank of Bangladesh. Professor Muhammad Yunus the Nobel laureate has developed this and is used in a very big way in Bangladesh and also I think is being used in many rural districts in India also.

These are some of the very interesting business applications for mobile devices. To conclude management information systems combines computer science, management science, operations research and practical orientation with behavioral issues.

Conclusion... (1 of 2)

- **Management information systems**
 - Combines computer science, management science, operations research, and practical orientation with behavioral issues
- **Four main actors**
 - Suppliers of hardware and software
 - Business firms
 - Managers and employees
 - Firm's environment (Customer Satisfaction , legal, social and cultural context)

It is not only just hardcore computer science and management it also involves practical orientation and behavioral issues and also the human factor is very much involved.

The four main actors are the suppliers of a hardware and software, business firms who are using it, managers and employees because you need people to run the system both the employees and managers and the firms environment. Customer satisfaction, legal, social and cultural context which we will be discussing later, are also very important factors.

We have certain perception about various organizations, for example, we know that Tatas are very honest company. It is a perception which may be right or may be wrong we do not know, but we develop perceptions that multinationals are mainly for profits , but some of these companies make very good authentic food stuff etcetera very dependable from quality perspective, very respectable companies.

That is because of the cultural context. That is the firms environment which we come to know through various channels, about their work and their product and then word of mouth messages , their advertisements , what things they do , that we know what a company's culture is and if we like it and we become their followers. Then we buy things from those companies who we know have a good culture.

Like multicultural things which you might be reading that in newspapers especially in companies in the US and Europe etcetera where this racial thing is being exposed in a big way. The companies are trying to become multicultural. It is very important that companies are multicultural and they do not show any bias towards any particular race or caste, color of skin etcetera. These things are becoming very important these days.

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Conclusion (2 of 2)

In a socio-technical perspective, the performance of a system is optimized when both the technology and the organization mutually adjust (mesh) to one another until a satisfactory fit is obtained

It is extremely important for the business leaders (specially the CIO) to understand which technology would be best suited for their organization. Follow the Jones's often can lead to wrong investments.

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In a technical perspective the performance of a system is optimized when both the technology and organization mutually adjust, mesh to one another until a satisfactory fit is obtained. Finally, its technology on one side and organization on the other side and the two will need to merge and gel.

It is extremely important for the business leaders especially the CIO to understand which technology would be best suited for the organization, following the Jones's often can lead to the wrong investments. As a future manager, you will have the challenge, when you will be, say for example, playing the role of a CIO or a technical person and you have to select a particular technology which is required by your business operations. There are many technologies available that you sometimes get lost for choice. You have to find out which is most adaptable or the best required for your organization. We have said earlier that all companies, all organizations are different although basically they have similar business functions. Everybody has got finance, everybody has got sales, everybody has purchase, manufacturing, human resources etc. All the departments and the functions are same but the organizations are different.

The business processes are different; culture differs from company to company organization to organization. For every organization one has to specifically select the appropriate technology and see what is best suited for that particular organization. That is where in the lower part of the slide we see the technology and organization if they do not mesh and if they do not gel very well there could be problems.

That is where decision making is important and as a manager, as a future manager your role will be to take the correct decision, that you know you buy the right product for your organization because if you do not buy the right product and its does not fit well probably you will have to get it replaced. People will not accept it and then that is a loss for the organization because that is a cost.

That money which you had invested in that particular technology goes waste and that becomes a discredit for you. It's very important for MIS persons - the CIO, the IT team, the IT department to select proper IT technology, that the business can gain benefit and utilize them properly and for the success of the organization because the organization finally, has to overall meet its stated needs of making profit etcetera.

Thank you.