: What is an information system?

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Modern information systems combine computing hardware, software, networking and storage infrastructure with trained staff. The purposes of information systems include: 1) creating, sharing and transmitting documents; 2) delivering applications to users; 3) facilitating financial and operational control; 4) coordinating activities, and 5) supporting decision making.

Is the Internet an Information System? Are there both private and public information systems? Does an information system do more than provide information? How does a modern information system differ from the pre-Internet legacy systems?

An information system (IS) can be defined and examined from two major perspectives. First, one can define the components that are interconnected to create an information system, a tools perspective. Second, researchers can examine the roles and purposes information systems serve in an individual's life, in an organization, among organizations, and in society, a process perspective. Both perspectives help us understand. There is no universally agreed-upon definition of an information system. Alter (2008) identifies more than 20 definitions. Ultimately, he concludes "An information system is a work system whose processes and activities are devoted to processing information, i.e., capturing, transmitting, storing, retrieving, manipulating, and displaying information."

The journal Information Systems does have a definition on its web page at URL www.journals.elsevier.com/information-systems/. "Information systems are the software and hardware systems that support data-intensive applications." This definition is short and seems concrete, but the meaning is ambiguous. The phrase data-intensive applications has had varied meanings over the years. A quick Google search suggests is refers to a "class of parallel computing applications."

Davis (2000) noted "The information system or management information system of an organization consists of the information technology infrastructure, application systems, and personnel that employ information technology to deliver information and communication services for transaction processing/ operations and administration/ management of an organization. The system utilizes computer and communications hardware and software, manual procedures, and internal and external repositories of data. The systems apply a combination of automation coming human actions and user machine interaction."

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Management Information Systems (MIS) refers to both a type of system and the study of people, technology, organizations, and the relationships among them who use such systems. MIS professionals help firms realize maximum benefit from investment in personnel, equipment, and business processes. MIS is both a people-oriented and a technology-oriented field of practice and study with an emphasis on providing services through the use of information technologies.

Information is data that has been processed to create meaning. In general, information is intended to expand the knowledge of the person who receives it.
Finally, information is the output of information systems, including decision support systems.

What are the components that make up an information system?

Sources differ on the components of an information system, but lists often include hardware and software for collecting, transmitting, storing, and processing data. Technologies include computers ranging from smart phones to supercomputers and parallel processing computers; a wide assortment of software including programs that control the operation of the computer hardware; telecommunications devices and computer networks. Hardware, software, and telecommunications are the information technology (IT) component. Informations Systems and Information Technology now required for the operations and management of most organizations. In general, there are 5 components: 1) data, 2) hardware, 3) people, 4) processes, and 5) software.

What is the function, purpose or role of an Information System?

Information Systems can have many "purposes" or functions. Computerized information systems can support organizational processes, provide management information, support decision making, and even support group work and communications. As the term suggests, a major role of an information system is to manage, organize and process data into information.

In businesses, information systems support business processes and operations, especially the processing of transactions, and decision-making including performance monitoring, reporting, and analysis.

What are common types of information systems?

An information system maintained by an individual for personal use is appropriately termed a personal information system. An information system used by a workgroup or organization department is commonly called a departmental information system. Information systems that support an entire business or organization are called enterprise information systems. Narrow purpose information systems that serve a department have names like a "marketing information system" or an "accounting information system".

Some other categories or types of information systems include: 1) Transaction Processing Systems (TPS); 2) Decision Support Systems (DSS); 3) Management Information Systems (MIS) and 4) Executive Information Systems (EIS).

The World Wide Web is the largest, most pervasive information system currently available. It is a global collection of documents, videos, photos, and other digital resources, connected by hyperlinks and Uniform Resource Identifiers (URIs). The web has both user-generated and organized, reviewed and curated content.

What roles do people have related to information systems?

People are users of information systems and many people have technical and managerial roles related to maintaining and supporting the operation of an information system. Technical roles include database analyst, database administrator, help desk support, systems analyst, programmer. Managerial roles include project manager, data administrator, and chief information officer (CIO).

What is an information systems architecture?

An information system is defined by its architecture. An information systems architecture is a formal, static definition of the processes and rules, systems structure, technical framework, and product technologies for a business or organizational information system, c.f. Zachman, 1987. The IS architecture describes the design and contents of a computerized information system. If documented, the architecture may include information such as a detailed inventory of current hardware, software and networking capabilities; a description of long-range plans and priorities for future purchases, and a plan for upgrading and/or replacing dated equipment and software. The architecture should document: What data is stored?, How does the system function?, Where are components located?, When do activities and events occur in the system?, and Why does the system exist? The information system is dependent upon a dynamic, functioning information system

architecture.

Conclusions

Organizations have many information systems and people create and use many information systems. Information systems serve specific purposes and support many diverse tasks. Information systems are complex, socio-technical systems. We have become dependent upon computerized information systems as individuals, but so too have our organizations and society in general. We need information systems for our organizations, governments and many of us as individuals to function effectively.

A modern information system (IS) is an integrated set of hardware, software, infrastructure and trained personnel designed for the purpose of collecting, storing, and processing data to provide decision support, information, knowledge, transaction processing, and digital products.

We live in an information society where information systems help us create, distribute, use, integrate and manipulate information. The main drivers of our information society are digital data and communication and computing technologies.

In summary, an Information system is an integrated set of components for collecting, storing, and processing data and for providing decision support, information, knowledge, and digital products. Information system applications meet the needs of individuals, departments, organizations, or broader scopes. Information systems are formal, sociotechnical, organizational systems designed to collect, process, store, and distribute information.

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