Glossary

3-D printing Uses machines to make solid objects, layer by layer, from specifications in a digital file. Also known as additive manufacturing.

3G networks Cellular networks based on packet-switched technology with speeds ranging from 144 Kbps for mobile users to over 2 Mbps for stationary users, enabling users to transmit video, graphics, and other rich media, in addition to voice.

4G networks The next evolution in wireless communication is entirely packet switched and capable of providing between 1 Mbps and 1 Gbps speeds; up to ten times faster than 3G networks.

acceptable use policy (AUP) Defines acceptable uses of the firm's information resources and computing equipment, including desktop and laptop computers, wireless devices, telephones, and the Internet, and specifies consequences for noncompliance.

acceptance testing Provides the final certification that the system is ready to be used in a production setting.

accountability The mechanisms for assessing responsibility for decisions made and actions taken.

advertising revenue model Web site generating revenue by attracting a large audience

affiliate revenue model an e-commerce revenue model in which Web sites are paid as "affiliates" for sending their visitors to other sites in return for a referral fee.

agency theory Economic theory that views the firm as a nexus of contracts among self-interested individuals who must be supervised and managed.

agent-based modeling Modeling complex phenomena as systems of autonomous agents that follow relatively simple rules for interaction.

agile development Rapid delivery of working software by breaking a large project into a series of small sub-projects that are completed in short periods of time using iteration and continuous feedback.

analytic platform Preconfigured hardware-software system that is specifically designed high-speed analysis of large datasets.

analytical CRM Customer relationship management applications dealing with the analysis of customer data to provide information for improving business performance.

Android A mobile operating system developed by Android, Inc. (purchased by Google) and later the Open Handset Alliance as a flexible, upgradeable mobile device platform.

antivirus software Software designed to detect, and often eliminate, computer viruses from an information system.

application controls: Specific controls unique to each computerized application that ensure that only authorized data are completely and accurately processed by that application.

application server Software that handles all application operations between browser-based computers and a company's back-end business applications or databases.

apps Small pieces of software that run on the Internet, on your computer, or on your cell phone and are generally delivered over the Internet.

artificial intelligence (AI) The effort to develop computer-based systems that can behave like humans, with the ability to learn languages, accomplish physical tasks, use a perceptual apparatus, and emulate human expertise and decision making.

attribute A piece of information describing a particular entity.

augmented reality A technology for enhancing visualization. Provides a live direct or indirect view of a physical real-world environment whose elements are augmented by virtual computer-generated imagery.

authentication The ability of each party in a transaction to ascertain the identity of the other party.

automation Using the computer to speed up the performance of existing tasks.

autonomic computing Effort to develop systems that can manage themselves without user intervention.

backward chaining A strategy for searching the rule base in an expert system that acts like a problem solver by beginning with a hypothesis and seeking out more information until the hypothesis is either proved or disproved.

balanced scorecard method Framework for operationalizing a firms strategic plan by focusing on measurable financial, business process, customer, and learning and growth outcomes of firm performance.

bandwidth The capacity of a communications channel as measured by the difference between the highest and lowest frequencies that can be transmitted by that channel.

behavioral models Descriptions of management based on behavioral scientists' observations of what managers actually do in their jobs.

behavioral targeting Tracking the click-streams (history of clicking behavior) of individuals across multiple Web sites for the purpose of understanding their interests and intentions, and exposing them to advertisements which are uniquely suited to their interests.

benchmarking Setting strict standards for products, services, or activities and measuring organizational performance against those standards.

best practices The most successful solutions or problem-solving methods that have been developed by a specific organization or industry.

big data Datasets with volumes so huge that they are beyond the ability of typical relational DBMS to capture, store, and analyze. The data are often unstructured or semi-structured.

biometric authentication Technology for authenticating system users that compares a person's unique characteristics such as fingerprints, face, or retinal image, against a stored set profile of these characteristics.

bit A binary digit representing the smallest unit of data in a computer system. It can only have one of two states, representing 0 or 1.

blade server Entire computer that fits on a single, thin card (or blade) and that is plugged into a single chassis to save space, power and complexity.

blog Popular term for Weblog, designating an informal yet structured Web site where individuals can publish stories, opinions, and links to other Web sites of interest.

blogosphere Totality of blog-related Web sites.

Bluetooth Standard for wireless personal area networks that can transmit up to 722 Kbps within a 10-meter area.

botnet A group of computers that have been infected with bot malware without users' knowledge, enabling a hacker to use the amassed resources of the computers to launch distributed denial-of-service attacks, phishing campaigns or spam.

broadband High-speed transmission technology. Also designates a single communications medium that can transmit multiple channels of data simultaneously.

bugs Software program code defects.

bullwhip effect Distortion of information about the demand for a product as it passes from one entity to the next across the supply chain.

business continuity planning Planning that focuses on how the company can restore business operations after a disaster strikes.

business driver A force in the environment to which businesses must respond and that influences the direction of business.

business ecosystem Loosely coupled but interdependent networks of suppliers, distributors, outsourcing firms, transportation service firms, and technology manufacturers

business functions Specialized tasks performed in a business organization, including manufacturing and production, sales and marketing, finance and accounting, and human resources.

business intelligence Applications and technologies to help users make better business decisions.

business model An abstraction of what an enterprise is and how the enterprise delivers a product or service, showing how the enterprise creates wealth.

business performance management Attempts to systematically translate a firm's strategies (e.g., differentiation, low-cost producer, market share growth, and scope of operation) into operational targets.

business process management Business process management (BPM) is an approach to business which aims to continuously improve and manage business processes.

business process redesign Type of organizational change in which business processes are analyzed, simplified, and redesigned.

business processes The unique ways in which organizations coordinate and organize work activities, information, and knowledge to produce a product or service.

business-to-business (B2B) electronic commerce Electronic sales of goods and services among businesses.

business-to-consumer (B2C) electronic commerce Electronic retailing of products and services directly to individual consumers.

byte A string of bits, usually eight, used to store one number or character in a computer system.

cable Internet connections Internet connections that use digital cable lines to deliver high-speed Internet access to homes and businesses.

capital budgeting The process of analyzing and selecting various proposals for capital expenditures.

carpal tunnel syndrome (CTS) Type of RSI in which pressure on the median nerve through the wrist's bony carpal tunnel structure produces pain.

case-based reasoning (CBR) Artificial intelligence technology that represents knowledge as a database of cases and solutions.

cell phone A device that transmits voice or data, using radio waves to communicate with radio antennas placed within adjacent geographic areas called cells.

change agent In the context of implementation, the individual acting as the catalyst during the change process to ensure successful organizational adaptation to a new system or innovation.

change management Managing the impact of organizational change associated with an innovation, such as a new information system.

chat Live, interactive conversations over a public network.

chief data officer (CDO) Responsible for enterprise-wide governance and utilization of information to maximize the value the organization can realize from its data.

chief information officer (CIO) Senior manager in charge of the information systems function in the firm.

chief knowledge officer (CKO) Senior executive in charge of the organization's knowledge management program.

chief privacy officer (CPO) Responsible for ensuring the company complies with existing data privacy laws.

chief security officer (CSO) Heads a formal security function for the organization and is responsible for enforcing the firm's security policy.

choice Simon's third stage of decision making, when the individual selects among the various solution alternatives.

Chrome OS Google's lightweight computer operating system for users who do most of their computing on the Internet; runs on computers ranging from netbooks to desktop computers.

churn rate Measurement of the number of customers who stop using or purchasing products or services from a company. Used as an indicator of the growth or decline of a firm's customer base.

classical model of management Traditional description of management that focused on its formal functions of planning, organizing, coordinating, deciding, and controlling.

click fraud Fraudulently clicking on an online ad in pay per click advertising to generate an improper charge per click.

client The user point-of-entry for the required function in client/server computing. Normally a desktop computer, workstation, or laptop computer.

client/server computing A model for computing that splits processing between clients and servers on a network, assigning functions to the machine most able to perform the function.

cloud computing Web-based applications that are stored on remote servers and accessed via the "cloud" of the Internet using a standard Web browser.

collaboration Working with others to achieve shared and explicit goals.

co-location a kind of Web site hosting in which firm purchase or rent a physical server computer at a hosting company's location in order to operate a Web site.

community provider a Web site business model that creates a digital online environment where people with similar interests can transact (buy and sell goods); share interests, photos, videos; communicate with like-minded people; receive interest-related information; and even play out fantasies by adopting online personalities called avatars.

communities of practice (COPs) Informal social networks of professionals and employees within and outside the firm who have similar work-related activities and interests and share their knowledge.

competitive forces model Model used to describe the interaction of external influences, specifically threats and opportunities, that affect an organization's strategy and ability to compete.

complementary assets Additional assets required to derive value from a primary investment.

component-based development Building large software systems by combining pre-existing software components.

computer abuse The commission of acts involving a computer that may not be illegal but are considered unethical.

computer crime The commission of illegal acts through the use of a computer or against a computer system.

computer forensics The scientific collection, examination, authentication, preservation, and analysis of data held on or retrieved from computer storage media in such a way that the information can be used as evidence in a court of law.

computer hardware Physical equipment used for input, processing, and output activities in an information system.

computer literacy Knowledge about information technology, focusing on understanding of how computer-based technologies work.

computer software Detailed, preprogrammed instructions that control and coordinate the work of computer hardware components in an information system.

computer virus Rogue software program that attaches itself to other software programs or data files in order to be executed, often causing hardware and software malfunctions.

computer vision syndrome (CVS) Eyestrain condition related to computer display screen use; symptoms include headaches, blurred vision, and dry and irritated eyes.

computer-aided design (CAD) Information system that automates the creation and revision of designs using sophisticated graphics software.

computer-aided software engineering (CASE) Automation of step-by-step methodologies for software and systems development to reduce the amounts of repetitive work the developer needs to do.

consumer-to-consumer (C2C) electronic commerce Consumers selling goods and services electronically to other consumers.

consumerization of IT New information technology originating in the consumer market that spreads to business organizations.

controls All of the methods, policies, and procedures that ensure protection of the organization's assets, accuracy and reliability of its records, and operational adherence to management standards.

conversion The process of changing from the old system to the new system.

cookies Tiny file deposited on a computer hard drive when an individual visits certain Web sites. Used to identify the visitor and track visits to the Web site.

cooptation Bringing the opposition into the process of designing and implementing a solution without giving up control of the direction and nature of the change.

copyright A statutory grant that protects creators of intellectual property against copying by others for any purpose for a minimum of 70 years.

core competency Activity at which a firm excels as a world-class leader.

core systems Systems that support functions that are absolutely critical to the organization.

cost transparency the ability of consumers to discover the actual costs merchants pay for products.

counterimplementation A deliberate strategy to thwart the implementation of an information system or an innovation in an organization.

cross-selling Marketing complementary products to customers.

crowdsourcing Using large Internet audiences for advice, market feedback, new ideas and solutions to business problems. Related to the 'wisdom of crowds' theory.

culture The set of fundamental assumptions about what products the organization should produce, how and where it should produce them, and for whom they should be produced.

customer lifetime value (CLTV) Difference between revenues produced by a specific customer and the expenses for acquiring and servicing that customer minus the cost of promotional marketing over the lifetime of the customer relationship, expressed in today's dollars.

customer relationship management (CRM) Business and technology discipline that uses information systems to coordinate all of the business processes surrounding the firm's interactions with its customers in sales, marketing, and service.

customer relationship management systems Information systems that track all the ways in which a company interacts with its customers and analyze these interactions to optimize revenue, profitability, customer satisfaction, and customer retention.

customization The modification of a software package to meet an organization's unique requirements without destroying the package software's integrity.

customization In e-commerce, changing a delivered product or service based on a user's preferences or prior behavior.

cyberlocker Online file-sharing service that allows users to upload files to a secure online storage site from which the files can be synchronized and shared with others.

cybervandalism Intentional disruption, defacement, or destruction of a Web site or corporate information system.

cyberwarfare State-sponsored activity designed to cripple and defeat another state or nation by damaging or disrupting its computers or networks.

data Streams of raw facts representing events occurring in organizations or the physical environment before they have been organized and arranged into a form that people can understand and use.

data administration A special organizational function for managing the organization's data resources, concerned with information policy, data planning, maintenance of data dictionaries, and data quality standards.

data cleansing Activities for detecting and correcting data in a database or file that are incorrect, incomplete, improperly formatted, or redundant. Also known as data scrubbing.

data definition DBMS capability that specifies the structure and content of the database.

data dictionary An automated or manual tool for storing and organizing information about the data maintained in a database.

data element A field.

data flow diagram (DFD) Primary tool for structured analysis that graphically illustrates a system's component process and the flow of data between them.

data governance Policies and processes for managing the availability, usability, integrity, and security of the firm's data.

data inconsistency The presence of different values for same attribute when the same data are stored in multiple locations.

data management technology Software governing the organization of data on physical storage media.

data manipulation language A language associated with a database management system that end users and programmers use to manipulate data in the database.

data mart A small data warehouse containing only a portion of the organization's data for a specified function or population of users.

data mining Analysis of large pools of data to find patterns and rules that can be used to guide decision making and predict future behavior.

data quality audit A survey and/or sample of files to determine accuracy and completeness of data in an information system.

data redundancy The presence of duplicate data in multiple data files.

data visualization Technology for helping users see patterns and relationships in large amounts of data by presenting the data in graphical form.

data warehouse A database, with reporting and query tools, that stores current and historical data extracted from various operational systems and consolidated for management reporting and analysis.

data workers People such as secretaries or bookkeepers who process the organization's paperwork.

database A group of related files.

database (rigorous definition) A collection of data organized to service many applications at the same time by storing and managing data so that they appear to be in one location.

database administration Refers to the more technical and operational aspects of managing data, including physical database design and maintenance.

database management system (DBMS) Special software to create and maintain a database and enable individual business applications to extract the data they need without having to create separate files or data definitions in their computer programs.

database server A computer in a client/server environment that is responsible for running a DBMS to process SQL statements and perform database management tasks.

decisional roles Mintzberg's classification for managerial roles where managers initiate activities, handle disturbances, allocate resources, and negotiate conflicts.

decision-support systems (DSS) Information systems at the organization's management level that combine data and sophisticated analytical models or data analysis tools to support semistructured and unstructured decision making.

deep packet inspection (DPI) Technology for managing network traffic by examining data packets, sorting out low-priority data from higher priority business-critical data, and sending packets in order of priority.

demand planning Determining how much product a business needs to make to satisfy all its customers' demands.

denial of service (DoS) attack Flooding a network server or Web server with false communications or requests for services in order to crash the network.

Descartes' rule of change A principle that states that if an action cannot be taken repeatedly, then it is not right to be taken at any time.

design Simon's second stage of decision making, when the individual conceives of possible alternative solutions to a problem.

digital asset management systems Classify, store, and distribute digital objects such as photographs, graphic images, video, and audio content.

digital certificate An attachment to an electronic message to verify the identity of the sender and to provide the receiver with the means to encode a reply.

digital dashboard Displays all of a firm's key performance indicators as graphs and charts on a single screen to provide one-page overview of all the critical measurements necessary to make key executive decisions.

digital divide Large disparities in access to computers and the Internet among different social groups and different locations.

digital firm Organization where nearly all significant business processes and relationships with customers, suppliers, and employees are digitally enabled, and key corporate assets are managed through digital means.

digital goods Goods that can be delivered over a digital network.

Digital Millennium Copyright Act (DMCA) Adjusts copyright laws to the Internet Age by making it illegal to make, distribute, or use devices that circumvent technology-based protections of copy-righted materials.

digital subscriber line (DSL) A group of technologies providing high-capacity transmission over existing copper telephone lines.

direct cutover A risky conversion approach where the new system completely replaces the old one on an appointed day.

disaster recovery planning Planning for the restoration of computing and communications services after they have been disrupted.

disintermediation The removal of organizations or business process layers responsible for certain intermediary steps in a value chain.

disruptive technologies Technologies with disruptive impact on industries and businesses, rendering existing products, services and business models obsolete.

distributed denial-of-service (DDoS) attack Numerous computers inundating and overwhelming a network from numerous launch points.

documentation Descriptions of how an information system works from either a technical or end-user standpoint.

domain name English-like name that corresponds to the unique 32-bit numeric Internet Protocol (IP) address for each computer connected to the Internet

Domain Name System (DNS) A hierarchical system of servers maintaining a database enabling the conversion of domain names to their numeric IP addresses.

domestic exporter Form of business organization characterized by heavy centralization of corporate activities in the home county of origin.

downtime Period of time in which an information system is not operational.

drill down The ability to move from summary data to lower and lower levels of detail.

drive-by download Malware that comes with a downloaded file a user intentionally or unintentionally requests.

due process A process in which laws are well-known and understood and there is an ability to appeal to higher authorities to ensure that laws are applied correctly.

dynamic pricing Pricing of items based on real-time interactions between buyers and sellers that determine what a item is worth at any particular moment.

e-government Use of the Internet and related technologies to digitally enable government and public sector agencies' relationships with citizens, businesses, and other arms of government.

efficient customer response system System that directly links consumer behavior back to distribution, production, and supply chains.

electronic business (e-business) The use of the Internet and digital technology to execute all the business processes in the enterprise. Includes e-commerce as well as processes for the internal management of the firm and for coordination with suppliers and other business partners.

electronic commerce The process of buying and selling goods and services electronically involving transactions using the Internet, networks, and other digital technologies.

electronic data interchange (EDI) The direct computer-to-computer exchange between two organizations of standard business transactions, such as orders, shipment instructions, or payments.

e-mail The computer-to-computer exchange of messages.

employee relationship management (ERM) Software dealing with employee issues that are closely related to CRM, such as setting objectives, employee performance management, performance-based compensation, and employee training.

encryption The coding and scrambling of messages to prevent their being read or accessed without authorization.

end-user development The development of information systems by end users with little or no formal assistance from technical specialists.

end-user interface The part of an information system through which the end user interacts with the system, such as on-line screens and commands.

end users Representatives of departments outside the information systems group for whom applications are developed.

enterprise applications Systems that can coordinate activities, decisions, and knowledge across many different functions, levels, and business units in a firm. Include enterprise systems, supply chain management systems, and knowledge management systems.

enterprise content management systems Help organizations manage structured and semistructured knowledge, providing corporate repositories of documents, reports, presentations, and best practices and capabilities for collecting and organizing e-mail and graphic objects.

enterprise software Set of integrated modules for applications such as sales and distribution, financial accounting, investment management, materials management, production planning, plant maintenance, and human resources that allow data to be used by multiple functions and business processes.

enterprise systems Integrated enterprise-wide information systems that coordinate key internal processes of the firm.

enterprise-wide knowledge management systems General-purpose, firmwide systems that collect, store, distribute, and apply digital content and knowledge.

entity A person, place, thing, or event about which information must be kept.

entity-relationship diagram A methodology for documenting databases illustrating the relationship between various entities in the database.

ergonomics The interaction of people and machines in the work environment, including the design of jobs, health issues, and the end-user interface of information systems.

e-tailer Online retail stores from the giant Amazon to tiny local stores that have Web sites where retail goods are sold.

ethical "no free lunch" rule Assumption that all tangible and intangible objects are owned by someone else, unless there is a specific declaration otherwise, and that the creator wants compensation for this work.

ethics Principles of right and wrong that can be used by individuals acting as free moral agents to make choices to guide their behavior.

evil twins Wireless networks that pretend to be legitimate to entice participants to log on and reveal passwords or credit card numbers.

exchange Third-party Net marketplace that is primarily transaction oriented and that connects many buyers and suppliers for spot purchasing.

executive support systems (ESS) Information systems at the organization's strategic level designed to address unstructured decision making through advanced graphics and communications.

expert system Knowledge-intensive computer program that captures the expertise of a human in limited domains of knowledge.

explicit knowledge Knowledge that has been documented.

Extensible Markup Language (XML) General purpose language that describes the structure of a document and XML can perform presentation, communication, and storage of data, allowing data to be manipulated by the computer.

external integration tools Project management technique that links the work of the implementation team to that of users at all organizational levels.

extranet Private intranet that is accessible to authorized outsiders.

Fair Information Practices (FIP) A set of principles originally set forth in 1973 that governs the collection and use of information about individuals and forms the basis of most U.S. and European privacy laws.

fault-tolerant computer systems Systems that contain extra hardware, software, and power supply components that can back a system up and keep it running to prevent system failure.

feasibility study As part of the systems analysis process, the way to determine whether the solution is achievable, given the organization's resources and constraints.

feedback Output that is returned to the appropriate members of the organization to help them evaluate or correct input.

field A grouping of characters into a word, a group of words, or a complete number, such as a person's name or age.

file transfer protocol (FTP) Tool for retrieving and transferring files from a remote computer.

file A group of records of the same type.

firewall Hardware and software placed between an organization's internal network and an external network to prevent outsiders from invading private networks.

folksonomies User-created taxonomies for classifying and sharing information.

foreign key Field in a database table that enables users find related information in another database table.

formal control tools Project management technique that helps monitor the progress toward completion of a task and fulfillment of goals.

formal planning tools Project management technique that structures and sequences tasks, budgeting time, money, and technical resources required to complete the tasks.

forward chaining A strategy for searching the rule base in an expert system that begins with the information entered by the user and searches the rule base to arrive at a conclusion.

franchiser Form of business organization in which a product is created, designed, financed, and initially produced in the home country, but for product-specific reasons relies heavily on foreign personnel for further production, marketing, and human resources.

free/fremium revenue model an e-commerce revenue model in which a firm offers basic services or content for free, while charging a premium for advanced or high value features.

fuzzy logic Rule-based AI that tolerates imprecision by using nonspecific terms called membership functions to solve problems.

Gantt chart Visually representats the timing, duration, and resource requirements of project tasks.

general controls Overall control environment governing the design, security, and use of computer programs and the security of data files in general throughout the organization's information technology infrastructure.

genetic algorithms Problem-solving methods that promote the evolution of solutions to specified problems using the model of living organisms adapting to their environment.

geoadvertising Delivering ads to users based on their GPS location.

geographic information system (GIS) System with software that can analyze and display data using digitized maps to enhance planning and decision-making.

geoinformation services Information on local places and things based on the GPS position of the user.

geosocial services Social networking based on the GPS location of users.

global culture The development of common expectations, shared artifacts, and social norms among different cultures and peoples.

Golden Rule Putting oneself in the place of others as the object of a decision.

Gramm-Leach-Bliley Act Requires financial institutions to ensure the security and confidentiality of customer data.

green computing Refers to practices and technologies for designing, manufacturing, using, and disposing of computers, servers, and associated devices such as monitors, printers, storage devices, and networking and communications systems to minimize impact on the environment.

grid computing Applying the resources of many computers in a network to a single problem.

group decision-support system (GDSS) An interactive computer-based system to facilitate the solution to unstructured problems by a set of decision makers working together as a group.

hacker A person who gains unauthorized access to a computer network for profit, criminal mischief, or personal pleasure.

Hadoop Open-source software framework that enables distributed parallel processing of huge amounts of data across many inexpensive computers.

hertz Measure of frequency of electrical impulses per second, with 1 Hertz equivalent to 1 cycle per second.

high-availability computing Tools and technologies ,including backup hardware resources, to enable a system to recover quickly from a crash.

HIPAA Law outlining rules for medical security, privacy, and the management of health care records.

hotspot A specific geographic location in which an access point provides public Wi-Fi network service.

HTML (Hypertext Markup Language) Page description language for creating Web pages.

HTML5 Next evolution of HTML, which will make it possible to embed images, video, and audio directly into a document without add-on software.

hubs Very simple devices that connect network components, sending a packet of data to all other connected devices.

hybrid AI systems Integration of multiple AI technologies into a single application to take advantage of the best features of these technologies.

hybrid cloud Computing model where firms use both their own IT infrastructure and also public cloud computing services.

hypertext transfer protocol (HTTP) The communications standard used to transfer pages on the Web. Defines how messages are formatted and transmitted.

identity management Business processes and software tools for identifying the valid users of a system and controlling their access to system resources.

identity theft Theft of key pieces of personal information, such as credit card or Social Security numbers, in order to obtain merchandise and services in the name of the victim or to obtain false credentials.

Immanuel Kant's Categorical Imperative A principle that states that if an action is not right for everyone to take it is not right for anyone.

implementation All the organizational activities surrounding the adoption, management, and routinization of an innovation, such as a new information system.

in-memory computing Technology for very rapid analysis and processing of large quantities of data by storing the data in the computer's main memory rather than in secondary storage.

inference engine The strategy used to search through the rule base in an expert system; can be forward or backward chaining.

information Data that have been shaped into a form that is meaningful and useful to human beings.

information asymmetry Situation where the relative bargaining power of two parties in a transaction is determined by one party in the transaction possessing more information essential to the transaction than the other party.

information density The total amount and quality of information available to all market participants, consumers, and merchants.

information policy Formal rules governing the maintenance, distribution, and use of information in an organization.

information requirements A detailed statement of the information needs that a new system must satisfy; identifies who needs what information, and when, where, and how the information is needed.

information rights The rights that individuals and organizations have with respect to information that pertains to themselves.

information system Interrelated components working together to collect, process, store, and disseminate information to support decision making, coordination, control, analysis, and visualization in an organization.

information systems audit Identifies all the controls tht govern individual information systems and assesses their effectiveness.

information systems department The formal organizational unit that is responsible for the information systems function in the organization.

information systems literacy Broad-based understanding of information systems that includes behavioral knowledge about organizations and individuals using information systems as well as technical knowledge about computers.

information systems managers Leaders of the various specialists in the information systems department.

information systems plan A road map indicating the direction of systems development: the rationale, the current situation, the management strategy, the implementation plan, and the budget.

information technology (IT) All the hardware and software technologies a firm needs to achieve its business objectives.

information technology (IT) infrastructure Computer hardware, software, data, storage technology, and networks providing a portfolio of shared IT resources for the organization.

informational roles Mintzberg's classification for managerial roles where managers act as the nerve centers of their organizations, receiving and disseminating critical information.

informed consent Consent given with knowledge of all the facts needed to make a rational decision.

input The capture or collection of raw data from within the organization or from its external environment for processing in an information system.

instant messaging Chat service that allows participants to create their own private chat channels so that a person can be alerted whenever someone on his or her private list is on-line to initiate a chat session with that particular individual.

intangible benefits Benefits that are not easily quantified; they include more efficient customer service or enhanced decision making.

intellectual property Intangible property created by individuals or corporations that is subject to protections under trade secret, copyright, and patent law.

intelligence The first of Simon's four stages of decision making, when the individual collects information to identify problems occurring in the organization.

intelligent agent Software program that uses a built-in or learned knowledge base to carry out specific, repetitive, and predictable tasks for an individual user, business process, or software application.

intelligent techniques Technologies that aid human decision makers by capturing individual and collective knowledge, discovering patterns and behaviors in large quantities of data, and generating solutions to problems that are too large and complex for human beings to solve on their own.

internal integration tools Project management technique that ensures that the implementation team operates as a cohesive unit.

international information systems architecture The basic information systems required by organizations to coordinate worldwide trade and other activities.

Internet Global network of networks using universal standards to connect millions of different networks.

Internet of Things Pervasive Web in which each object or machine has a unique identity and is able to use the Internet to link with other machines or send data. Also known as the Industrial Internet.

Internet Protocol (IP) address Four-part numeric address indicating a unique computer location on the Internet.

Internet Service Provider (ISP) A commercial organization with a permanent connection to the Internet that sells temporary connections to subscribers.

Internet2 Research network with new protocols and transmission speeds that provides an infrastructure for supporting high-bandwidth Internet applications.

interorganizational systems Information systems that automate the flow of information across organizational boundaries and link a company to its customers, distributors, or suppliers.

interpersonal roles Mintzberg's classification for managerial roles where managers act as figureheads and leaders for the organization.

intranet An internal network based on Internet and World Wide Web technology and standards.

intrusion detection system Tools to monitor the most vulnerable points in a network to detect and deter unauthorized intruders.

investment workstation Powerful desktop computer for financial specialists, which is optimized to access and manipulate massive amounts of financial data.

iOS Operating system for the Apple iPad, iPhone, and iPod Touch.

IPv6 New IP addressing system using 128-bit IP addresses. Stands for Internet Protocol version 6.

IT governance Strategy and policies for using information technology within an organization, specifying the decision rights and accountabilities to ensure that information technology supports the organization's strategies and objectives.

iterative A process of repeating over and over again the steps to build a system.

Java Programming language that can deliver only the software functionality needed for a particular task, such as a small applet downloaded from a network; can run on any computer and operating system.

Joint Application Design (JAD) Process to accelerate the generation of information requirements by having end users and information systems specialists work together in intensive interactive design sessions.

just-in-time Scheduling system for minimizing inventory by having components arrive exactly at the moment they are needed and finished goods shipped as soon as they leave the assembly line.

key field A field in a record that uniquely identifies instances of that record so that it can be retrieved, updated, or sorted.

key performance indicators Measures proposed by senior management for understanding how well the firm is performing along specified dimensions.

keylogger Spyware that records every keystroke made on a computer to steal personal information or passwords or to launch Internet attacks.

knowledge Concepts, experience, and insight that provide a framework for creating, evaluating, and using information.

knowledge base Model of human knowledge that is used by expert systems.

knowledge discovery Identification of novel and valuable patterns in large databases.

knowledge management The set of processes developed in an organization to create, gather, store, maintain, and disseminate the firm's knowledge.

knowledge management systems Systems that support the creation, capture, storage, and dissemination of firm expertise and knowledge.

knowledge network system Online directory for locating corporate experts in well-defined knowledge domains.

knowledge workers People such as engineers or architects who design products or services and create knowledge for the organization.

knowledge work systems Information systems that aid knowledge workers in the creation and integration of new knowledge into the organization.

learning management system (LMS) Tools for the management, delivery, tracking, and assessment of various types of employee learning.

legacy system A system that has been in existence for a long time and that continues to be used to avoid the high cost of replacing or redesigning it.

legitimacy The extent to which one's authority is accepted on grounds of competence, vision, or other qualities. Making judgments and taking actions on the basis of narrow or personal characteristics.

liability The existence of laws that permit individuals to recover the damages done to them by other actors, systems, or organizations.

Linux Reliable and compactly designed operating system that is an offshoot of UNIX and that can run on many different hardware platforms and is available free or at very low cost. Used as alternative to UNIX and Windows NT.

local area network (LAN) A telecommunications network that requires its own dedicated channels and that encompasses a limited distance, usually one building or several buildings in close proximity.

location-based services GPS map services available on smartphones.

location analytics Ability to gain insights from the location (geographic) component of data, including loation data from mobile phones, output from sensors or scanning devices, and data from maps.

long tail marketing Refers to the ability of firms to profitably market goods to very small online audiences, largely because of the lower costs of reaching very small market segements (people who fall into the long tail ends of a Bell curve).

machine learning Study of how computer programs can improve their performance without explicit programming.

mainframe Largest category of computer, used for major business processing.

maintenance Changes in hardware, software, documentation, or procedures to a production system to correct errors, meet new requirements, or improve processing efficiency.

malware Malicious software programs such as computer viruses, worms, and Trojan horses.

managed security service provider (MSSP) Company that provides security management services for subscribing clients.

management information systems (MIS) Specific category of information system providing reports on organizational performance to help middle management monitor and control the business.

managerial roles Expectations of the activities that managers should perform in an organization.

market creator An e-commerce business model in which firms provide a digital online environment where buyers and sellers can meet, search for products, and engage in transactions.

market entry costs The cost merchants must pay to bring their goods to market.

marketspace A marketplace extended beyond traditional boundaries and removed from a temporal and geographic location.

mashups Composite software applications that depend on high-speed networks, universal communication standards, and open-source code.

mass customization The capacity to offer individually tailored products or services using mass production resources.

massive open online course (MOOC) Online course made available via the Web to very large numbers of participants.

menu costs Merchants' costs of changing prices.

metric A standard measurement of performance.

metropolitan area network (MAN) Network that spans a metropolitan area, usually a city and its major suburbs. Its geographic scope falls between a WAN and a LAN.

microblogging Blogging featuring very short posts, such as using Twitter.

micropayment Payment for a very small sum of money, often less than $10.

middle management People in the middle of the organizational hierarchy who are responsible for carrying out the plans and goals of senior management.

minicomputer Middle-range computer used in systems for universities, factories, or research laboratories.

mobile Web app Internet-enabled app with specific functionality for mobile devices that is accesed through a mobile device's Web browser.

mobile commerce (m-commerce) The use of wireless devices, such as cell phones or handheld digital information appliances, to conduct both business-to-consumer and business-to-business e-commerce transactions over the Internet.

modem A device for translating a computer's digital signals into analog form for transmission over ordinary telephone lines, or for translating analog signals back into digital form for reception by a computer.

Moore's Law Assertion that the number of components on a chip doubles each year

multicore processor Integrated circuit to which two or more processors have been attached for enhanced performance, reduced power consumption and more efficient simultaneous processing of multiple tasks.

multinational Form of business organization that concentrates financial management and control out of a central home base while decentralizing

multitiered (N-tier) client/server architecture Client/server network which the work of the entire network is balanced over several different levels of servers.

multitouch Interface that features the use of one or more finger gestures to manipulate lists or objects on a screen without using a mouse or keyboard.

nanotechnology Technology that builds structures and processes based on the manipulation of individual atoms and molecules.

native app Standalone application designed to run on a specific platform and device and is installed directly on the mobile device

net marketplace A single digital marketplace based on Internet technology linking many buyers to many sellers.

network The linking of two or more computers to share data or resources, such as a printer.

network economics Model of strategic systems at the industry level based on the concept of a network where adding another participant entails zero marginal costs but can create much larger marginal gains.

network operating system (NOS) Special software that routes and manages communications on the network and coordinates network resources.

networking and telecommunications technology Physical devices and software that link various computer hardware components and transfer data from one physical location to another.

neural network Hardware or software that attempts to emulate the processing patterns of the biological brain.

non-relational database management system Database management system for working with large quantities of structured and unstructured data that would be difficult to analyze with a relational model.

nonobvious relationship awareness (NORA) Technology that can find obscure hidden connections between people or other entities by analyzing information from many different sources to correlate relationships.

normalization The process of creating small stable data structures from complex groups of data when designing a relational database.

object Software building block that combines data and the procedures acting on the data.

object-oriented development Approach to systems development that uses the object as the basic unit of systems analysis and design. The system is modeled as a collection o objects and the relationship between them.

offshore outsourcing Outsourcing systems development work or maintenance of existing systems to external vendors in another country.

on-demand computing Firms off-loading peak demand for computing power to remote, large-scale data processing centers, investing just enough to handle average processing loads and paying for only as much additional computing power as the market demands. Also called utility computing.

on-line analytical processing (OLAP) Capability for manipulating and analyzing large volumes of data from multiple perspectives.

online transaction processing Transaction processing mode in which transactions entered on-line are immediately processed by the computer.

open-source software Software that provides free access to its program code, allowing users to modify the program code to make improvements or fix errors.

operating system Software that manages the resources and activities of the computer.

operational CRM Customer-facing applications, such as sales force automation, call center and customer service support, and marketing automation.

operational intelligence business analytics that delivers insight into data, streaming events and business operations.

operational management People who monitor the day-to-day activities of the organization.

opt-in Model of informed consent permitting prohibiting an organization from collecting any personal information unless the individual specifically takes action to approve information collection and use.

opt-out Model of informed consent permitting the collection of personal information until the consumer specifically requests that the data not be collected.

organization (behavioral definition) A collection of rights, privileges, obligations, and responsibilities that are delicately balanced over a period of time through conflict and conflict resolution.

organization (technical definition) A stable, formal, social structure that takes resources from the environment and processes them to produce outputs.

organizational and management capital Investments in organization and management such as new business processes, management behavior, organizational culture, or training.

organizational impact analysis Study of the way a proposed system will affect organizational structure, attitudes, decision making, and operations.

organizational learning Creation of new standard operating procedures and business processes that reflect organizations' experience.

output The distribution of processed information to the people who will use it or to the activities for which it will be used.

outsourcing The practice of contracting computer center operations, telecommunications networks, or applications development to external vendors.

packet switching Technology that breaks messages into small, fixed bundles of data and routes them in the most economical way through any available communications channel..

paradigm shift Radical reconceptualization of the nature of the business and the nature of the organization.

parallel strategy A safe and conservative conversion approach where both the old system and its potential replacement are run together for a time until everyone is assured that the new one functions correctly.

particularism Making judgments and taking action on the basis of narrow or personal characteristics, in all its forms (religious, nationalistic, ethnic, regionalism, geopolitical position).

partner relationship management (PRM) Automation of the firm's relationships with its selling partners using customer data and analytical tools to improve coordination and customer sales.

password Secret word or string of characters for authenticating users so they can access a resource such as a computer system.

patch Small pieces of software to repair the software flaws without disturbing the proper operation of the software.

patent A legal document that grants the owner an exclusive monopoly on the ideas behind an invention for 17 years; designed to ensure that inventors of new machines or methods

are rewarded for their labor while making widespread use of their inventions.

peer-to-peer Network architecture that gives equal power to all computers on the network; used primarily in small networks.

personal area network (PAN) Computer network used for communication among digital devices (including telephones and PDAs) that are close to one person.

personalization Ability of merchants to target marketing messages to specific individuals by adjusting the message for a person's name, interests, and past purchases.

PERT chart Network diagram depicting project tasks and their interrelationships.

pharming Phishing technique that redirects users to a bogus Web page, even when an individual enters the correct Web page address.

phased approach Introduces the new system in stages either by functions or by organizational units.

phishing Form of spoofing involving setting up fake Web sites or sending e-mail messages that resemble those of legitimate businesses that ask users for confidential personal data.

pilot study A strategy to introduce the new system to a limited area of the organization until it is proven to be fully functional; only then can the conversion to the new system across the entire organization take place.

pivot table Spreadsheet tool for reorganizing and summarizing two or more dimensions of data in a tabular format.

podcasting Publishing audio broadcasts via the Internet so that subscribing users can download audio files onto their personal computers or portable music players.

portal Web interface for presenting integrated personalized content from a variety of sources. Also refers to a Web site service that provides an initial point of entry to the Web.

portfolio analysis An analysis of the portfolio of potential applications within a firm to determine the risks and benefits, and to select among alternatives for information systems.

post-implementation audit Formal review process conducted after a system has been placed in production to determine how well the system has met its original objectives.

prediction markets An analysis of the portfolio of potential applications within a firm to determine the risks and benefits, and to select among alternatives for information systems.

predictive analytics The use of data mining techniques, historical data, and assumptions about future conditions to predict outcomes of events, such as the probability a customer will respond to an offer or purchase a specific product.

Predictive search Part of a search alogrithm that predicts what a user query is looking as it is entered based on popular searches. Produces a dropdown list of suggested search queries

price discrimination Selling the same goods, or nearly the same goods, to different targeted groups at different prices.

price transparency The ease with which consumers can find out the variety of prices in a market.

primary activities Activities most directly related to the production and distribution of a firm's products or services.

primary key Unique identifier for all the information in any row of a database table.

privacy The claim of individuals to be left alone, free from surveillance or interference from other individuals, organizations, or the state.

private cloud A proprietary network or a data center that ties together servers, storage, networks, data, and applications as a set of virtualized services that are shared by users inside a company.

private exchange Another term for a private industrial network.

private industrial networks Web-enabled networks linking systems of multiple firms in an industry for the coordination of trans-organizational business processes.

process specifications Describe the logic of the processes occurring within the lowest levels of a data flow diagram.

processing The conversion, manipulation, and analysis of raw input into a form that is more meaningful to humans.

product differentiation Competitive strategy for creating brand loyalty by developing new and unique products and services that are not easily duplicated by competitors.

production The stage after the new system is installed and the conversion is complete; during this time the system is reviewed by users and technical specialists to determine how well it has met its original goals.

production or service workers People who actually produce the products or services of the organization.

profiling The use of computers to combine data from multiple sources and create electronic dossiers of detailed information on individuals.

program-data dependence The close relationship between data stored in files and the software programs that update and maintain those files. Any change in data organization or format requires a change in all the programs associated with those files.

programmers Highly trained technical specialists who write computer software instructions.

programming The process of translating the system specifications prepared during the design stage into program code.

project Planned series of related activities for achieving a specific business objective.

project management Application of knowledge, tools, and techniques to achieve specific targets within a specified budget and time period.

project portfolio management software Helps organizations evaluate and manage portfolios of projects and dependencies among them.

protocol A set of rules and procedures that govern transmission between the components in a network.

prototype The preliminary working version of an information system for demonstration and evaluation purposes.

prototyping The process of building an experimental system quickly and inexpensively for demonstration and evaluation so that users can better determine information requirements.

public cloud A cloud maintained by an external service provider, accessed through the Internet, and available to the general public.

public key encryption Uses two keys: one shared (or public) and one private.

public key infrastructure(PKI) System for creating public and private keys using a certificate authority (CA) and digital certificates for authentication.

pull-based model Supply chain driven by actual customer orders or purchases so that members of the supply chain produce and deliver only what customers have ordered.

push-based model Supply chain driven by production master schedules based on forecasts or best guesses of demand for products, and products are "pushed" to customers.

quantum computing Use of principles of quantum physics to represent data and perform operations on the data, with the ability to be in many different states at once and to perform many different computations simultaneously.

query language Software tool that provides immediate online answers to requests for information that are not predefined.

radio-frequency identification (RFID) Technology using tiny tags with embedded microchips containing data about an item and its location to transmit short-distance radio signals to special RFID readers that then pass the data on to a computer for processing.

ransomware Malware that extorts money from users by taking control of their computers or displaying annoying pop-up messages.

Rapid Application Development (RAD) Process for developing systems in a very short time period by using prototyping, fourth-generation tools, and close teamwork among users and systems specialists.

rationalization of procedures The streamlining of standard operating procedures, eliminating obvious bottlenecks, so that automation makes operating procedures more efficient.

real options pricing models Models for evaluating information technology investments with uncertain returns by using techniques for valuing financial options.

record A group of related fields.

referential integrity Rules to ensure that relationships between coupled database tables remain consistent.

relational DBMS A type of logical database model that treats data as if they were stored in two-dimensional tables. It can relate data stored in one table to data in another as long as the two tables share a common data element.

Repetitive Stress Injury (RSI) Occupational disease that occurs when muscle groups are forced through repetitive actions with high-impact loads or thousands of repetitions with low-impact loads.

Request for Proposal (RFP) A detailed list of questions submitted to vendors of software or other services to determine how well the vendor's product can meet the organization's specific requirements.

responsibility Accepting the potential costs, duties, and obligations for the decisions one makes.

responsive Web design Ability of a Web site to automatically change screen resolution and image size as a user switches to devices of different sizes, such as a laptop, tablet computer, or smartphone. Eliminates the need for separate design and development work for each new device.

revenue model A description of how a firm will earn revenue, generate profits, and produce a return on investment.

richness Measurement of the depth and detail of information that a business can supply to the customer as well as information the business collects about the customer.

risk assessment Determining the potential frequency of the occurrence of a problem and the potential damage if the problem were to occur. Used to determine the cost/benefit of a control.

Risk Aversion Principle Principle that one should take the action that produces the least harm or incurs the least cost.

router Specialized communications processor that forwards packets of data from one network to another network.

routines Precise rules, procedures and practices that have been developed to cope with expected situations.

RSS Technology using aggregator software to pull content from Web sites and feed it automatically to subscribers' computers.

SaaS (Software as a Service) Services for delivering and providing access to software remotely as a Web-based service.

safe harbor Private self-regulating policy and enforcement mechanism that meets the objectives of government regulations but does not involve government regulation or enforcement.

sales revenue model Selling goods, information, or services to customers as the main source of revenue for a company.

Sarbanes-Oxley Act Law passed in 2002 that imposes responsibility on companies and their management to protect investors by safeguarding the accuracy and integrity of financial information that is used internally and released externally.

scalability The ability of a computer, product, or system to expand to serve a larger number of users without breaking down.

scope Defines what work is and is not included in a project.

scoring model A quick method for deciding among alternative systems based on a system of ratings for selected objectives.

search costs The time and money spent locating a suitable product and determining the best price for that product.

search engine A tool for locating specific sites or information on the Internet.

search engine marketing Use of search engines to deliver in their results sponsored links, for which advertisers have paid.

search engine optimization (SEO) the process of changing a Web site's content, layout, and format in order to increase the ranking of the site on popular search engines, and to generate more site visitors.

Secure Hypertext Transfer Protocol (S-HTTP) Protocol used for encrypting data flowing over the Internet; limited to individual messages.

Secure Sockets Layer (SSL) Enables client and server computers to manage encryption and decryption activities as they communicate with each other during a secure Web session.

security Policies, procedures, and technical measures used to prevent unauthorized access, alteration, theft, or physical damage to information systems.

security policy Statements ranking information risks, identifying acceptable security goals, and identifying the mechanisms for achieving these goals.

Semantic Web Ways of making the Web more "intelligent," with machine-facilitated understanding of information so that searches can be more intuitive, effective, and executed using intelligent software agents.

semistructured decisions Decisions in which only part of the problem has a clear-cut answer provided by an accepted procedure.

senior management People occupying the topmost hierarchy in an organization who are responsible for making long-range decisions.

sensitivity analysis Models that ask "what-if" questions repeatedly to determine the impact of changes in one or more factors on the outcomes.

sentiment analysis Mining text comments in an e-mail message, blog, social media conversation, or survey form to detect favorable and unfavorable opinions about specific subjects.

server Computer specifically optimized to provide software and other resources to other computers over a network.

service level agreement (SLA) Formal contract between customers and their service providers that defines the specific responsibilities of the service provider and the level of service expected by the customer.

service-oriented architecture Software architecture of a firm built on a collection of software programs that communicate with each other to perform assigned tasks to create a working software application

shopping bot Software with varying levels of built-in intelligence to help electronic commerce shoppers locate and evaluate products or service they might wish to purchase.

six sigma A specific measure of quality, representing 3.4 defects per million opportunities; used to designate a set of methodologies and techniques for improving quality and reducing costs.

smart card A credit-card-size plastic card that stores digital information and that can be used for electronic payments in place of cash.

smartphone Wireless phone with voice, text, and Internet capabilities.

sniffer Type of eavesdropping program that monitors information traveling over a network.

social business Use of social networking platforms, including Facebook, Twitter, and internal corporate social tools, to engage employees, customers, and suppliers.

social CRM Tools enabling a business to link customer conversatins, data, and relationships from social networking sites to CRM processes.

social engineering Tricking people into revealing their passwords by pretending to rbe legitimate users or members of a company in need of information.

social graph Map of all significant online social relationships, comparable to a social network describing offline relationships.

social networking sites Online community for expanding users' business or social contacts by making connections through their mutual business or personal connections.

social search Effort to provide more relevant and trustworthy search results based on a person's network of social contacts.

social shopping Use of Web sites featuring user-created Web pages to share knowledge about items of interest to other shoppers.

sociotechnical design Design to produce information systems that blend technical efficiency with sensitivity to organizational and human needs.

sociotechnical view Seeing systems as composed of both technical and social elements.

software-defined networking (SDN) Using a central control program separate from network devices to manage the flow of data on a network.

software localization Process of converting software to operate in a second language.

software package A prewritten, precoded, commercially available set of programs that eliminates the need to write software programs for certain functions.

spam Unsolicited commercial e-mail.

spoofing Tricking or deceiving computer systems or other computer users by hiding one's identity or faking the identity of another user on the Internet.

spyware Technology that aids in gathering information about a person or organization without their knowledge.

SQL injection attack Attacks against a Web site that take advantage of vulnerabilities in poorly coded SQL (a standard and common database software application) applications in order to introduce malicious program code into a company's systems and networks.

storage area network (SAN) A high-speed network dedicated to storage that connects different kinds of storage devices, such as tape libraries and disk arrays so they can be shared by multiple servers.

strategic information system Information system that changes the goals, operations, products, services, or environmental relationships of an organization to help gain a competitive advantage.

strategic transitions A movement from one level of sociotechnical system to another. Often required when adopting strategic systems that demand changes in the social and technical elements of an organization.

streaming A publishing method for music and video files that flows a continuous stream of content to a user's device without being stored locally on the device.

structure chart System documentation showing each level of design, the relationship among the levels, and the overall place in the design structure; can document one program, one system, or part of one program.

structured Refers to the fact that techniques are carefully drawn up, step by step, with each step building on a previous one.

structured decisions Decisions that are repetitive, routine, and have a definite procedure for handling them.

structured knowledge Knowledge in the form of structured documents and reports.

Structured Query Language (SQL) The standard data manipulation language for relational database management systems.

subscription revenue model Web site charging a subscription fee for access to some or all of its content or services on an ongoing basis.

supply chain Network of organizations and business processes for procuring materials, transforming raw materials into intermediate and finished products, and distributing the finished products to customers.

supply chain execution systems Systems to manage the flow of products through distribution centers and warehouses to ensure that products are delivered to the right locations in the most efficient manner.

supply chain management systems Information systems that automate the flow of information between a firm and its suppliers in order to optimize the planning, sourcing, manufacturing, and delivery of products and services.

supply chain planning systems Systems that enable a firm to generate demand forecasts for a product and to develop sourcing and manufacturing plans for that product.

support activities Activities that make the delivery of a firm's primary activities possible. Consist of the organization's infrastructure, human resources, technology, and procurement.

switch Device to connect network components that has more intelligence than a hub and can filter and forward data to a specified destination.

switching costs The expense a customer or company incurs in lost time and expenditure of resources when changing from one supplier or system to a competing supplier or system.

system testing Tests the functioning of the information system as a whole in order to determine if discrete modules will function together as planned.

systems analysis The analysis of a problem that the organization will try to solve with an information system.

systems analysts Specialists who translate business problems and requirements into information requirements and systems, acting as liaison between the information systems department and the rest of the organization.

systems design Details how a system will meet the information requirements as determined by the systems analysis.

systems development The activities that go into producing an information systems solution to an organizational problem or opportunity.

systems life cycle A traditional methodology for developing an information system that partitions the systems development process into formal stages that must be completed sequentially with a very formal division of labor between end users and information systems specialists.

T lines High-speed guaranteed service level data lines leased from communications providers, such as T-1 lines (with a transmission capacity of 1.544 Mbps).

tablet computer Mobile handheld computer that is larger than a mobile phone and operated primarily by touching a flat screen.

tacit knowledge Expertise and experience of organizational members that has not been formally documented.

tangible benefits Benefits that can be quantified and assigned a monetary value; they include lower operational costs and increased cash flows.

taxonomy Method of classifying things according to a predetermined system.

teams Teams are formal groups whose members collaborate to achieve specific goals.

teamware Group collaboration software that is customized for teamwork.

technology standards Specifications that establish the compatibility of products and the ability to communicate in a network.

technostress Stress induced by computer use; symptoms include aggravation, hostility toward humans, impatience, and enervation.

telepresence Telepresence is a technology that allows a person to give the appearance of being present at a location other than his or her true physical location.

Telnet Network tool that allows someone to log on to one computer system while doing work on another.

test plan Prepared by the development team in conjunction with the users; it includes all of the preparations for the series of tests to be performed on the system.

testing The exhaustive and thorough process that determines whether the system produces the desired results under known conditions.

text mining Discovery of patterns and relationships from large sets of unstructured data.

token Physical device similar to an identification card that is designed to prove the identity of a single user.

Total Cost of Ownership (TCO) Designates the total cost of owning technology resources, including initial purchase costs, the cost of hardware and software upgrades, maintenance, technical support, and training.

Total Quality Management (TQM) A concept that makes quality control a responsibility to be shared by all people in an organization.

touch point Method of firm interaction with a customer, such as telephone, e-mail, customer service desk, conventional mail, or point-of-purchase.

trade secret Any intellectual work or product used for a business purpose that can be classified as belonging to that business, provided it is not based on information in the public domain.

transaction costs Costs incurred when a firm buys on the marketplace what it cannot make itself.

transaction cost theory Economic theory stating that firms grow larger because they can conduct marketplace transactions internally more cheaply than they can with external firms in the marketplace.

transaction fee revenue model An online e-commerce revenue model where the firm receives a fee for enabling or executing transactions.

transaction processing systems (TPS) Computerized systems that perform and record the daily routine transactions necessary to conduct the business; they serve the organization's operational level.

transborder data flow The movement of information across international boundaries in any form.

Transmission Control Protocol/Internet Protocol (TCP/IP) Dominant model for achieving connectivity among different networks. Provides a universally agree-on method for breaking up digital messages into packets, routing them to the proper addresses, and then reassembling them into coherent messages.

transnational Truly global form of business organization with no national headquarters; value-added activities are managed from a global perspective without reference to national borders, optimizing sources of supply and demand and local competitive advantage.

Trojan horse A software program that appears legitimate but contains a second hidden function that may cause damage.

tuple A row or record in a relational database.

two-factor authentication Validating user identity with two means of identification, one of which is typically a physical token, and the other of which is typically data.

Unified communications Integrates disparate channels for voice communications, data communications, instant messaging, e-mail, and electronic conferencing into a single experience where users can seamlessly switch back and forth between different communication modes.

unified threat management (UTM) Comprehensive security management tool that combines multiple security tools, including firewalls, virtual private networks, intrusion detection systems, and Web content filtering and anti-spam software.

uniform resource locator (URL) The address of a specific resource on the Internet.

unit testing The process of testing each program separately in the system. Sometimes called program testing.

UNIX Operating system for all types of computers, which is machine independent and supports multiuser processing, multitasking, and networking. Used in high-end workstations and servers.

unstructured decisions Nonroutine decisions in which the decision maker must provide judgment, evaluation, and insights into the problem definition; there is no agreed-upon procedure for making such decisions.

user interface The part of the information system through which the end user interacts with the system; type of hardware and the series of on-screen commands and responses required for a user to work with the system.

user-designer communications gap The difference in backgrounds, interests, and priorities that impede communication and problem solving among end users and information systems specialists.

Utilitarian Principle Principle that assumes one can put values in rank order of utility and understand the consequences of various courses of action.

value chain model Model that highlights the primary or support activities that add a margin of value to a firm's products or services where information systems can best be applied to achieve a competitive advantage.

value web Customer-driven network of independent firms who use information technology to coordinate their value chains to collectively produce a product or service for a market.

virtual company Organization using networks to link people, assets and ideas to create and distribute products and services without being limited to traditional organizational boundaries or physical location.

Virtual Private Network (VPN) A secure connection between two points across the Internet to transmit corporate data. Provides a low-cost alternative to a private network.

Virtual Reality Modeling Language (VRML) A set of specifications for interactive three-dimensional modeling on the World Wide Web.

virtual reality systems Interactive graphics software and hardware that create computer-generated simulations that provide sensations that emulate real-world activities.

virtualization Presenting a set of computing resources so that they can all be accessed in ways that are not restricted by physical configuration or geographic location.

visual web Refers to Web linking visual sites such as Pinterest where pictures replace text socuents and where users search on pictures and visual characteristics.

Voice over IP (VoIP) Facilities for managing the delivery of voice information using the Internet Protocol (IP).

war driving Technique in which eavesdroppers drive by buildings or park outside and try to intercept wireless network traffic.

wearable computer Small wearable computing device such as a smartwatch, smartglasses, or activity tracker.

Web 2.0 Second-generation, interactive Internet-based services that enable people to collaborate, share information, and create new services online, including mashups, blogs, RSS, and wikis.

Web 3.0 Future vision of the Web where all digital information is woven together with intelligent search capabilities.

Web beacons Tiny objects invisibly embedded in e-mail messages and Web pages that are designed to monitor the behavior of the user visiting a Web site or sending e-mail.

Web browser An easy-to-use software tool for accessing the World Wide Web and the Internet.

Web hosting service Company with large Web server computers to maintain the Web sites of fee-paying subscribers.

Web mining Discovery and analysis of useful patterns and information from the World Wide Web.

Web server Software that manages requests for Web pages on the computer where they are stored and that delivers the page to the user's computer.

Web services Set of universal standards using Internet technology for integrating different applications from different sources without time-consuming custom coding. Used for linking systems of different organizations or for linking disparate systems within the same organization.

Web site All of the World Wide Web pages maintained by an organization or an individual.

Wi-Fi Standards for Wireless Fidelity and refers to the 802.11 family of wireless networking standards.

Wide Area Network (WAN) Telecommunications network that spans a large geographical distance. May consist of a variety of cable, satellite, and microwave technologies.

wiki Collaborative Web site where visitors can add, delete, or modify content, including the work of previous authors.

WiMax Popular term for IEEE Standard 802.16 for wireless networking over a range of up to 31 miles with a data transfer rate of up to 75 Mbps. Stands for Worldwide Interoperability for Microwave Access.

Windows Microsoft family of operating systems for both network servers and client computers. The most recent version is Windows Vista.

Windows 8 Most recent Microsoft Windows operating system, which runs on tablets as well as PCs, and includes multitouch capabilities.

Wintel PC Any computer that uses Intel microprocessors (or compatible processors) and a Windows operating system.

wireless sensor networks (WSNs) Networks of interconnected wireless devices with built-in processing, storage, and radio frequency sensors and antennas that are embedded into the physical environment to provide measurements of many points over large spaces.

wisdom The collective and individual experience of applying knowledge to the solution of problems.

wisdom of crowds The belief that large numbers of people can make better decisions about a wide range of topics or products than a single person or even a small committee of experts (first proposed in a book by James Surowiecki).

World Wide Web A system with universally accepted standards for storing, retrieving, formatting, and displaying information in a networked environment.

worms Independent software programs that propagate themselves to disrupt the operation of computer networks or destroy data and other programs.

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