

## GLOSSARY

### A

**ABC analysis:** A technique for ranking items in groups based on the output of the items.

**acceptance report:** A report that formally acknowledges the satisfactory completion of an agreed upon service.

**accounting information system (AIS):** A specialized subsystem of the IS that collects, processes, and reports information related to the financial aspects of business events.

**accounts payable/cash disbursements (AP/CD) process:** An interacting structure of people, equipment, methods, and controls that is designed to handle the repetitive work routines of the accounts payable department and the cashier, to support the decision needs of those who manage the accounts payable department and cashier, and to assist in the preparation of internal and external reports.

**accounts payable master data:** A repository of all unpaid vendor invoices.

**accounts receivable adjustments data:** Created as sales returns, bad debt write-offs, estimated doubtful accounts, or similar adjustments are processed.

**accounts receivable master data:** A repository of all unpaid customer invoices.

**accuracy:** The correspondence or agreement between the information and the actual events or objects that the information represents.

**activity:** Any action being performed by an internal or external entity.

**activity-based costing:** A costing approach where detailed costs to perform activities throughout the value chain are computed and can be managed or assigned to cost objects including products.

**agents:** People or organizations that participate in events.

**agree run-to-run totals:** Reconciling totals prepared before a computer process has begun to totals prepared at the completion of the computer process.

**anomalies:** Errors that otherwise might occur when adding, changing, or deleting data stored in the database.

**application controls:** Automated business process controls contained within IT application systems (i.e., computer programs).

**application programming interface (API):** A means for connecting to a system or application provided by the developer of that system or application.

**application service provider (ASP):** Offers an outsourcing mechanism whereby it hosts, manages, and provides access to application software and hardware over the Internet to multiple customers.

**applications approach to business event processing:** Under this approach, each application collects and manages its own data, generally in dedicated, separate, physically distinguishable files for each application.

**approved configuration plan:** The final output of systems selection, which summarizes the choices made in the study.

**approved systems analysis document:** The final output of systems analysis.

**attendance time records:** These records show the time periods that employees are in attendance at the job site and available for work. These records are used to calculate the gross amount of each employee's pay.

**attribute:** An item of data that characterizes an entity or relationship.

**audit trail:** A means of tracing back to the individual business events that have been aggregated into the general ledger balances.

**automated clearing house (ACH):** One of the earliest and most prominent methods for EFT in which the collector's bank account is credited and the payer's account is debited for the amount of a payment.

**automated data entry:** A strategy for the capture and entry of event-related data using technology such as OCR, bar codes, RFID, and EDI.

**automated guided vehicle systems (AGVS):** Computer-based carts capable of delivering parts and tools among multiple work centers.

**automated storage and retrieval systems (AS/RS):** Computer-controlled machines that store and retrieve parts and tools.

**available to promise planning:** An accumulation of the data on current inventories, sales commitments, and planned production to determine

whether the production of finished goods will be sufficient to commit to additional sales orders.

## B

**B2B marketplaces:** Particular Web sites or portals that may be used as sources of supply in the procurement process.

**balance-forward system:** Accounts receivable records consist of a customer's balance, categorized as current and past-due, and current account activity includes items such as current charges, finance charges for past-due balances, and payments.

**balanced scorecard:** A methodology for assessing an organization's business performance via four components: (1) financial, (2) internal business processes, (3) customers, and (4) innovation and improvement activities.

**bar code readers:** Devices that use light reflection to read differences in bar code patterns to identify a labeled item.

**batch control plans:** Control plans used to regulate information processing by calculating control totals at various points in a processing run and subsequently comparing these totals.

**batch processing:** The aggregation of several business events over some period of time with the subsequent processing of these data as a group by the information system.

**batch sequence check:** A process to check event data within a batch including the following steps: (1) the range of serial numbers constituting the documents in the batch is entered; (2) each individual, serially prenumbered document is entered; (3) the computer program sorts the input documents into numerical order, checks the documents against the sequence number range, and reports missing, duplicate, and out-of-range data.

**benchmark:** A representative workload, processed on each vendor's proposed system configuration, to obtain comparative throughput measures.

**bill of lading:** A contract between the shipper and the carrier in which the carrier agrees to transport the goods to the shipper's customer.

**bill of materials:** A listing of all the *subassemblies*, parts, and raw materials that go into a parent assembly showing the quantity of each required to make an assembly.

**billing/accounts receivable/cash receipts (B/AR/CR) process:** An interacting structure of people, equipment, methods, and controls designed to create information flows and records that support repetitive work routines of the credit department,

and accounts receivable department and assist in the preparation of internal and external reports.

**blind copy:** A copy of a document on which certain data is blanked out (i.e., blinded) so that persons receiving that copy will not have access to those data.

**block coding:** Groups of numbers are dedicated to particular characteristics of the objects being identified.

**bullwhip effect:** Wild demand and supply fluctuations caused by the multiplication of orders up the supply chain.

**business event:** A meaningful change in the state of the enterprise such as creating a new employee record, submitting a purchase order to a vendor, receiving a payment from a customer, picking goods from the warehouse and delivering them to the shipping department, and revaluing inventory.

**business event data store:** A book of original entry used for recording business events; also known as a transaction file.

**business intelligence:** The integration of statistical and analytical tools with decision support technologies to facilitate complex analyses of data warehouses by managers and decision makers.

**business process control plans:** Plans that relate those particular controls specific to a business process, such as billing or cash receipts.

**business process management (BPM):** Modeling, automating, managing, and optimizing business processes; often used interchangeably with business process management systems.

**business process management systems:** Systems for modeling, automating, managing, and optimizing business processes; often used interchangeably with business process management (BPM).

**business reporting process:** This process is concerned with preparing general purpose, external financial statements; ensuring that the external financial statements conform to GAAP; generating Web-based forms of key financial statement and related business reporting information for dissemination via the Internet; and supporting the generation of both ad hoc and predetermined business reports that support operational and strategic decision making.

## C

**candidate keys:** Any attribute in a relation that could serve as a primary key attribute.

**capable to promise planning:** The accumulation of the data on current inventories, sales commitments, planned production and excess production capacity, or other planned production capacity that could be quickly converted to production of the desired finished goods necessary to fulfill a sales order request.

**capacity requirements planning (CRP):** This process uses the information from the master production schedule and time-phased order requirements schedule to develop detailed machine- and labor-utilization schedules that consider the feasibility of production schedules based on available capacity in the work center status records.

**cardinality:** A characteristic in each relationship that shows the degree to which each entity participates in the relationship.

**cash disbursements events data:** This data contains, in chronological sequence, the details of each cash payment made.

**cash receipts event data:** The data created when customer payments are recorded, which contains the details of each payment as reflected on the RA accompanying a payment.

**cellular manufacturing:** Machines are organized in clusters or “cells” that contain all of the needed resources (machines, tools, labor) to produce a family of products.

**charge card:** A method of payment whereby a third party (such as a bank), for a fee, removes from the collector the risk of noncollection of the account receivable; also known as a *credit card*.

**check digit verification:** A type of programmed edit in which an extra digit—a check digit—is included in the identification number of entities such as customers and vendors. Through mathematical formulae, the computer uses the check digit to verify that the identification number is input correctly.

**child record:** In a hierarchical DBMS, records included in a record one level above them.

**classifying:** The process of grouping or categorizing data according to common attributes

**client/server technology:** The physical and logical division between user-oriented application programs that are run at the client level (i.e., user level) and the shared data that must be available through the server (i.e., a separate computer that handles centrally shared activities—such as databases and printing queues—between multiple users).

**coding:** The creation of substitute values, or codes.

**comparability:** The information quality that enables users to identify similarities and differences in two pieces of information.

**compare input data with master data:** A process to determine the accuracy and validity of the input data. Such comparisons may be done manually or by the computer.

**completeness:** The degree to which information necessary to make a decision includes data about every relevant object or event.

**composite attributes:** Attributes that consist of multiple subattributes.

**composite primary key:** The primary key formed by combining two or more columns in a table.

**computer agreement of batch totals:** A control plan that works in the following manner: (1) batch totals are established manually; (2) the manually prepared total is entered into the computer and is written to the computer batch control totals data; (3) as individual source documents are entered, a computer program accumulates independent batch totals and compares these totals to the manually prepared totals; (4) the computer prepares a report, which usually contains batch details and whether the totals agreed or disagreed.

**computer-aided design (CAD)/computer-aided engineering (CAE):** An application of computer technology that automates the product design process, including but not limited to the functions of geometric modeling, materials stress and strain analysis, drafting, storing product specifications, and mechanical simulation of a product’s performance.

**computer-aided manufacturing (CAM):** The application of computer and communications technology to improve productivity by linking computer numerical control (CNC) machines, monitoring production, and providing automatic feedback to control operations.

**computer-aided process planning (CAPP):** An automated decision support system that generates manufacturing operations instructions and routings based on information about machining requirements and machine capabilities.

**computer crime:** Crime in which the computer is the target of the crime or the means used to commit the crime.

**computer virus:** Program code that can attach itself to other programs (including macros within word processing documents), thereby “infecting” those programs and macros.

**confirm input acceptance:** This control causes the data entry program to inform the user that input has been accepted for processing.

**consistent:** Information that is the same, when compared from the same object or event collected at two points in time.

**context diagram:** A top-level, or least detailed, data flow diagram of an information system that depicts the system and all of its activities as a single bubble and shows the data flows into and out of the system and into and out of the external entities.

**control environment:** A state of control consciousness that reflects the organization's (primarily the board of directors' and management's) general awareness of and commitment to the importance of control throughout the organization.

**control goals:** Business process objectives that an internal control system is designed to achieve.

**control matrix:** A tool designed to assist in evaluating the potential effectiveness of controls in a business process by matching control goals with relevant control plans.

**control plans:** Information-processing policies and procedures that assist in accomplishing control goals.

**corrective control plans:** A control plan that is designed to rectify problems that have occurred.

**cost/benefit analysis:** The feasibility evaluation of estimates of the costs and benefits of a new system (or system modification).

**cost/effectiveness study:** Provides quantitative and certain qualitative information concerning each alternative solution to an information processing problem. This information is used to decide which alternative best meets a user's needs.

**credit card:** A method of payment whereby a third party (such as a bank), for a fee, removes from the collector the risk of noncollection of the account receivable; also known as a *charge card*.

**cumulative sequence check:** Provides input control when the serial numbers are assigned within the organization (e.g., sales order numbers issued by the sales order department) but later are not entered in perfect serial number sequence (i.e., picking tickets do not necessarily arrive at the shipping department in sequence).

**customer acknowledgment:** Sent to the customer to provide notification of an order's acceptance and expected shipment date.

**customer credit check:** A control process performed to ensure that an organization does not extend more credit to a customer than is prudent.

Usually performed before accepting a customer's order.

**customer master data:** Contains a record of every customer with whom a company is authorized to regularly do business.

**customer relationship management (CRM) software:** A software application used to build and maintain an organization's customer-related database.

**customer self-service (CSS) software:** Software that allows an organization's customers to complete an inquiry, perform a task (including sales), or troubleshoot problems without the aid of an organization's employees; often an extension of *CRM* software.

## D

**data:** Facts or figures in raw form. Data represent the measurements or observations of objects and events.

**database approach to business event processing:** In this approach, facts about events are stored in relational database tables instead of separate files, which solves many of the problems caused by data redundancy.

**data independence:** Decoupling of data from the system applications (making the data independent of the application). A major difference between the database approach and the applications approach.

**database management system (DBMS):** A set of integrated programs designed to simplify the tasks of creating, accessing, and managing data.

**data encryption:** A process that employs mathematical algorithms and keys to encode data making it unintelligible to anyone without the keys.

**data maintenance:** A process that includes activities related to adding, deleting, or replacing the standing data portions of master data.

**data mining:** The exploration, aggregation, and analysis of large quantities of varied data from across the organization. Used to better understand business processes, trends, and opportunities to improve efficiency and effectiveness, as well as to discover anomalies.

**data model:** A model that depicts user requirements for data stored in a database.

**data redundancy:** Data stored in multiple locations within a system.

**data warehousing:** The use of information systems facilities to focus on the collection, organization, integration, and long-term storage of entity-wide data. Data warehousing provides users with easy

access to large quantities of varied data from across an organization to improve decision-making capabilities.

**debit card:** A form of payment that authorizes the collector to transfer funds electronically from the payer's bank account to the collector's bank account.

**decision making:** The process of making choices; the central activity of management.

**decision support systems (DSS):** Information systems that assist managers with unstructured decisions by retrieving and analyzing data for purposes of identifying and generating useful information.

**detective control plans:** These plans are used to discover that problems have occurred.

**digital image processing systems:** Computer-based systems for capture, storage, retrieval, and presentation of images of objects such as pictures and documents.

**direct benefits:** Those benefits directly attributable to the system or the system change. Direct benefits examples include reduced personnel and hardware costs, and improved data reliability.

**direct costs:** Those costs directly attributable to the system or the system change. Examples of direct costs include equipment purchased, personnel salaries, site preparation, and materials and supplies.

**digital signature:** This technology validates the identity of the sender and the integrity of an electronic message to reduce the risk that a communication was sent by an unauthorized system or user or was intercepted/modified in transit.

**document design:** A control plan in which a source document is designed to make it easier to prepare the document initially and later to input data from the document.

**document/record counts:** Simple counts of the number of documents entered (e.g., 25 documents in a batch). This procedure represents the minimum level required to control input completeness.

**document/record hash totals:** These totals reflect a summarization of any numeric data field within the input document or record, such as item numbers or quantities on a customer order.

**dollar totals:** A summation of the dollar value of items in the batch, such as the total dollar value of all remittance advices in a batch.

## E

**e-business:** The application of electronic networks (including the Internet) to undertake business processes between individuals and organizations.

**economic order quantity (EOQ):** A technique that calculates the optimum quantity of an item to order, analyzing all incremental costs associated with acquiring and carrying the particular item in inventory.

**electronic approvals:** Using a computer system's workflow facility to route business events to persons authorized to approve the event online.

**electronic bill presentment and payment (EBPP):** B2C systems that use a Web site to post customer bills and to receive their electronic payments.

**electronic data interchange (EDI):** The computer-to-computer exchange of business data (i.e., documents) in structured formats that allow direct processing of those electronic documents by the receiving computer system.

**electronic document management (EDM):** The capturing, storage, management, and control of electronic document images for the purpose of supporting management decision making and facilitating business event data processing.

**electronic funds transfer (EFT):** A variety of procedures for transmitting cash funds between entities via electronic transmission instead of using paper checks.

**electronic invoice presentment and payment (EIPP):** B2B systems that combine e-invoicing and e-payment processes to (1) send invoices to customers via a Web portal or secure network using a third-party service provider and to (2) receive electronic payments that are initiated by the payer, processed by the third party, and settled by the ACH network, wire transfer, or credit card company.

**electronic mail (e-mail):** The electronic transmission of nonstandardized messages between two individuals who are linked via a communications network (usually an intranet or the Internet).

**electronic store fronts:** Internet-located resources for displaying goods and services for sale and for conducting related sales events.

**electronic time management system:** A computer-based system that captures, stores, and reports time. Inputs to such systems are via the reading of magnetic strips on employee identification badges, *bar code* readers, and key entry.

**employee/payroll master data:** The central repository of data about people who work for an organization.

**enter data close to the originating source:** A strategy for the capture and entry of event-related data close to the place (and probably time) that an

event occurs, reducing the likelihood that events will be lost and not entered into the system and that errors will be introduced into the system.

**enterprise application integration (EAI):** Combines processes, software, standards, and hardware to link together two or more systems and allow them to operate as one.

**enterprise database:** The central repository for all the data related to an organization's business activities and resources.

**enterprise information systems:** *See* enterprise systems.

**Enterprise Risk Management (ERM):** A process, effected by an entity's board of directors, management, and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may effect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives.

**enterprise resource planning (ERP) systems:** Software packages used for the core systems necessary to support enterprise systems.

**Enterprise Services Bus (ESB):** Uses standardized protocols to let event-driven applications communicate less expensively than can the tightly coupled, synchronous EAI platforms.

**enterprise systems:** Integrate the business process and information from all of an organization's functional areas, such as marketing and sales, cash receipts, purchasing, cash disbursements, human resources, production and logistics, and business reporting (including financial reporting).

**enterprise-wide information systems:** *See* enterprise systems.

**entity:** Any object, event, or agent about which data are collected.

**entity-relationship diagram (E-R diagram):** Reflects the system's key entities and the relationships among those entities.

**entity-relationship model:** A diagram of the relational model that includes entities and relationships.

**entity-relationship modeling:** A data modeling approach in which the designer identifies the important things (called *entities*) about which information will be stored and then identifies how the things are related to each other (called *relationships*).

**e-procurement:** The use of information technology to automate significant portions of the procurement process.

**E-R diagram:** *See* entity-relationship diagram.

**error routines:** These processes handle the required actions when processing can't proceed as planned; also known as *exception routines*.

**evaluated receipt settlement (ERS):** A process by which an organization pays for a purchase on the basis of the goods receipt.

**event-driven architecture (EDA):** An approach to designing and building enterprise systems in which business events trigger messages to be sent by middleware between independent software modules that are completely unaware of each other.

**events:** Occurrences related to resources that are of interest to the business.

**exception and summary report:** This report reflects the events—either in detail, summary, or both—that were accepted or rejected by the system.

**exception routines:** These processes handle the required actions when processing can't proceed as planned; also called *error routines*.

**executive information systems (EIS):** A subset of DSS, these systems combine information from the organization and the environment, organize and analyze the information, and present the information to the manager in a form that assists in decision making; also called *executive support systems* or *ESS*.

**executive support systems (ESS):** These systems, which can be considered a subset of DSS, combine information from the organization and the environment, organize and analyze the information, and present the information to the manager in a form that assists in decision making; also called *executive information systems* or *EIS*.

**expert systems (ES):** Rule-based systems that emulate the problem-solving techniques of human experts. Appropriate when decisions are extremely complex, consistency of decision making is desirable, and the decision maker wants to minimize time spent making the decision while *maximizing* the quality of the decision.

**exploding the BOM:** A process that involves extending a bill of materials to determine the total of each component required to manufacture a given quantity of an upper-level assembly or subassembly specified in the MPS.

**eXtensible Business Reporting Language (XBRL):** An XML-based language consisting of a set of tags that are used to unify the presentation of business reporting information into a single format, easily produced and read by almost any financial

software package, and easily searched by Web browsers.

**external entities:** Entities (i.e., persons, places, or things) outside the system that send data to, or receive data from, the system.

**extranet:** A type of internal network (intranet) that has been extended to limited external access to members of an organization's value system.

## F

**feasibility study:** A set of procedures conducted to determine the practicability of a potential systems development project.

**feeder process:** Any business process that accumulates *business event* data that are then communicated to and processed within the general ledger.

**financial reporting officer:** A manager with responsibilities for reporting financial information to external parties.

**first normal form (1NF):** A relation is in 1NF if its tables do not contain repeating groups.

**flexible manufacturing systems (FMS):** An automated manufacturing operations system that can react quickly to product and design changes because centralized computer control provides real-time routing, load balancing, and production scheduling logic.

**float:** When applied to cash receipts, the time between the customer tendering payment and the availability of good funds.

**forms (in DBMSs):** Onscreen presentations of data in tables and queries.

**fraud:** A deliberate act or untruth intended to obtain unfair or unlawful gain.

**functionally dependent:** An attribute is functionally dependent on another attribute (or a collection of other attributes) if a value for the first attribute determines a single value for the second attribute at any time.

## G

**general controls:** Controls applied to all IT service activities; also called *IT general controls*.

**general ledger and business reporting (GL/BR) process:** An interacting structure of people, equipment, methods, and controls that is designed to accomplish both operations and information system functions, including maintenance of the general ledger and preparation of internal and external business reports.

**general ledger master data:** A data repository that contains summarized information about all of an organization's business event data.

**general ledger (GL) process:** This process involves accumulating data, classifying data by general ledger accounts, and recording data in those accounts; and fueling the financial reporting, business reporting, and other reporting subsystems by providing the information needed to prepare external and internal reports.

**global inventory management:** An inventory management approach where inventory needs and inventory and production capabilities are matched across the entire global enterprise, not just at a local or regional level.

**good funds:** Funds on deposit and available for use.

**group support systems (GSS)/ group decision support systems (GDSS):** Computer-based systems that support collaborative intellectual work such as idea generation, elaboration, analysis, synthesis, information sharing, and decision making. GSS/GDSS use technology to solve the time and space dimension problems associated with group work.

**group decision support systems (GDSS):** Computer-based systems that support collaborative intellectual work such as idea generation, elaboration, analysis, synthesis, information sharing, and decision making; also called *group support systems (GSS)*.

**groupware:** The software identified with GSS, focuses on such functions as e-mail, group scheduling, and document sharing.

## H

**hash totals:** A summation of any numeric data existing for all documents in the batch, such as a total of customer numbers or invoice numbers in the case of remittance advices; used for control purposes only.

**hierarchical coding:** Hierarchical codes attach specific meaning to particular character positions. Hierarchical coding orders items in descending order, where each successive rank order is a subset of the rank above it.

**hierarchical database model:** A logical database model where records are organized in a pyramid structure, and no child record may have more than one parent record. All relationships are 1:N.

**human capital management (HCM):** The process of managing how people are hired, developed, assigned, motivated, and retained.

**human resources (HR) management process:** An interacting structure of people, equipment, methods, and controls used to create information flows that support repetitive work routines of the human resources department and decision needs of those who manage the human resources department.

**immediate mode:** The data processing mode in which little or no delay occurs between any two data processing steps.

**imprest payroll bank account:** An account that is reimbursed for the *exact amount* of the disbursements made from the account, rather than being reimbursed for round amounts. When applied to payroll, an imprest system requires that the transfer of cash from the general cash account to the payroll bank account is in the amount of the total of paychecks issued—no more, no less.

**independent authorization to make payment:** A control to ensure that only authorized payments are made by enforcing segregation of duties between the accounts payable record keeping and payment execution.

**independent validation of vendor invoices:** A control to ensure that recorded vendor invoices come from purchase order and receiving data created by entities other than the entity that records the vendor invoices; used to preclude unauthorized and invalid accounts payable records.

**indirect benefits:** These benefits are not *directly* attributable to the system or system change. An example of an indirect benefit is increased revenue resulting from improved customer support.

**indirect costs:** These costs are not *directly* attributable to the system or the system change. Indirect costs are normally associated with overhead expenses, such as personnel fringe benefits and utilities.

**information:** Data presented in a form that is useful in a decision-making activity.

**information processing:** Data-processing functions related to economic events such as accounting events, internal operations such as manufacturing, and financial statement preparation such as adjusting entries.

**information-processing activities:** Activities that retrieve data from storage, transform data, or file data.

**information system (IS):** A man-made system that generally consists of an integrated set of computer-based components and manual components estab-

lished to collect, store, and manage data and to provide output information to users.

**instance:** One specific thing of the type defined by the entity.

**instance document:** An XBRL document that contains all information, including tags, about the occurrence of an item.

**intangible costs (benefits):** These costs and benefits cannot be reasonably quantified. A productivity loss caused by low employee morale is an example of such a cost; whereas intangible benefits may accrue from improved information.

**intelligent agent:** A software program that may be integrated into a DSS or other software tool (such as word processing, spreadsheet, or database packages) that provides automated assistance, advice, and/or information for decision making.

**internal control:** A process—effected by an entity's board of directors, management, and other personnel—designed to provide reasonable assurance regarding the achievement of objectives in effectiveness and efficiency of operations, reliability of reporting, and compliance with applicable laws and regulations.

**internal entity:** An entity (i.e., person, place, or thing) within the system that transforms data. Internal entities include persons (for example, accounting clerks), places (for example, departments), and things (for example, computers).

**Internet:** A massive interconnection of computer networks worldwide that enables communication between dissimilar technology platforms.

**Internet assurance:** A service provided for a fee to vendors to provide limited assurance to users of the vendor's Web site that the site is in fact reliable, and event data security is reasonable.

**Internet auction markets:** Provide an Internet base for companies to place products up for bid or for buyers to put proposed purchases up for bid.

**Internet commerce:** The computer-to-computer exchange of business event data in structured or semistructured formats via Internet communication that allows the initiation and consummation of business events.

**Internet market exchanges:** These exchanges bring together a variety of suppliers in a given industry with one or more buyers in the same industry to provide Internet commerce through organized markets.

**intranets:** Mini-internal equivalents to the Internet that link an organization's internal documents and databases into a system that is accessible through



Web browsers or, increasingly, through internally developed software designed to maximize the benefits from utilization of organizational information resources.

**inventory master data:** A file or table of data that contains a record of each item stocked in the warehouse or regularly ordered from a vendor.

**invoice:** A business document used to notify the customer of an obligation to pay the seller for the merchandise (or service) ordered and shipped (or provided, if a service).

**IT general controls:** Controls applied to all IT service activities; also called *general controls*.

**item or line counts:** Counts of the number of items or lines of data entered, such as a count of the number of invoices being paid by all the customer remittances.

## J

**job time records:** Records that reflect the start and stop times on specific jobs. Their purpose is to allow the distribution of payroll costs to jobs in process (or to other accounts).

**journalize:** The process of recording a business event (i.e., accounting transaction) in a book of original entry (i.e., a special or general journal).

**journal voucher:** An internal source document used to notify the general ledger to make an accounting entry.

**just-in-time (JIT):** A pull manufacturing philosophy or business strategy for designing production processes that are more responsive to precisely timed customer delivery requirements.

## K

**key attribute:** The attribute whose value is unique (i.e., different) for every entity that will ever appear in the database and is the most meaningful way of identifying each entity.

**key verification:** A control plan in which documents are keyed by one individual and then rekeyed by a second individual. The data entry software compares the second keystrokes to the strokes keyed by the first individual. If there are differences, it is assumed that one person misread or miskeyed the data.

**knowledge management:** The process of capturing, storing, retrieving, and distributing the knowledge of the individuals in an organization for use by others in the organization to improve the quality and efficiency of decision making across the firm.

## L

**labor-force planning data:** A repository of data concerning an organization's short-term and long-term staffing requirements. It may include data about various job specifications, with the specifications delineating the training and experience necessary to perform each job.

**lapping:** A fraud by which funds being received by one customer are stolen, and the theft is covered up by applying funds received from another customer to the first customer's account.

**legacy systems:** Systems that have existed in an organization over a long period of time and developed using an organization's previous computer hardware and software platforms.

**lifecycle costs:** The sum of the costs to design, produce, market, deliver, and support a product throughout the product's lifecycle from conception to ultimate discontinuance.

**limit checks:** A type of programmed edit that tests whether the contents (e.g., values) of entered data fall within predetermined limits; also called *reasonableness tests*.

**local area networks (LANs):** Communication networks that link several different local user machines with printers, databases, and other shared devices.

**locations:** Places or physical locations at which events occur, resources are stored, or agents participate in events.

**lockbox:** A postal address, maintained by the firm's bank, which is used solely for the purpose of collecting checks. The bank processes the receipts, providing a quick update to the firm's bank balance, and provides the collecting company with the remittance advice (RA) data to update customer accounts.

**logical data flow diagram:** A graphical representation of a system showing the system's processes (as bubbles), data stores, and the flows of data into and out of the processes and data stores.

## M

**management information system (MIS):** A man-made system that generally consists of an integrated set of computer-based components and manual components established to collect, store, and manage data and to provide output information to users. *See also* information systems (IS).

**management process:** A man-made system consisting of the people, authority, organization,

policies, and procedures whose objective is to plan and control the operations of the organization.

**managerial reporting officer:** A manager with responsibilities and expertise for preparing internal reports to assist management decision making.

**manual reconciliation of batch totals:** A control plan operates in the following manner: (1) one or more of the batch totals are established manually; (2) as individual event descriptions are entered (or scanned), the data entry program accumulates independent batch totals; (3) the computer produces reports (or displays) at the end of either the input process or update process, or both, which include the relevant control totals that must be manually reconciled to the totals established prior to the particular process; (4) the person who reconciles the batch total must determine why the totals do not agree and make corrections as necessary to ensure the integrity of the input data.

**manufacturing orders (MOs):** Orders that convey authority for the manufacture of a specified product or subassembly in a specified quantity and describe the material, labor, and machine requirements for the job.

**manufacturing resource planning (MRP):** An integrated decision support system for planning, executing, and controlling manufacturing operations. It includes facilities for planning all manufacturing resources, including material, machines, labor, and financial capital.

**master data:** Repositories of relatively permanent data maintained over an extended period of time.

**master production schedule (MPS):** A statement of specific production goals developed from forecasts of demand, actual sales orders, and/or inventory information.

**match invoice with purchase order and receiving report:** A control plan where an invoice should be matched to the corresponding purchase order and receiving report data to ensure that items on the invoice were ordered and received and that the invoice is accurately recorded.

**materials requirements planning:** This process uses bills of material, raw material and work-in-process (RM/WIP) inventory status data, open order data, and the master production schedule to calculate a time-phased order requirements schedule for materials and subassemblies.

**mathematical accuracy checks:** These edit checks compare calculations performed manually to those performed by the computer to determine whether a document has been entered correctly.

**matrix:** A tool designed to help analyze a situation and relate processes to desired results.

**maximum cardinality:** A measure of the highest level of participation that one entity can have in another entity.

**middleware:** A software product that connects two or more separate applications or software modules.

**mnemonic coding:** Coding in which some or all of the identifying characters are letters of the alphabet.

**move tickets:** Authorize and record movement of a job from one work center to another.

## N

**network database model:** A logical database model that handles complex data structures, such as a child record that has more than one parent record.

**network providers:** Companies that provide a link to the Internet by making their directly connected networks available for access by fee-paying customers.

**neural networks (NN):** Computer hardware and software systems that mimic the human brain's capability to recognize patterns or predict outcomes using less-than-complete information.

**neutrality or freedom from bias:** The quality of being not biased. Bias is the tendency of information to fall more often on one side than on the other of the object or event that it represents.

**nonkey attribute:** An attribute that is not part of the primary key.

**non-null:** A value that is not missing in a relational database. Key attributes are required to be non-null in every tuple in a relational database.

**nonrecurring costs:** Costs that occur only once to get a system operational.

**normal forms:** Rules based on set theory, the branch of mathematics on which relational database models are based. These rules include specifications that must be met by relational database tables.

**null:** A missing value in a relational database.

## O

**object-oriented database model:** A model that allows the storage of both simple and complex objects (including items such as video, audio, and pictures). Characteristics also include inheritance and encapsulation.

**object-relational databases:** A relational DBMS framework with the capability to store complex data types.

**offline device:** A device that is not directly connected to a central computer or network.

**one-for-one checking:** An business process control that uses a detailed comparison of individual elements of two or more data sources to determine that they agree.

**online:** A computer configuration in which certain equipment is directly connected to the computer.

**online prompting:** A control plan that requests user input or asks questions that the user must answer.

**online real-time (OLRT) systems:** These systems gather business event data at the time of occurrence, update the master data almost instantaneously, and provide the results arising from the business event within a very short amount of time—that is, in *real-time*.

**online transaction entry (OLTE):** The use of data entry devices allows business event data to be entered directly into the information system at the time and place that the business event occurs.

**open-item system:** A complex accounts receivable system appropriate in situations where invoices are prepared and sent for each sale (i.e., each shipment), and the customer typically makes payments for specific invoices when those invoices are due.

**operations process:** A man-made system consisting of the people, equipment, organization, policies, and procedures whose objective is to accomplish the work of the organization.

**optical character recognition:** Data entry into a system using light reflection for pattern recognition of handwritten or printed characters.

**order entry/sales (OE/S) process:** An interacting structure of people, equipment, methods, and controls that is designed to achieve the goal of providing information for the decision needs of those who manage various sales and marketing functions.

**order-to-cash process:** A process that includes the events surrounding the sale of goods to a customer, the recognition of the revenue, and the collection of the customer payment.

**organizational governance:** A process by which organizations select objectives, establish processes to achieve objectives, and monitor performance.

**outsourcing:** The assignment of an internal function to an outside vendor.

## P

**packing slip:** A shipping document that is included with a package and identifies the customer and the contents of the package.

**paperless systems:** A system that eliminates documents and forms as the medium for conducting business.

**parent records:** Records that include the lower-level child records within a hierarchical DBMS.

**partial dependency:** A problem that arises because an attribute is dependent on a portion of the primary key and *not* on the entire key.

**participation constraint:** A specification of both the minimum and maximum degree of participation of one entity in the relationship with another entity.

**parts master:** A list of the detailed specifications for each raw material item contained in a product.

**payroll clearing account:** A separate bank account used solely for payroll purposes.

**payroll direct deposit system:** A system where employees' net pay is sent electronically through the banking system and deposited directly to the employees' bank accounts.

**payroll process:** An interacting structure of people, equipment, methods, and controls that creates information flows to support the repetitive work routines of the payroll department.

**payroll service bureau:** A company that specializes in rendering payroll services to client companies for a fee.

**performance reports:** A managerial accounting report that compares actual performance with budgeted expectations.

**periodic mode:** The processing mode in which a delay exists between data processing steps.

**pervasive control plans:** Control plans that relate to a multitude of goals and processes. Like the control environment, they provide a climate or set of surrounding conditions in which the various business processes operate.

**phased order requirements schedule:** A schedule used for ordering materials and subassemblies.

**physical data flow diagram:** Graphical representation of a system showing the system's internal and external entities and the flows of data into and out of these entities.

**picking ticket:** A data flow—often a sales order copy—that authorizes the warehouse to “pick” the goods from the shelf and send them to shipping.

**populate input screens with master data:** A control plan that operates when a clerk enters the identification code for an entity, such as a customer, and the system retrieves data about that entity from the master data, to eliminate the need for re-entry of those data.

**post:** Moving business event from a journal to a subsidiary ledger.

**post-billing system:** A billing system in which invoices are prepared after goods have been shipped and the sales order notification (sales order) has been matched to shipping's billing notification (shipping notice).

**post-implementation review:** An examination of a working information system, conducted soon after that system's implementation to determine whether the user's requirements have been satisfied and whether the development effort was efficient and conducted in accordance with the organization's systems development standards.

**pre-billing system:** A billing system in which invoices are prepared immediately on acceptance of a customer order—that is, after inventory and credit checks have been accomplished but before the goods have been shipped.

**predictive value and feedback value:** An information quality that improves a decision maker's capacity to predict, confirm, or correct earlier expectations.

**preformatted screens:** A computer screen designed to control the entry of data by defining the acceptable *format* of each data field, automatically moving to the next field, requiring that certain fields are completed, and/or by automatically populating fields.

**preliminary feasibility study:** A set of procedures conducted to determine the practicability of a potential systems development project.

**preventive control plan:** A control plan that is designed to stop problems from occurring.

**primary key:** The unique identifier for each row of a table (or record within a file) that serves as an address for the row.

**procedures for rejected inputs:** A control plan designed to ensure that erroneous data (i.e., not accepted for processing) are corrected and resubmitted for processing.

**process:** A series of actions or operations leading to a particular and usually desirable result.

**product lifecycle management (PLM) software:** Software that manages product data during a product's life, beginning with the design of the product, continuing through manufacture, and culminating in the disposal of the product at the end of its life.

**production, planning, and control:** A production subsystem concerned with managing the orderly and timely movement of goods through the production process.

**programmed edit checks:** An edit that is automatically performed by data entry programs upon entry of the input data.

**public databases:** Databases that provide rich information sources that are searchable either for free or on a for-fee basis.

**pull manufacturing:** An approach to manufacturing where production is initiated as individual sales orders are received. Theoretically, each job consists of a "batch" of one unit. In pacing production, an idle machine pulls the next part from the previous machine as soon as that part is available thus pulling goods through the factory only when needed to satisfy demand.

**purchase order (PO):** A request for the purchase of goods or services from a vendor.

**purchase order master data:** A compilation of open purchase orders that includes the status of each item on order.

**purchase receipts data:** An event data store with each record reflecting a receipt of goods and services.

**purchase requisition:** An internal request to acquire goods and services; it may originate from authorized personnel within an organization, or from automated inventory replenishment systems, such as supply chain-management processes.

**purchase requisitions data store:** A file or table where purchase requisitions are compiled.

**purchase returns and allowances:** Events that include the reduction of accounts payable due to returning items purchased or another agreement with the vendor.

**purchase-to-pay process:** A process that includes the events surrounding the purchase of goods from a vendor, the recognition of the cost of those goods, and the payment to the vendor.

**purchasing events data:** Data that contain, in chronological sequence, the details of each of the organization's purchase events.

**purchasing process:** An interacting structure of people, equipment, methods, and controls that is designed to accomplish the functions of requirements determination, purchase order processing, and goods receipt.

**push manufacturing:** An approach to manufacturing management in which sales forecasts drive the production plan, and goods are produced in large batches. Each machine performs its operation on the batch, and then the entire job waits until the operation can be started on the next machine in the sequence.

## Q

**queries:** An element of a DBMS that allows users and programmers to access the data stored in various tables.

**query language:** A language used to access a database and to produce inquiry reports.

## R

**Radio-Frequency Identification (RFID):** A system for sending and receiving data, using wireless technology, between an RFID tag (a chip with an antenna) and an RFID transceiver.

**raw materials requisition:** An authorization that identifies the type and quantity of materials to be withdrawn from the storeroom.

**reasonableness checks:** A type of programmed edit check that tests whether the contents (e.g., values) of the entered data fall within predetermined limits; also called *limit checks*.

**reconcile bank account:** Records of cash disbursements and receipts are matched to the bank's records to ensure that all disbursements and receipts recorded by the bank were authorized and accurate. An entity other than accounts payable and cash disbursements should perform this reconciliation.

**recurring costs:** Costs that occur throughout all or most of the system's life.

**recursive relationship:** A relationship between two different instances of the same entity type.

**referential integrity:** A specification that for every attribute value in one relation that has been specified to allow reference to another relation, the tuple being referenced must remain intact.

**reject stub:** A data flow assigned the label "Reject" that leaves a bubble but does not go to any other bubble or data store and indicates processing that is performed in other-than-normal situations.

**relation:** A collection of data representing multiple occurrences of a resource, event, or agent.

**relational database model:** A logical model for a database in which data are logically organized in two-dimensional tables. Each individual type of information or event is stored in its own table.

**relationship (junction) tables:** Tables with composite primary keys that connect (join) tables in a many-to-many relationship.

**relevance:** A quality when information is capable of making a difference in a decision-making situation by reducing uncertainty or increasing knowledge for that particular decision.

**remittance advice (RA):** A business document used by the payer to notify the payee of the items being paid.

**remittance advice file:** A file or table where copies of the RAs are stored.

**reorder point (ROP) analysis:** A technique for determining when to reorder an item based on the item's unique sales rate.

**reports:** An element that makes up DBMSs, that provides printed lists and summaries of data stored in tables or collected by queries from one or more tables.

**request for proposal (RFP):** A document sent to vendors that invites submission of plans for providing hardware, software (for a purchased system), and related services.

**resources:** Assets (tangible or intangible) that an organization owns.

**responsibility accounting/reporting system:** A managerial reporting system that is tied to the hierarchy or chain of responsibility/authority reflected by a firm's organization chart, and as information is reported upward, the level of detail is filtered, meaning that figures are aggregated (summarized) as they are reported to successive management levels.

**risks:** The possibility that an event or action will cause an organization to fail to meet its objectives.

**routing master:** A data store that specifies the operations necessary to complete a subassembly or finished good and the sequence of these operations.

## S

**sales event data:** A file comprised of invoice or sales order records created as the sales process captures sales events, through the preparing and sending of an invoice.

**sales force automation (SFA) software:** Software that automates sales tasks such as order processing, contact management, inventory monitoring, order tracking, and employee performance evaluation.

**scanners:** Input devices that capture printed images or documents and convert them into electronic digital signals (i.e., into binary representations of the printed image or document) that can be stored on computer media.

**schema:** A complete description of the configuration of record types, data items, and the relationships among them.

**second normal form (2NF):** A table (relation) is in 2NF if it is in first normal form and has no partial

dependencies; that is, no nonkey attribute is dependent on only a portion of the primary key.

**self-checking digit code:** A code that includes an extra digit that can be used to check the accuracy of the code.

**sequence check:** A type of control in a batch processing system where documents that are numbered sequentially are used to determine that all documents have been processed (completeness) and that no extra documents have been processed (validity).

**sequential coding:** Assigns numbers to objects in chronological sequence; also known as *serial coding*.

**serial coding:** Assigns numbers to objects in chronological sequence; also known as *sequential coding*.

**service bureau:** A firm providing information processing services, including hardware and software for a fee; frequently providing the services less expensively and in a timelier manner than would be possible with an in-house computer.

**service-oriented architectures (SOA):** Well-defined, independent functions (or applications) that can be distributed over a network via Web Services.

**shop floor control (SFC) process:** A process devoted to monitoring and recording the status of manufacturing orders as they proceed through the factory.

**significant digit coding:** Assigns specific digits a meaning of their own, allowing selective inquiries of a database.

**skills inventory data:** A repository of data that catalogs each employee's set of relative skills, experience, education, and training.

**standing data:** Relatively permanent portions of master data, such as the credit limit on customer master data and the selling price and warehouse location on inventory master data.

**structured decisions:** Decisions for which all three decision phases (intelligence, design, and choice) are relatively routine or repetitive.

**structured systems analysis:** A set of procedures conducted to generate the specifications for a new (or modified) information system or subsystem.

**structured systems design:** A set of procedures performed to convert the logical specification into a design that can be implemented on the organization's computer system.

**subassemblies:** Separately manufactured components used in another assembly or a final product.

**subschema:** A description of a portion of a schema.

**subsystem:** A part of a system; these parts are interrelated or integrated as a single system.

**supply chain:** The connections between an organization, including the flow of information, materials, and services, from suppliers of merchandise and raw materials through to the organization's customers.

**summarize:** Prepare a trial balance to show the total impact on each general ledger account of a set of business events.

**supplier relationship management (SRM) software:** Software that manages the interactions with the organizations that supply the goods and services to an enterprise just as CRM software streamlines the processes between the enterprise and its customers.

**supply chain management (SCM):** The combination of processes and procedures used to ensure the delivery of goods and services to customers at the lowest cost while providing the highest value to the customers.

**supply chain management (SCM) software:** Software that helps plan and execute the steps in an organization's supply chain, including demand planning; acquiring inventory; and manufacturing, distributing, and selling the product.

**system:** A set of interdependent elements that together accomplish specific objectives.

**systems development:** Comprises the steps undertaken to create, modify, or maintain an organization's information system. The systems development process is made up of four primary phases: systems analysis, design, implementation, and operation.

**systems development life cycle (SDLC):** The progression through the phases of the systems development process, from birth through implementation to ongoing use.

**systems development life cycle (SDLC) methodology:** This structured approach to developing information systems called the which is a formalized, standardized, documented set of activities used to manage a systems development project.

**systems flowchart:** A graphical representation of a business process, including information processes (inputs, data processing, data storage, and outputs), as well as the related operations processes (people, equipment, organization, and work activities).

**systems implementation:** A set of procedures performed to complete the design contained in the approved systems design document and to test,

install, and begin to use the new or revised information system.

**systems selection:** Set of procedures performed to choose the software specifications and hardware resources for an information system.

**systems survey:** A set of procedures conducted to determine the practicability of a potential systems development project and to prepare a systems development plan for projects considered feasible.

## T

**tables:** An element that makes up DBMSs. A place to store data.

**tangible benefits:** These benefits can be reasonably quantified. Examples of benefits include equipment costs and increased revenue.

**tangible costs:** These costs can be reasonably quantified. Examples of costs include software purchases and insurance.

**third normal form (3NF):** A relation is in 3NF if it is in second normal form with no transitive dependencies.

**throughput time:** The time it takes from when authorization is made for goods to be produced to when the goods are completed.

**tickler file:** A manual file of documents, or a computer file, reviewed on a regular basis, that contains business event data that is pending further action.

**time-phased order requirements schedule:** A schedule that shows the time period when a manufacturing order or purchase order should be released so that the subassemblies and raw materials will be available when needed.

**timeliness:** Information available to a decision maker before it loses its capacity to influence a decision.

**top-down partitioning:** The successive subdividing, or “exploding,” of logical DFDs that, when performed, leads to a set of balanced DFDs.

**total quality control (TQC):** A subset of JIT, that places responsibility for quality in the hands of the builder rather than the inspector.

**transitive dependency:** Exists in a table when a nonkey attribute is functionally dependent on another nonkey attribute.

**tuple:** A set of data that describes a single instance of the entity represented by a relation (for example, one employee is an instance of the EMPLOYEE relation); frequently a row within a table.

**turnaround documents:** Documents such as remittance advices that are used to capture and input a subsequent event.

## U

**understandability:** The information quality that enables users to perceive the information’s significance.

**unnormalized table:** Contains repeating attributes (or fields) within each row (or record).

**unstructured decision:** A decision for which none of the decision phases (intelligence, design, or choice) are routine or repetitive.

**update anomalies:** Errors created when modifying data within a system. One of many problems caused by functional dependencies.

## V

**validity:** An information quality concerning the inclusion of actual events and actual objects.

**value-added network (VAN):** A service that acts as the EDI “post office.” An organization can connect to the VAN when it wants, leave its outgoing messages, and, at the same time, pick up incoming messages from its “mailbox.”

**value chain:** A chain of activities performed by the organization to transform inputs into outputs valued by the customer.

**variance analysis:** The process of comparing actual information about input costs and usage to standards for costs and usage for manufacturing inputs.

**vendor invoice:** A business document that notifies the purchaser of an obligation to pay the vendor for goods (or services) that were ordered by and shipped to the purchaser.

**vendor master data:** Contains a record of each vendor that is approved for use by the organization.

**vendor packing slip:** A list that accompanies the purchased inventory from the vendor and identifies the contents of a shipment and triggers the receiving process.

## W

**Web browsers:** Software programs designed specifically to allow users to easily view various documents and data sources available on the Internet.

**Web Services:** A software application that supports direct interactions with software objects over an intranet or the Internet.

**wide area networks (WANs):** Communication networks that link distributed users and local networks into an integrated communications network.

**work center:** A group of similar workstations.

**work center master:** Describes each work center available for producing products, including information such as the machine available at the station,

its capacity, its maintenance needs, labor needs to operate it, and so on.

**workstation:** The assigned location where a worker performs his or her job; it could be a machine or a workbench.

**written approvals:** A signature or initials on a document to indicate that an event has been authorized.