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Any business, big or small, must have a system in place to collect, process, store and share data. In the past, these tasks required a lot of time and paperwork. Today, companies use modern technology to streamline and automate these operations. Information systems are now playing a crucial role in data processing and decision making. When used
correctly, they can positively impact an organization's overall performance and revenue. At the most basic level, an information system (IS) is a set of components that work together to manage data processing and storage. Its role is to support the key aspects of running an organization, such as communication, record-keeping, decision making, data
analysis and more. Companies use this information to improve their business operations, make strategic decisions and gain a competitive edge. Information may use customer relationship management systems to gain a
better understanding of its target audience, acquire new customers and retain existing clients. This technology allows companies to gather and analyze sales activity data, define the exact target group of a marketing campaign and measure customer satisfaction. Modern technology can significantly boost your company's performance and productivity.
Information systems are no exception. Organizations worldwide rely on them to research and develop new ways to generate revenue, engage customers and streamline time-consuming tasks. With an information system, businesses can save time and money while making smarter decisions. A company's internal departments, such as marketing and
sales, can communicate better and share information more easily. Since this technology is automated and uses complex algorithms, it reduces human error. Furthermore, employees can focus on the core aspects of a business rather than spending hours collecting data, filling out paperwork and doing manual analysis. Thanks to modern information
systems, team members can access massive amounts of data from one platform. For example, they can gather and process information from different types of information systems and each has a different role. Business intelligence (BI)
systems, for instance, can turn data into valuable insights. This kind of technology allows for faster, more accurate reporting, better business decisions and more efficient resource allocation. Another major benefit is data visualization, which enables analysts to interpret large amounts of information, predict future events and find patterns in historical
data. Organizations can also use enterprise resource planning (ERP) software to collect, manage and analyze data across different areas, from manufacturing to finance and accounting. This type of information system consists of multiple applications that provide a 360-degree view of business operations. NetSuite ERP, PeopleSoft, Odoo and Intacct
are just a few examples of ERP software. Like other information systems, ERP provides actionable insights and helps you decide on the next steps. It also makes it easier to achieve regulatory compliance, increase data security and share information between departments. Additionally, it helps to ensure that all of your financial records are accurate
and up-to-date. In the long run, ERP software can reduce operational costs, improve collaboration and boost your revenue. Nearly half of the companies that implement this system report major benefits within six months. At the end of the day, information systems can give you a competitive advantage and provide the data you need to make faster,
smarter business decisions. Depending on your needs, you can opt for transaction processing systems, knowledge management systems, decision support systems, decision systems, decision support systems, decision sy
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necessary for your intended use. For example, other rights such as publicity, privacy, or moral rights may limit how you use the material. Depending on who you ask, there may be five or six elements to a computer-based information system. In "Fundamentals of Information Systems," Ralph Stair and George Reynolds define a computer-based
information system (CBIS) as a "single set of hardware, software, data into information." Some experts list five basic elements of a CBIS: hardware, software, data, procedures and people. Others add a sixth element, communications, to the
list. Hardware is the most obvious part of a computer-based information system. Hardware refers to the computers themselves, along with any and all peripherals, including servers, routers, monitors, printers and storage devices. A CBIS may use a single computer or thousands. Without software, the hardware wouldn't be very useful. Software, the
second element of a CBIS, is what tells the hardware how to function. It gathers, organizes and manipulates data and carries out instructions. Everything you do using a computer is done by the software cannot function without software, software cannot function without data. This
is the information part of an information system, and whether that is statistical data, sets of instructions, lists of names or even graphics and animations, it is all key to a CBIS. It is commonly said that "procedures are to people what software is to hardware." The fourth element of CBIS, procedures are the rules, descriptions and instructions for how
things are done. In computer-based information systems, procedures are frequently covered in instruction or user manuals that describe how to use the hardware, software and data. People are the most often overlooked and most important part of a computer-based information system. It is people who design and operate the software, input the data,
build the hardware and keep it running, write the procedures and it is ultimately people who determine the success or failure of a CBIS communication or connectivity is a necessity. This is, in part, because parts of it
are covered under hardware. The components that allow one computer to communicate with another are hardware and are controlled by software. If communication between people is included in this element, though, it is an important element. In today's technology-driven world, information systems have become an integral part of businesses,
organizations, and daily life. An information system is a collection of hardware, software, data, and people that work together to process and manage information system and their importance. 1. Hardware Hardware refers to the physical components that make up an
information system. These include computers, servers, printers, scanners, and other electronic devices. Hardware provides the processing power, storage capacity, and input/output capabilities needed for an information system to function. 2. Software is a set of instructions that tells the computer what to do. It includes application software,
which performs specific tasks, and system software in an information system is an operating system such as Windows or MacOS. 3. Data Data is the raw material used by an information system. It can include business data
like customer information or financial records, as well as non-business data like social media posts or weather forecasts. Data needs to be collected, stored, and processed properly to be useful for decision-making and analysis. 4. Procedures Procedures are the rules and guidelines that govern how an information system is used. They include policies
for data security, backup and recovery, and software updates. Procedures are important for making sure that the system runs smoothly and that data is protected. 5. People are the users and stakeholders of an information system. They include employees, customers, suppliers, and managers. People interact with the system through user
interfaces and are responsible for producing, processing, and consuming the data that the system generates. 6. Network The network is the communication channel that connects the hardware components of the information system. It includes wired or wireless connections, routers, switches, and other networking devices. Networks are essential for
transporting data between components and enabling remote access to the system. Conclusion: Information systems are complex entities that require careful planning and management. By understanding the six components of an information system and their interdependencies, businesses and organizations can optimize their use of technology and
leverage the power of data for better decision-making. Whether you are a CEO or an end-user, having a basic understanding of information systems is critical in today's digital age. WE WANT YOU (Note: Do you have knowledge or insights to share? Unlock new opportunities and expand your reach by joining our authors team. Click Registration to
join us and share your expertise with our readers.) Speech tips: Please note that any statements involving politics will not be approved. An information system is a software, and telecommunications network that collects relevant data, typically within an organization. Many companies utilize information systems to complete and manage their
operations and engage with their customers. What is an Information System? An Information system is a combination of hardware and distribute useful data, typically in an organization. It defines the flow of information within the system. The objective of an information
system is to provide appropriate information to the user, gather the data, process the data, and communicate information to the user of the system. Components of Information System is to provide appropriate information to the user of the system. Components of Information System is to provide appropriate information to the user of the system.
consists of an input and an output device, operating system, processor, and media devices. This also includes computer peripheral devices. 2. Computer SoftwareThe application programs include a set of instruction used for
processing information. Software is further classified into three types: System SoftwareProcedures3. DatabasesData are the raw facts and figures that are unorganized that are un
resources. As the hardware can't work without software the same as software needs data for processing. Data are managed using Database managed using Database managed using Database software is used for efficient access for required data, and to manage knowledge bases. 4. NetworkNetworks resources refer to the telecommunication networks like the intranet,
communications processors, and other devices interconnected by communications media and controlled by software. Networks include communication media, and Network Support. 5. Human ResourcesIt is associated with the manpower required to run and manage the system. People are the end user of the information system, end-user use
information produced for their own purpose, the main purpose of the information system is to benefit the end user. The end user can be accountants, engineers, salespersons, customers, clerks, or managers etc. People are also responsible to develop and operate information systems. They include systems analysts, computer operators, programmers,
data that help in making decisions for management. Decision Support Systems: Decision support systems enable an organization to make decisions with regard to its operations. It can be employed in both fully automated and human-operated devices is advised
Executive Information Systems: The final type of management support system is the executive support system (EIS). They assist in making senior-level choices for an organization. How does an Information System Work? Input: The system takes data and information from a variety of sources, including sensors, keyboards, scanners, and
databases. Processing: The system converts raw data into useful information using a variety of techniques such as sorting, classifying, calculating, analyzing, and synthesizing. Storage: The system displays information to
users such as reports, graphs, charts, or dashboards. Feedback: The system requests feedback from users and other stakeholders to assess its effectiveness and enhance its design and functioning. Facts of Information Systems of New York (State Storage) and Success and Endough (State Storage) and Storage and Success and Endough (State Storage) and Storage and Success and Endough (State Storage) and Storage and Storag
information technology has increased in the last decade. Today's organizations are acknowledging the importance of information systems. It has been accepted worldwide that information systems are capture data, transmit data, store data
retrieve data, manipulate data and display information system are customers, business processes, product services and communication system is done based on elements of the model. Customers are customers, business processes, product services and communication system is done based on elements of the model. Customers are customers, business processes, product services and communication system is done based on elements of the model. Customers are customers, business processes, product services and communication system is done based on elements of the model. Customers are customers, business processes, product services and communication system is done based on elements of the model. Customers are customers are customers are customers.
internal as well as external. Customers are beneficiaries of products and services provided by an information system could be people visiting a website for shopping or e-commerce transaction, people searching for tax saving tools, etc. Internal customers of an information system could be
employee receiving salary from payroll system, employee checking inventory and stock, etc. Sometimes these employees could be customer of manufactured product. For a manufacturing organization, production department would be
customer for supply department. Therefore, information systems are design to service what is best for external customers. However, information systems are design to service what is best for external customers. However, information systems are design to service what is best for external customers.
products and services. An information system can generate products as well as service depending upon industry it is developed for. In clothing industry design is a service. In internet banking, customer can accomplish the entire banking
 task, without visiting the bank. Internet banking, therefore, is a service and products based on its design. An effective information system needs to satisfy customer expectation. An information system should provide product and service based on customer's needs and
requirements. Business Processes Business Processes include talking to customer, understanding her requirement, manufacturing product as per requirement.
process directly impacts business performance. An information system can improve a business process, by providing relevant information system model. Their
presence is required to deliver efficient business process and customer delighting products and services. Infusion of technology within business creates win-win situations. Technology improves internal communication via email chat, etc. and improve external communication through website, webinar etc. Access to valuable information is quicker
through information system, and this can provide a competitive edge in digital age. Information system model highlights the pivot role information system; as set of components (subsystems) that operate together to achieve certain objectives. The objectives of a system are realized in its
outputs. An information system is a system that accepts data resources of people (end users and IS specialists), hardware (machines and media), software (programs and procedures), data (data and knowledge basis), and networks
(communications media and network support) to perform input, processing, output, storage, and control activities that convert data resources into information systems. It provides a framework that emphasizes four major concepts and control activities that convert data resources into information systems. It provides a framework that emphasizes four major concepts.
that can be applied to all types of information systems. People resources include end users and procedures, data resources can include
data and knowledge bases, and network resources include communications media and networks. Data resources are transformed by information processing activities into a variety of information products for end users. Information processing activities into a variety of information processing consists of input, processing activities into a variety of information processing consists of input, processing activities into a variety of information processing consists of input, processing consists of input, processing activities into a variety of information processing consists of input, processing activities into a variety of information processing consists of input, processing consists of input, processing consists of input, processing activities into a variety of information processing consists of input, processin
Resources People are required for the operation of all information systems. These people resources include end users and IS specialists. End users (also called users or clients) are people who use an information system or the information system or the information it produces. They can be accountants, salespersons, engineers, clerks, customers, or managers. Most of us are
information system end users. IS Specialists are people who develop and operate information systems. They include systems analysts, programmers, computer operators, and other managerial technical, and clerical IS personnel. Briefly, systems analysts design information systems based on the information requirements of end uses, programmers
prepare computer programs based on the specifications of systems analysts, and computer operators operate large computer systems. 2. Hardware Resources The concept of Hardware resources includes all physical devices and materials used in information processing. Specially, it includes not only machines, such as computers and other equipment
but also all data media, that is, all tangible objects on which data is recorded, from sheets of paper to magnetic disks. Example of hardware in computer-based information systems are: Computer systems, which consist of central processing units containing microprocessors, and variety of interconnected peripheral devices. Examples are
microcomputer systems, midrange computer systems, and large mainframe computer systems. Computer peripherals, which are devices such as a keyboard or electronic mouse for input of data and commands, a video screen or printer for output of information, and magnetic or optical disks for storage of data resources. 3. Software Resources The
concept of Software Resources includes all sets of information processing instructions. This generic concept of software includes not only the sets of information processing instructions called programs, which direct and control computer hardware, but also the sets of information processing instructions called programs, which direct and control computer hardware, but also the sets of information processing instructions called programs, which direct and control computer hardware, but also the sets of information processing instructions called procedures. It is important to
understand that even information systems of ancient times, or the manual and machine-supported information systems still used in the world today. They all require software resources in the form of information processing instructions and
procedures in order to properly capture, process, and disseminate information to their users. The following are the examples of software resources: System Software, such as an operating system program, which con controls and supports the operations of a computer system. Application Software, which are programs that direct processing for a
particular use of computers by end users. Examples are a sales analysis program, and a work processing program. Procedures, which are operating instructions for filling out a paper form or using a software package.4. Data ResourcesData is more than
the raw material of information systems. The concept of data resources has been broadened by managers and information systems professionals. They realize that must be managed effectively to benefit all end users in an organization. Data can take
many forms, including traditional alphanumeric data, composed of numbers and alphabetical and other characters that describe business transactions; image data, such as graphic shapes and figures; and audio data, the human voice and
other sounds, are also important forms of data. Knowledge bases that hold knowledge in variety of forms such as facts, rules, and case examples about successful business practices. For example, data about sales transactions may
be accumulated and stored in a sales database for subsequent processing that yields daily, weekly, and monthly sales analysis reports for management. Knowledge bases are used by knowledge management systems and expert advice on specific subjects. Data Vs Information: The word data is the plural of
datum, though data commonly represents both singular and plural forms. Data are raw facts or observations, typically about physical phenomena or business transactions. For example, a spacecraft launch or the sale of an automobile would generate a lot of data describing those events. More specifically, data are objective measurements of the
attributes (the characteristics) of entities (such as people, places, things, and events). Example: A spacecraft launch generates vast amounts of data. Electronic transmissions of data (telemetry) form thousands of sensors are converted to numeric and text data by computers. Voice and image data are also captured through video and radio monitoring
of the launch by mission controllers. Of course, buying a car or an airline ticket also produces a lot of data. Just think of the hundreds of facts needed to describe the characteristics of the car you want and its financing, or the details for even the simplest airline reservation. Peoples often use the terms data and information interchangeably. However, its financing of the car you want and its financing of the car you want and its financing.
is better to view data as raw material resources that are processed into finished information products. Then we can define information processing or information processing or information processing) where (1) its
form is aggregated, manipulated, and organized; (2) its content is analyzed and view information as processed data placed in a context that gives it value for specific end users. Example: Names, quantities, and dollar amounts recorded on sales forms represent data
about sales transactions. However, a sales manager may not regard these as information be furnished, specifying, for example, the amount of sales by product type, sales territory, or sales persons. 5. Network Resources Telecommunications networks like
the Internet, intranets, and extranets have become essential to the successful operations of all types of organizations media and controlled by communications software
The concept of Network resources emphasizes that communication media, Examples include twisted pair wire, coaxial cable, fiber-optic cable, microwave systems, and communication satellite systems. Network Support, This
generic category includes all of the people, hardware, software, and data resources that directly support the operation and use of a communications network. Examples include communications control software such as network operating systems and Internet packages. In summary, these five components together make up the five component
framework, which are the five fundamental components of an information system. First you will need the hardware in order to start off your system. Then you have set up your hardware to run it, you will need data to input into your hardware. Once you have
your data ready you will need procedures set in play to properly at all times. As you can see, you will need every component in order to ensure that you have a functional running information system. The information
system is the process of correct management and flow of data in a system such that the information reaches its correct receiver. It also collects data, analyzes them, and communicates the appropriate information system. It is mostly used in organizations for data collection and distribution. It is also used to establish a
communication system with customers to manage various operations. It is a collection of hardware, software, and other elements which work together in correct sync to establish its fundamental requirement. This system accepts various formats of data and performs different types of operations on them to make them products that will be sent to
other users. The final result thus obtained can be used to take various decisions related to the market, and also helps organize and visualize various scenarios. Types The types of Information Systems are as follows? Operations support systems Management IS Decision support systems Executive IS The 5 major components of IS that help in its
processing are as follows? Hardware According to the size and topology of the project, hardware pieces of equipment are designed. It comprises input and output devices that need to be attached to the IS
Nowadays, the cost of hardware has decreased while its performance has enhanced, hence there is a high chance of hardware proficiency in information systems? the central hardware elements can be broadly divided into two groups? Computer systems? the central hardware elements can be broadly divided into two groups?
the main hardware elements. Software the data inputs. The programs manage and establish coordination among the hardware elements to process and analyze the data inputs. The programs installed are called the software, comprising a set of rules
which are to be followed. The software also manages the storage of media and resources. The task of system software installed is of 3 types: system software application software and procedures. The task of system software installed is of 3 types: system software installed is of 3 ty
accepted by the software which is further processed is called the data. The correct type of program is executed upon the accepted data to serve them to the user. The data after being processed turns out to be effective for the organization. Both the software and hardware need to work on sync to establish data processing and management. This
process of correctly handling the data is called the Database management system. There is various software for the database or facts
about a certain feature or company situation. Network The linkage between devices is done by the network for communication and data flow in the organization. A network is a combination of hardware (routers, hubs, and cable) and software (routers, hubs, hub
also contains various communicating devices and interconnecting devices and also a support for the network. The network elements can be broadly divided into two groups? Communication media? the medium through which the
communicating channels transmit like communication satellites or microwave signals. Network to support ? the people or software that works with the hardware elements and network to support the process. It can also include data equipment. Human resource All of the automated elements discussed above require a human to manage and control them
these controlling heads are called the human resource team. The main aim of this team is to ensure maximum benefit to the end users. The end users are the customers who can be programmers, managers, analysts, or operators. The human resource team
can be broadly divided into two groups? End users or clients? the people who can only see the results. System specialists? the team who works on the background to develop the correct results. System specialists? the team who works on the background to develop the correct results.
providing a secure data storage and analysis system which helps in taking balanced decisions. Also, communication systems are comprised of six essential components: hardware, software, network communications, data, people, and processes.
These components interact seamlessly to gather, store, process, and disseminate information throughout an organization. Their synergistic relationship enables efficient operation systems are the backbone of modern organizations,
providing the infrastructure and tools to collect, store, process, and disseminate data. These components provide the foundation formation system, including computers, servers, storage devices, and networking equipment. These components provide the foundation formation system, including computers, servers, storage devices, and networking equipment. These components provide the foundation formation system.
data processing and communication. 2. Software The programs that control and manage the operation of the information system. Software includes operating systems. 3. Network Communications The infrastructure that connects computers and other devices within the information system.
This includes local area networks (LANs), wide area networks (WANs), and telecommunications networks. 4. Data The information that is processed and stored within the information system. Data can be structured (e.g., in a database) or unstructured (e.g., text documents). 5. People The individuals who use, manage, and maintain the information
system. People interact with the system through user interfaces, perform data analysis, and ensure its security. 6. Processes Include data collection, storage, retrieval, processing, and reporting. Synergistic Interaction These six components interact
synergistically to create a cohesive information system. Hardware provides the processing power and storage capacity, while software governs its operation. Network communications facilitate data exchange, and data is the raw material that is processed and analyzed. People interact with the system and carry out essential tasks, while processes
define the rules and procedures for data handling. By working together, these components enable the information system to perform its critical functions: Gather data extraction tools. Store data: Securely store data in
databases and other storage media for future retrieval and processing. Process data: Perform operations, and aggregating, to extract meaningful insights. Disseminate data: Share data with authorized users in various formats, including reports, visualizations, and dashboards. Support decision-making: Provide
timely and accurate information to support strategic planning, operations, and gain a competitive advantage in today's data-driven world. By understanding the six main components and their
synergistic interactions, organizations can optimize their information systems for maximum value. #Datamanagement #Infosystems for maximum value their information systems for maximum value. #Datamanagement #Infosystems for maximum value their information systems for maximum value. #Datamanagement #Infosystems for max
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and fulfillment to one's life. However, it's not uncommon for individuals to come up with reasons why they haven't taken the plunge into the world of music. In this discussion, we will delve into some of the common excuses for Not
Learning a Musical Instrument Hence, information systems can be viewed as having six major components of the computer information system? The main components of information systems are computer hardware and software, software, network communications, data, people, and processes. What are the components of the computer hardware and software, software, network communications, data, people, and processes.
telecommunications, databases and data warehouses, human resources, and procedures. What are the 5 components of information system? An information system? An information system is described as having five components. Computer software needs to know what to do, and
that is the role of software. Telecommunications. Databases and data warehouses. Human resources and procedures will cover: input devices, processing devices, output devices and memory (storage) devices. Collectively, these
hardware components make up the computer system. What are the six functions of information technology? These were some of the functions of the IT department....Information Development. Communication. Company Website. What are the types of
computer based information system? Types of Computer Based Information Systems, What are the main components of a system? Every System has an IPO: Input. Process, Output. When you look at any system, in its simples
form, it has 3 components. It's what I'll call IPO: Input, Process, Output. What are the 5 components of computer system? 5 parts of a computer A motherboard. A Central Processing Unit (CPU) A Graphics Processing Unit (CPU), also known as a video card. Random Access Memory (RAM), also known as volatile memory. Storage: Solid State Drive
(SSD) or Hard Disk Drive (HDD) What are the five main components of an information system? 5 Components of Information Systems Computer software. The hardware needs to know what to do, and that is the role of software. Telecommunications. Databases and data
warehouses. Human resources and procedures. What are the basic components of a computer based information system are: Hardware- these are the devices like the monitor, processor, printer and keyboard, all of which work together to accept, process, show data and information. What
are the 6 elements of information system? What Are the Six Elements of an Information system? 1 Hardware, the hardware wouldn't be very useful. 3 Data. Data, or information, is the third element of a CBIS. 4 Procedures. 5 People. 6
Communication. What is computer based information system (CBIS)? What is COMPUTER BASED INFORMATION SYSTEM (CBIS)? Computer technology to carry out some or all of its planned tasks. The basic components of computer based information system are: What are the four
components of Information Technology? The first four components (hardware, software, database and network) make up what is known as the information systems that watch over safety measures, risk and the management of data.
IntroductionProliferation of information technology has increased in the last decade. Today's organizations are acknowledging the importance of information systems are capture data,
transmit data, store data, retrieve data, retrieve data, manipulate data and display information system are customers, business processes, product services and communication system has end users or customers. An
information system can have internal as well as external. Customers are beneficiaries of products and services provided by an information system. Here external customers could be people visiting a website for shopping or e-commerce transaction, people searching for cooking recipe, searching for tax saving tools, etc. Internal customer of an
information system could be employee receiving salary from payroll system, employee checking inventory and stock, etc. Sometimes these employees could be customer of manufactured product. For a manufacturing organization,
production department would be customer for supply department. Therefore, information systems are design to service what is best for external customers. However, information systems should be flexible enough to support internal requirements also. Products and Services The
result of data transformation is products and services. An information system can generate product as well as service depending upon industry it is developed for. In clothing industry designer clothes are product and customer's requirement. Here completed garments are product and custom design is a service. In internet banking, customer can
accomplish the entire banking task, without visiting the bank. Internet banking, therefore, is a service and product and service based on customer's
needs and requirements. Business Processes Business Processes include talking to customer, understanding her requirements, manufacturing product as per requirement, provide post sales service, etc. A business process may not be structured all the time and may not be formal. An improvement in the
business process directly impacts business process or elimination system can improve a business process, by providing relevant information fechnology and computers are the central pieces of an information system
model. Their presence is required to deliver efficient business process and customer delighting products and services and customer delighting products and services internal communication through website, webinar etc. Access to valuable information is
quicker through information system, and this can provide a competitive edge in digital age. Information system model highlights the pivot role information system, and this can provide a competitive edge in digital age. Information system model highlights the pivot role information system, and this can provide a competitive edge in digital age. Information system, and this can provide a competitive edge in digital age. Information system, and this can provide a competitive edge in digital age. Information system, and this can provide a competitive edge in digital age. Information system, and this can provide a competitive edge in digital age. Information system, and this can provide a competitive edge in digital age. Information system, and this can provide a competitive edge in digital age. Information system, and this can provide a competitive edge in digital age. Information system, and this can provide a competitive edge in digital age. Information system, and this can provide a competitive edge in digital age. Information system, and this can provide a competitive edge in digital age. Information system, and this can provide a competitive edge in digital age. Information system age and the competitive edge in digital age. Information system age are also accompeted to the competitive edge in digital age. Information system age are also accompeted to the competitive edge in digital age. Information system age are also accompeted to the competitive edge in digital age. Information system age are also accompeted to the competitive edge in digital age. Information system age are also accompeted to the competitive edge in digital age. Information system age are also accompeted to the competitive edge in digital age. Information system age are also accompeted to the competitive edge in digital age. Information system age are also accompeted to the competitive edge in digital age. Information system age are also accompeted to the competitive edge in digital age. Information age are also accompeted to the competitiv
manager asks you to track the expenses of the business and send her the list so that she can see where the money has gone. You decide to use a spreadsheet on your laptop to enter the list of expenses you have collected and then email the spreadsheet to her once you are done. You will need to have a system, a laptop, a spreadsheet running and
connect to email, and an internet connection. All these components must work together perfectly! In essence, you are using the internet connection. The role of this IS system is to enable you to create new value (i.e., expense tracker) and for your manager to use the
information you disseminate "to support decision making, coordination, control, analysis, and visualization in an organization." (Laudon et al., 2011) You and your manager have obtained your goals through the processes you have created to capture the data, calculate it, check it, and how and when your manager receives the new information you
created to make her decision to manage her company. Hence, information systems can be viewed as having six major components: hardware, software, network communications, data, people, and processes. Figure \(\\PageIndex\{1}\\): Components of Information Systems. Image by Ly-Huong Pham is licensed under CC BY NC Each has a specific role
and all roles must work together to have a working information system. In this book, we group the first four components that deliver value to organizations in how they use the collection of technology. People and Processes are the two components that deliver value to organizations in how they use the collection of technology.
of scientific knowledge for practical purposes. From the invention of the wheel to take it for granted. As discussed before, the first four components of information systems - hardware, network communication, and data, are all
technologies that must integrate well together. Each of these will get its own chapter and a much lengthier discussion, but we will take a moment to introduce them to give you a big picture of what each component is and how they work together. Hardware represents the physical components of an information system. Some can be seen or touched
easily, while others reside inside a device that can only be seen by opening up the device's case. Keyboards, mice, pens, disk drives, iPads, printers, and flash drives are all visible examples. Computer chips, motherboards, and internal memory chips are the hardware that resides inside a computer case and not usually visible from the outside. Chapter
2 will go into more details to discuss how they function and work together. For example, users use a keyboard to enter data or use a pen to draw a picture. Figure \(\PageIndex{2}\): Keyboard by Gerd Altmann from Pixabay, All
images are licensed under CC BY 2.0 Software is a set of instructions that tell the hardware what to do. Software is a set of instructions that tell the hardware what to do. There are several categories of software, with the two main
categories being operating-system and application software, Figure \(\PageIndex{3}\): This image is a derivative work from David Bourgeois is licensed under CC BY-NC Operating system software provides an interface between the hardware and
application to protect the programmers from learning about the underlying hardware's specifics. Chapter 3 will discuss Software more thoroughly. Here are a few examples: Examples of Operating Systems and Applications by Devices Devices Devices Operating Systems and Applications by Devices Devices Operating Systems and Applications by Devices Devices Operating Systems and Applications Desktop Apple macOS, Microsoft Windows Adobe Photoshop, Microsoft
Excel, Google Map Mobile Google Android, Apple iOS Texting, Google Map Data The third component is data. You can think of data as a collection of non-disputable raw facts. For example, your first name, driver's license number, the city you live in, a picture of your pet, a clip of your voice, and your phone number are all pieces of raw data. You can
see or hear your data, but by themselves, they don't give you any additional meanings beyond the data itself. For example, you can read a driver's license number, but you know nothing else about this person. They are typically what IS would need to collect from you or other sources.
However, once these raw data are aggregated, indexed, and organized together into a logical fashion using software such as a spreadsheet, or a database, the collection of these organized data will present new information and insights that a single raw fact can't convey. The example of collecting all expenses (i.e., raw data) to create an expense
tracker (new information derived) discussed earlier is also a good example. In fact, all of the definitions presented at the beginning of this chapter focused on how information systems manage data. Organizations callect all kinds of data, processed and organized them in some fashion, and use it to make decisions. These decisions can then be analyzed
as to their effectiveness, and the organization can be improved. Chapter 4 will focus on data and databases and their uses in organizations. The components of hardware, software, and data have long been considered the core technology of information systems. However, networking communication is another component of an IS that some believe
should be in its own category. An information system can exist without the ability to communicate. For instance, the first personal computers were stand-alone machines that did not have excess to the Internet. Information Systems, however, have evolved since they were developed. For example, we used to have only desktop operating system.
software or hardware. However, in today's environment, the operating system software now includes mobile OS, and hardware now includes other hardware devices besides desktops. It is extremely rare for a computer device that does not connect to another device or a network. Chapter 5 will go into this topic in greater detail. Figure \
(\PageIndex{4}\): Network by Gerd Altmann from Pixabay is licensed under CC BY-SA 2.0 People built computers for people to use. This means that there are many different categories in the development and management of information systems to help organizations to create value and improve productivity, such as: Users: these are the people who
actually use an IS to perform a job function or task. Examples include: a student uses a spreadsheet or a word processing software program. Technical Developers: these are the people who actually create the technologies used to build an information system. Examples include a computer chip engineer, a software programmer, and an application
programmer. Business Professionals: these are the CEOs, owners, managers, entrepreneurs, employees who use IS to start or expand their business to perform their job functions such as accounting, marketing, sales, human resources, support customers, among others. Examples include famous CEOs such as Jeff Bezos of Amazon, Steve Jobs of
Apple, Bill Gates of Microsoft, and Marc Benioff of Salesforce. Figure \(\PageIndex{5}\): Jeff Bezos, by Seattle City Council via Flicker, All images are licensed under CC BY-SA 2.0 IT Support: These specialized professionals are trained to
keep the information systems running smoothly to support the business and keep it safe from illegal attacks. Examples include network analysts, data center support, help-desk support. These are just some of the key people; more details will be covered in Chapters 9 and 10. The last component of information systems is Process. A business process is
a series of steps undertaken to achieve a desired outcome or goal. Businesses have to continually innovate to either create more revenues through new products and services that fulfill customers' needs or to find cost-saving opportunities in the ways they run their companies. Simply automating activities using technology is not enough. Information
systems are becoming more and more integrated with organizational processes to deliver value in revenue-generating and cost-saving activities that can give companies competitive advantages over their competitors. Specialized standards or processes such as "business process management," "enterprise resource
planning," and "customer relationship management" all have to do with the continued improvement of these business procedures and to gain a deeper understanding of customers' needs. Businesses hoping to gain an advantage over their competitors are highly focused on
this component of information systems. We will discuss processes in Chapter 8. Laudon, K. C., & Laudon, J. P. (2011). Management information systems. Upper Saddle River, NJ: Prentice-Hall.
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