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**BIT 2119: MIS Assignment two**

1. List and explain four reasons why information systems are so important for business today

* strengthening of the global economy - system provides the communication and analytical power that firms need for conducting trade and managing businesses on a global scale.
* Improved decision making- Information systems help managers make good decisions from the real time data they get.
* Competitive advantage- When firms achieve one or more of these objectives i.e operational excellence, new products and services etc they gain a competitive advantage over their competitors leading to higher sales and higher profits.

1. Describe five technology and business trends that have enhanced the role of information systems in today’s competitive business environment

* transformation of industrial economies and societies into knowledge and information based service economies. In knowledge based economies, knowledge and information are key ingredients in creating wealth to an organization. Knowledge and information are becoming the foundation for many new services and products.
* Strengthening of the global economy- Globalization of the world’s industrial economies greatly enhances the value of information to the firm and offers new opportunities to businesses. Information system provides the communication and analytical power that firms need for conducting trade and managing businesses on a global scale.
* Transformation of the business enterprise-Traditional firms was and still is a hierarchical, centralized, structured arrangement of specialist that typically relies on a fixed set of standard operating procedures to deliver a mass-produced product or services. But the business enterprises has change into flattened, decentralized, flexible arrangement of generalists who rely on nearly instant information to deliver mass-customized products and services uniquely suited to specific markets or customers
* Computers’ power has grown tremendously, while their prices have dropped.
* Quick and reliable communication lines and access to the Internet and World Wide Web have become widely available and affordable.
* Computer programs’ variety and ingenuity have increased.

1. What are some of the new roles information systems are playing in organizations?

* These later systems affect managerial control and behavior of who can access this information about the other and when or how.
* These systems also influence core institutional activities (i.e. what products are produced) concerning products, markets, suppliers and customers.

1. **Different organizations have adopted different structures for the IT department. Outline the traditional structure of an IS department and explain the main activities of the key sections.**

* Operational management level: The operational level deals with performing day to day business transactions of the organization. Users at this level use make structured decisions hence they have defined rules that guides them while making decisions.
* Tactical Management Level: This organization level is dominated by middle-level managers, heads of departments, supervisors, etc. The users at the level usually oversee the activities of the users at the operational management level. Tactical users make semi structured decisions. The decisions are partly based on set guidelines and judgmental calls.
* Strategic Management Level: This is the most senior level in an organization. The users at this level make unstructured decisions. Senior level managers are concerned with the long-term planning of the organization. They use information from tactical managers and external data to guide them when making unstructured decisions.

1. Outline the advantages and disadvantages of centralization and decentralization of the information system

**Advantages of Centralization**

* Simplified IT Infrastructure: Complex IT infrastructures increase cost, security demands and create overall difficulty for both IT staff and other employees. When data is centralized the systems are overall streamlined, therefore simplified.
* Operational Efficiency: When an organization’s data is controlled by one business unit, the resources previously dedicated to the management of data can be redirected to core business needs. Moreover, this allows companies to eliminate the manual processing of data, which in turn reduces the risks of poor business decisions.
* Accurate Information: Complex IT systems files are located on local servers, therefore, may pose an issue for anyone trying to access it from another local area if changed or updated. By having everything in one centralized location, on one mainframe, everyone is guaranteed to have access to the most up to date file information.
* Standardization: Centralization decisions result into standardize policies and procedures to be uniformity followed throughout the organization making coordination easier.
* Faster Searches: When your data is centralized, data searches are faster, and the information is more easily accessible.
* Data Security: This is the perhaps the biggest reason to switch to centralized data management. After you make the switch, your data will be secured with documentation and a user won’t be able to access that data unless they’re given privileges via a tightly controlled process.

**Disadvantages of Centralization**

* Limited ability to meet user needs: Centralized approaches necessarily mean that priority goes to those systems which are seen as important by some select and centralised staff group. The priorities of the periphery – both individuals and individual work units – may not be addressed.
* Inflexibility: The greater the amount of central planning that has gone into an information systems decision, and the longer that decision is therefore intended to provide guidance for the organization, the less flexibility it offers the organization to cope with internal or external changes.
* Heavy time consumption: Centralized decisions and actions are more time-consuming than a decentralized approach because of: the additional time it takes for information to flow up the organization as an input to centralized decisions; the additional time it takes to collate information from a variety of different decentralized locations as an input to centralized decisions; and the additional time it takes for implementation information to flow down the organization.
* Increased dependence and vulnerability: In general, centralized approaches to information systems make public sector organizations more dependent and more vulnerable as they rely on single information systems.

**Advantages of Decentralization**

* Quick decision and response times: it is important for decisions to be made and implemented in a timely manner. In order to remain competitive, it is important for organizations to take advantage of opportunities that fit within the organization’s strategy.
* Greater fit between systems and local needs: The closer the proximity of user and developer, the less the communication gap and the more likely it is that the developed system meets the users’ real needs.
* Faster system development: The less the organizational distance between system user and system developer, the faster development of that system is likely to be. Again taking the extreme of end-user development, there will be no delay for the development of mutual understanding and no clash with higher priority information systems developments.
* Higher usage of computerized systems: This flexibility to fit local needs helps to explain the dramatic growth in computer use associated with decentralized approaches, such as end-user computing. Users are better motivated by such approaches and are far keener to take up computing when it directly supports their own interests and work.
* Perceived lower costs: the costs of decentralized approaches are greater than anticipated because of many initially unrecognized indirect costs. Decentralized approaches present lower costs than centralized approaches. This is due to faster development, less miscommunication, greater fit to local needs, the greater emphasis on smaller computers, the greater emphasis on buying software packages rather than developing software in-house, and so on.

**Disadvantages of Decentralization**

* Barriers to sharing data: Decentralized approaches can create information systems in different work units that are mutually incompatible. The resulting ‘electronic concrete’, like its centralized counterpart, constrains the scope of activities that organizations can undertake, or imposes substantial additional time and financial costs on those activities.
* Barriers to sharing other resources: There may also be an inability to share resources other than data if work units are allowed to set up their own separate systems. It may be hard to exchange hardware and software. Perhaps more importantly, each individual information system requires a unique set of skills for system development, implementation and operation. This makes it much more difficult for staff to move between different systems.
* Duplication of effort: Apart from constraining what public organizations can do, decentralized approaches also tend to be very costly because units will often duplicate what others are doing.
* Failure to achieve scale economies: There are scale economies in information systems covering data, people, hardware and other resources. Decentralized approaches make all activities more costly, from buying computers to gathering data to training staff to system operation and maintenance.

1. Outsourcing can be defined as the process of turning partially or fully an organisation’s IT services to external entities. Discuss the merits and demerits of outsourcing the IS function in an organization.

**Merits of Outsourcing**

* Improved focus on core business activities: outsourcing can free up your business to focus on its strengths, allowing your staff to concentrate on their main tasks and on the future strategy
* Increased efficiency: choosing an outsourcing company that specialises in the process or service you want them to carry out for you can help you achieve a more productive, efficient service, often of greater quality
* Controlled costs: cost-savings achieved by outsourcing can help you release capital for investment in other areas of your business
* Increased reach: outsourcing can give you access to capabilities and facilities otherwise not accessible or affordable
* Greater competitive advantage: outsourcing can help you leverage knowledge and skills along with your complete supply chain

**Demerits of Outsourcing**

* Management difficulties: changes at the outsourcing company could lead to friction - Instability: the outsourcing company could go out of business
* Risk of exposing confidential data: When an organization outsources HR, Payroll and Recruitment services, it involves a risk if exposing confidential company information to a third-party.
* Hidden costs: Although outsourcing most of the times is cost-effective at times the hidden costs involved in signing a contract while signing a contract across international boundaries may pose a serious threat
* Lack of customer focus: An outsourced vendor may be catering to the expertise-needs of multiple organizations at a time. In such situations vendors may lack complete focus on your organization’s tasks
* Synchronizing the deliverables: In case you do not choose a right partner for outsourcing, some of the common problem areas include stretched delivery time frames, sub-standard quality output and inappropriate categorization of responsibilities. At times it is easier to regulate these factors inside an organization rather than with an outsourced partner

1. **Explain how the following concepts of performance and workload measurements are used in assessing the performance of systems.**
2. **Response time:** Response time testing measures the time taken for one system node to respond to the request of another. It is the time a system takes to reach a specific input until the process is over. Response time is measured with the help of a test tool by surrounding an important business process with Start and End transactions.
3. **Turnaround time:** Turnaround time is a performance indicator measuring the time it takes to respond to a request. It measures the efficiency of centralized computer operations, by showing the amount of time between the arrival of a request at a computer center and the availability of the output for delivery or transmission.
4. **Throughput:** Throughput measures the efficiency of the computer itself. This is the time from the input of a request to the central processor until the output is delivered to the system.