

339

Internal: First Out

WorldBase Guide

Segmentation and Glossary

Internal: First Quarter 1990

Dataquest

DB a company of
The Dun & Bradstreet Corporation

WorldBase Guide

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WorldBase Guide

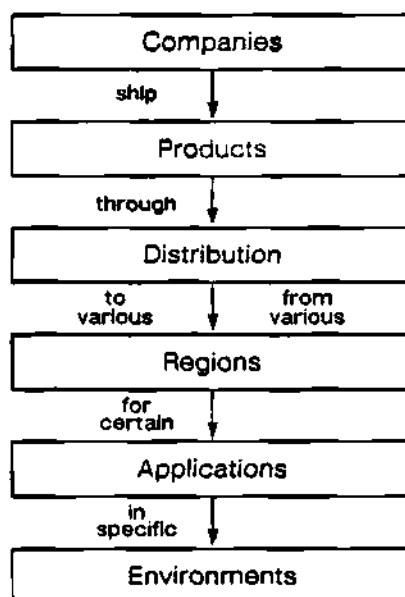
WorldBase is an abbreviation of the Dataquest *worldwide research database*.

The *WorldBase Guide* provides a reference for Dataquest research, analysis, and publications. The segments and terms found in this guide are used consistently in our research and methodology and throughout Dataquest products.

The *WorldBase Guide* is divided into two parts: segmentation and glossary. The segmentation section provides a comprehensive listing of the classifications used in our research. This segmentation is broken into different dimensions including companies, products, distribution, regions, applications, and environments. These dimensions are illustrated below (see Figure 1). The glossary is an alphabetical list defining the terms found in the segmentation section.

Dataquest products package information and analysis on segment combinations. Although our Industry Services may report on a specific combination of segments, information on other segments is available through other Dataquest products.

Figure 1
WorldBase Dimensions



0005268-1

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March 1990

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The content of this report represents our interpretation and analysis of information generally available to the public or released by responsible individuals in the subject companies, but is not guaranteed as to accuracy or completeness. It does not contain material provided to us in confidence by our clients.

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Companies

The company section contains more than 3,500 parent companies on which Dataquest conducts research. These companies are studied because of their concentration or emphasis in technology markets and industries. The company segmentation shows the breadth and depth of collective coverage that Dataquest maintains. Because of the extensive nature of the company list, it is not published in this guide.

Products

The product segmentation lists the products researched by Dataquest in hierarchical order. This list is an exhaustive list of Dataquest's perception of the technology market; it does not represent each Industry Services' coverage but rather the collective coverage through Dataquest's services and products.

Products

MATERIALS

Wafer

- Silicon Wafer

- Epitaxial Wafer

Gas

- Bulk Gas

 - Nitrogen

 - Oxygen

 - Hydrogen

 - Argon

- Specialty Gas

 - Silicon Precursor

 - Dopant

 - Plasma Etchant

 - Reactant Gas

 - Atmospheric/Purge Cylinder Gas and Other

- Plastics

COMPONENTS

Semiconductor

- Integrated Circuit

 - Bipolar Digital

 - TTL

 - ECL

 - Other Bipolar Digital

- Bipolar Digital (Recap)

 - Bipolar Digital Memory

 - Bipolar RAM

 - Bipolar Nonvolatile Memory

 - Other Bipolar Memory

 - Bipolar Digital Logic

 - Bipolar Application Specific IC

 - Bipolar Gate Array

 - Bipolar PLD

 - Bipolar PLA

 - Bipolar PMD

 - Bipolar FPGA

 - Bipolar Cell-Based IC

 - Bipolar Custom IC

COMPONENTS (Continued)

Bipolar Standard Logic

Other Bipolar Logic

MOS Digital

NMOS

PMOS (Other)

CMOS

BiCMOS (BiMOS)

MOS Digital (Recap)

MOS Memory

DRAM

16K DRAM

32K DRAM

64K DRAM

128K DRAM

256K DRAM

1Mb DRAM

4Mb DRAM

16Mb DRAM

SRAM

Slow SRAM

1K SRAM

4K SRAM

8K SRAM

16K SRAM

64K SRAM

256K SRAM

1Mb SRAM

4Mb SRAM

SRAM

Fast SRAM

1K SRAM

4K SRAM

8K SRAM

16K SRAM

64K SRAM

256K SRAM

1Mb SRAM

4Mb SRAM

Nonvolatile Memory IC

ROM

4K ROM

8K ROM

16K ROM

COMPONENTS (Continued)

32K ROM
64K ROM
128K ROM
256K ROM
1Mb ROM
2Mb ROM
4Mb ROM
8Mb ROM
16Mb ROM

EPROM

16K EPROM
32K EPROM
64K EPROM
128K EPROM
256K EPROM
1Mb EPROM
2Mb EPROM
4Mb EPROM
8Mb EPROM

EEPROM

1K EEPROM
2K EEPROM
4K EEPROM
8K EEPROM
16K EEPROM
32K EEPROM
64K EEPROM
128K EEPROM
256K EEPROM
512K EEPROM
1Mb EEPROM

Other MOS Memory**Microcomponents****MOS Microprocessor**

8-bit MOS MPU
10-bit MOS MPU
16-bit MOS MPU
16/32-bit MOS MPU
32-bit MOS MPU
32/64-bit MOS MPU
64-bit MOS MPU

MOS Microprocessor (Recap)

CISC MOS MPU
RISC MOS MPU

COMPONENTS (Continued)

- MOS Microcontroller
 - 4-bit MOS MCU
 - 8-bit MOS MCU
 - 16-bit MOS MCU
 - 32-bit MOS MCU
- Digital Signal Processor
 - DSP Microprocessor (DSMPU)
 - Microprogrammable DSP (MPDSP)
 - Special-Function DSP (SFDSP)
- MOS Microperipheral
 - System Support Peripheral
 - Traditional Peripheral
 - Counter/Timer
 - DMA
 - Interrupt Controller
 - Memory Management
 - Real-Time Clock
 - Other
 - General-Purpose I/O
 - DRAM Controller
 - Cache Controller
 - PC Logic Chip Set
 - Display Peripheral
 - Alphanumeric CRT Controller
 - Graphics Controller
 - Keyboard Controller
 - Printer Controller
 - Other
 - Mass Storage Peripheral
 - Floppy Disk Controller
 - Hard-Disk Controller
 - Optical Disk Controller
 - Other
 - Communication Peripheral
 - LAN
 - ISDN
 - Modem
 - Serial I/O
 - UART/USART
 - Other
 - Floating-Point Coprocessor
 - 16-bit
 - 32-bit

COMPONENTS (Continued)**MOS Logic**

- MOS Application Specific IC

- MOS Gate Array

- MOS PLD

- MOS PLA

- MOS PMD

- MOS FPGA

- MOS Cell-Based IC

- MOS Custom IC

- Standard MOS Logic

- Other MOS Logic

Analog Integrated Circuit

- Monolithic Analog IC

- Amplifier IC

- Voltage Regulator/Reference IC

- Comparator IC

- Data Converter IC

- Other Analog IC

- Telecommunication IC

- Consumer IC

- Hybrid Analog IC

Discrete Semiconductor

- Transistor

- Small Signal Transistor

- Power Transistor

- Diode

- Small Signal Diode

- Power Diode

- Zener Diode

- Thyristor

- Other Discrete Semiconductor

Optoelectronic Semiconductor

- Light-Emitting Diode

- Light-Emitting Diode Display

- Optocoupler

- Other Optoelectronic Semiconductor

- Injection Laser Diode

- Solar Cell

III-V Semiconductor

- GaAs Digital IC

- GaAs Analog IC

- III-V Discrete Transistor

- Optoelectronic IC

COMPONENTS (Continued)**Passive Component**

- Cable
- Capacitor
- Cathode Ray Tube (CRT)
- Connector
- Inductor
- Potentiometer
- Relay
- Resistor
- Socket
- Splice (Optical)
- Transducer
- Liquid Crystal Display
- Switch

BOARDS AND SUBSYSTEMS

Graphic Board

- Mac-Type Add-On Graphic Board
- IBM-Type Add-On Graphic Board

Imaging Subsystem

- Add-On Memory Board

Sheet Feeder**Controller Board**

- Storage Controller Board
- Printer Controller Board

Magnetic Recording Head**Board-Level Computer****Storage Subsystem****Rigid Disk**

- 3.5 Inch
- 5.25 Inch
- >8 Inch

Flexible Disk

- 3.5 Inch
- 5.25 Inch
- 8 Inch

Tape Subsystem 1/2 Inch

- 1/2-Inch Cartridge
- 1/2-Inch Reel-to-Reel

Tape Subsystem 1/4 Inch**Tape Subsystem 1/8 Inch**

BOARDS AND SUBSYSTEMS (Continued)

Tape Subsystem Helical Scan Recording

DAT

8mm

Optical

CD-ROM

5.25-Inch WORM

>5.25-Inch WORM

3.5-Inch Erasable

5.25-Inch Erasable

>5.25-Inch Erasable

Solid State Subsystem

EQUIPMENT

Data Processing Equipment

Processor

Computer Systems by Product Segment

General-Purpose Computer System

Supercomputer

Corporate Supercomputer

Departmental Supercomputer

Research Supercomputer

Mainframe Computer

Superminicomputer

Minicomputer

Microcomputer

Workstation Computer

Graphic Supercomputer

Superworkstation

Traditional Workstation

Entry-Level Workstation

Workstation Server

Personal Computer

Desktop Personal Computer

Tower Personal Computer

Transportable Personal Computer

Laptop Personal Computer

Laptop A/C

Laptop D/C

Notebook D/C

Hand-Held Personal Computer

EQUIPMENT (Continued)**Special-Purpose Computer System****Computer Systems by Market Segment (Recap)****Multuser System****Corporate Resource****Business Unit****High-End Business Unit****Low-End Business Unit****Large Department****Small Department****Work Group****Single-User System****Single-User Enhanced****Personal Computer****Data Storage Device****Flexible Disk Drive****Total Fixed and/or Removable Media Disk Drive****Sub-3.5-Inch Disk Drive****0 to 30MB****31 to 60MB****61 to 100MB****101 to 200MB****201 to 500MB****501+MB****3.5-Inch Disk Drive****0 to 30MB****31 to 60MB****61 to 100MB****101 to 200MB****201 to 500MB****501 to 1,000MB****1,001+MB****5.25-Inch Disk Drive****0 to 30MB****31 to 60MB****61 to 100MB****101 to 200MB****201 to 500MB****501 to 1,000MB****1,001+MB****8 to 10.5-Inch Disk Drive****0 to 30MB****31 to 60MB**

EQUIPMENT (Continued)

61 to 100MB
101 to 200MB
201 to 500MB
501 to 1,000MB
1,001+MB

14-Inch Disk Drive

0 to 30MB
31 to 60MB
61 to 100MB
101 to 200MB
201 to 500MB
501 to 1,000MB
1,001+MB

Rigid Disk Drives—Fixed Media**Sub-3.5-Inch Disk Drive**

0 to 30MB
31 to 60MB
61 to 100MB
101 to 200MB
201 to 500MB
501+MB

3.5-Inch Disk Drive

0 to 30MB
31 to 60MB
61 to 100MB
101 to 200MB
201 to 500MB
501 to 1,000MB
1,001+MB

5.25-Inch Disk Drive

0 to 30MB
31 to 60MB
61 to 100MB
101 to 200MB
201 to 500MB
501 to 1,000MB
1,001+MB

8 to 10.5-Inch Disk Drive

0 to 30MB
31 to 60MB
61 to 100MB

EQUIPMENT (Continued)

101 to 200MB
201 to 500MB
501 to 1,000MB
1,001+MB

14-Inch Disk Drive

0 to 30MB
31 to 60MB
61 to 100MB
101 to 200MB
201 to 500MB
501 to 1,000MB
1,001+MB

Rigid Disk Drives—Removable Media**Sub-3.5-Inch Disk Drive**

0 to 30MB
31 to 60MB
61 to 100MB
101 to 200MB
201 to 500MB
501+MB

3.5-Inch Disk Drive

0 to 30MB
31 to 60MB
61 to 100MB
101 to 200MB
201 to 500MB
501 to 1,000MB
1,001+MB

5.25-Inch Disk Drive

0 to 30MB
31 to 60MB
61 to 100MB
101 to 200MB
201 to 500MB
501 to 1,000MB
1,001+MB

8 to 10.5-Inch Disk Drive

0 to 30MB
31 to 60MB
61 to 100MB
101 to 200MB
201 to 500MB
501 to 1,000MB
1,001+MB

EQUIPMENT (Continued)**14-Inch Disk Drive**

0 to 30MB
31 to 60MB
61 to 100MB
101 to 200MB
201 to 500MB
501 to 1,000MB
1,001+MB

Rigid Disk Drives—Dual Media**Sub-3.5-Inch Disk Drive**

0 to 30MB
31 to 60MB
61 to 100MB
101 to 200MB
201 to 500MB
501+MB

3.5-Inch Disk Drive

0 to 30MB
31 to 60MB
61 to 100MB
101 to 200MB
201 to 500MB
501 to 1,000MB
1,001+MB

5.25-Inch Disk Drive

0 to 30MB
31 to 60MB
61 to 100MB
101 to 200MB
201 to 500MB
501 to 1,000MB
1,001+MB

8 to 10.5-Inch Disk Drive

0 to 30MB
31 to 60MB
61 to 100MB
101 to 200MB
201 to 500MB
501 to 1,000MB
1,001+MB

EQUIPMENT (Continued)**14-Inch Disk Drive**

0 to 30MB
31 to 60MB
61 to 100MB
101 to 200MB
201 to 500MB
501 to 1,000MB
1,001+MB

Optical Disk**CD-ROM****WORM Optical Disk Drive**

5.25 Inch
8 to 12 Inch
14 Inch

Erasable Optical Disk Drive

2 to 5.25 Inch
8 to 12 Inch

Optical Jukebox**Tape Drive****1/4-Inch Tape Drive**

Start-Stop
Streamer
8 Inch
5.25 Inch
3.5 Inch

1/8-Inch Tape Drive

Cassette
Cartridge

1/2-Inch Tape Drive

1/2-Inch Vacuum Column
1/2-Inch Tension Arm
1/2-Inch Streaming
1/2-Inch Cartridge

Reel-to-Reel Tape Drive Recap**Helical Scan Tape Drive**

VHS
DAT
8mm
Other

EQUIPMENT (Continued)**Input/Output Device****Terminal**

- Alphanumeric (CRT) Terminal
 - Minicomputer-Based Terminal
 - Non-IBM, Protocol-Specific Terminal
 - IBM 3270 Protocol Terminal
 - Host/Vendor-Independent Terminal
 - Processing Terminal
- Graphics Terminal
- Point-of-Sale Terminal
- Funds Transfer Terminal (ATMs)
- Smart Card
- Other Specialized Terminal

Printer**Serial Printer****Impact, Serial, Dot Matrix Printer**

- Less than 9-Wire Serial, Dot Matrix Printer

- 9-Wire Serial, Dot Matrix

- 0 to 180 cps
 - 181 to 250 cps
 - 251 to 399 cps
 - 400+ cps

- 18-Wire Serial, Dot Matrix Printer

- 0 to 180 cps
 - 181 to 250 cps
 - 251 to 399 cps
 - 400+ cps

- 24-Wire Serial, Dot Matrix Printer

- 121 to 180 cps
 - 181 to 250 cps
 - 251 to 399 cps
 - 400+ cps

- Impact, Serial, Fully Formed Printer

- 0 to 30 cps
 - 31+ cps

- Nonimpact, Serial, Direct Thermal Printer

- Nonimpact, Serial, Thermal Transfer Printer

- Wax-Based
 - Sublimation
 - Dry Silver

- Nonimpact, Serial, Ink Jet Printer

EQUIPMENT (Continued)**Line Printer****Impact, Dot Matrix, Line Printer**

0 to 450 lpm

451 to 650 lpm

651 to 1,050 lpm

1,051+ lpm

Impact, Fully Formed, Line Printer

0 to 450 lpm

451 to 650 lpm

651 to 1,050 lpm

1,051 to 1,250 lpm

1,251 to 1,650 lpm

1,651+ lpm

Nonimpact, Direct Thermal Line Printer**Nonimpact, Thermal Transfer Line Printer****Page Printer**

0 to 6 ppm

7 to 10 ppm

11 to 15 ppm

16 to 20 ppm

21 to 30 ppm

31 to 44 ppm

45 to 75 ppm

76 to 150 ppm

151+ ppm

Video Captive Printing

Thermal Transfer

Ink Jet

Photosensitive

Other Input/Output Device**Monitor****Remote Batch, Job-Entry, and Output****Key Entry Equipment****Media-to-Media Data Conversion****Magnetic Ink Recognition (MICR)****Optical Scanning Equipment****Computer Plotters**

Small Format Pen Plotter

Large Format Pen Plotter

Small Format Electrostatic Plotter

Large Format Electrostatic Plotter

EQUIPMENT (Continued)

- Ink Jet Plotter
- Thermal Plotter
- Photosensitive Plotter
- Laser Plotter
- Voice Recognition Computer Device
- Voice Synthesizer
- Mouse
- Keyboard
- Digitizer

Office Equipment

- Copier and Duplicator
 - Personal Copier (up to 12 cpm)
 - Segment 1 (up to 20 cpm)
 - Segment 2 (21 to 30 cpm)
 - Segment 3 (31 to 44 cpm)
 - Segment 4 (45 to 69 cpm)
 - Segment 5 (70 to 90 cpm)
 - Segment 6 (91+ cpm)
- Electronic Calculator (without Alpha Keyboard)
- Dictating, Transcribing Machine
- Electronic Typewriter
- Word Processor
- Banking System
 - Check-Handling System
- Cash Register
- Mailing, Letter-Handling, Addressing Equipment
- Other Office Equipment

Communication

- Telecommunication
 - Premise Telecommunication Equipment
 - Image and Text Communication Equipment
 - Facsimile
 - Video Teleconferencing
 - Telex
 - Videotex
- Data Communication Equipment
 - Modem
 - Statistical Multiplexer
 - Time Division Multiplexer
 - T-1 Multiplexer
 - Front-End Processor
 - Data PBX

EQUIPMENT (Continued)

- Data Network Management System
- DSU/CSU
- Local Area Network
- Private Packet Data Switching
- Public Packet Data Switching
- Premise Switching Equipment
 - PBX Telephone System
 - Key Telephone System
- Call-Processing Equipment
 - Voice Messaging System
 - Interactive Voice Response System
 - Call Accounting System
 - Automatic Call Distributor (ACD)
- Desktop Terminal Equipment
 - Telephone Handsets
 - Integrated Services Digital Network Terminal
 - Answering Machine
- Public Telecommunication Equipment
 - Public Transmission Equipment
 - Multiplexer Equipment
 - Carrier Equipment
 - Microwave Radio Equipment
 - Satellite Communication Equipment
 - Satellite Earth Station Equipment
 - Public Switching Equipment
 - Central Office Switching Equipment
 - Digital Access Cross-Connect System
- Mobile Communication Equipment
 - Mobile Radio System Equipment
 - Mobile Radio Base Station Equipment
 - Cordless Telephony
 - Cellular Telephone
 - Paging Equipment
 - PMR
 - Broadcast Radio Receiver, Transmitter
 - Amateur Radio
 - Citizen's Band: Mobile and Base
 - Portable Radio Receiver, Transmitter
 - Radio Checkout, Monitor, Evaluation, etc.
 - Communication Antenna <890 MHz
 - Microwave Antenna >890 MHz

EQUIPMENT (Continued)**Broadcast and Studio Equipment**

- Audio Equipment
- Video Equipment
- Transmitter, RF Power Amplifier
- Studio Transmitter Link
- Cable TV Equipment
- CCTV
- Broadcast Transmitter Antenna
- Other (Studio, Theater)

Other Communication Equipment

- Intercommunication Equipment Electronic Amplifier
- Light Communications Systems
 - Fiber Optic
 - Other (Laser, Infrared) Light Communications System
- Telemetry System

Industrial Electronic Equipment**Security/Energy Management**

- Alarm System
 - Intrusion Detection Alarm System
 - Fire Detection Alarm System
- Discrete Device, Security/Energy Management
- MPU Load Programmer
- Computerized Energy Control System

Manufacturing System**Semiconductor Production Equipment**

- Lithography
 - Proximity/Contact Lithography
 - Projection Aligned Lithography
 - Steppers (Lithography)
 - Direct-Write E-Beam Lithography
 - Maskmaking E-Beam Lithography
 - X-Ray Lithography

Automatic Photoresist**Etch and Clean Equipment**

- Wet Process Etch and Clean
- Dry Strip Etch and Clean
- Dry Etch and Clean
- Ion Milling Etch and Clean

Deposition Equipment

- Chemical Vapor Deposition
- Physical Vapor Deposition
- Silicon Epitaxy Deposition
- Metalorganic CVD Deposition
- Molecular Beam Epitaxy Deposition

EQUIPMENT (Continued)

Diffusion

Rapid Thermal Processing

Ion Implantation

Medium Current Ion Implantation

High-Current Ion Implantation

High-Voltage Ion Implantation

CD/Wafer Inspection

Other Process Control Semiconductor Fabrication Equipment

Factory Automation Semiconductor Fabrication Equipment

Other Semiconductor Fabrication Equipment

Test Equipment

ATE (Automatic Test Equipment)

Discrete Component Tester

Semiconductor Tester

Interconnect/Bare PCB Tester

In-Circuit PCB Tester

Functional PCB Tester

Combined PCB Tester

Manufacturing EATE N/A

General Test Equipment

Process Control System

Process Control System, Controller

Process Control System, Recorder

Process Control System, Indicator

Process Control System, Auxilliary Station

Process Control System, Nonunified System

Process Control System, Industrial Process

Programmable Machine Tool

Boring Programmable Machine Tool

Drilling Programmable Machine Tool

Grinding Programmable Machine Tool

Horizontal Turning Programmable Machine Tool

Vertical Turning Programmable Machine Tool

Milling Programmable Machine Tool

Machining Center Programmable Machine Tool

Other Cutting Programmable Machine Tool

Punch/Shear/Bend Programmable Machine Tool

Flexible Manufacturing System Programmable Machine Tool

Mechanical Assembly Equipment

Plastic Processing Machinery

EQUIPMENT (Continued)**Robot System**

- Robotic Electronic Assembly
- Robotic Nonelectronic Assembly
- Material-Handling/Loading Robot System
- Painting Robot System
- Spot-Welding Robot System
- Arc-Welding Robot System
- Machining Robot System
- Other Robot System

Automated Material Handling

- Guided Vehicle
- Programmable Conveyor
- Storage/Retrieval Automatic Material-Handling System
- Programmable Monorail
- Warehousing
- Programmable Overhead Crane
- Other Automated Material-Handling Equipment

Instrumentation

- Integrating and Totalizing Meter for Gas
- Counting Device
- Digital Panel Meter
- Analog Panel Meter
- Panel Type Instrument
- Elapsed-Time Meter
- Portable Electronic Measuring Instrument
- Electronic Recording Instrument
- Physical Property Test, Inspection, and Measurement
- Commercial Meteorological and General-Purpose Instrument
- Nuclear Radiation Detection and Monitoring
- Surveying and Drafting Instrument
- Ultrasonic Cleaners, Drill
- Meteorological Instrument
- Geophysical Instrument
- Analytical and Scientific Instrument

Medical Equipment

- Diagnostic Medical Equipment
 - Automatic Blood Analyzer
 - CAT Scanner
 - Digital Radiography
 - Electrocardiograph
 - Electroencephalograph
 - Magnetic Resonance Imaging
 - Respiratory Analysis

EQUIPMENT (Continued)

- Ultrasonic Scanner, Medical
- X-Ray, Medical
- Other Diagnostic Medical Equipment

- Patient-Monitoring
- Prosthetic Medical Equipment
- Hearing Aid

- Surgical Support
- Therapeutic
 - Defibrillator
 - Dialysis, Diathermy
 - Electrosurgical
 - Pacemaker
 - Ultrasonic Generator
 - Other Therapeutic Medical Equipment

- Other Industrial Electronic Equipment
 - Vending Machine
 - Laser System (Excluding Communication)
 - Power Supply
 - Traffic Control
 - Particle Accelerator
 - Industrial and Scientific X-Ray
 - Laboratory and Scientific Apparatus
 - Teaching Machine and Aid
 - Scientific Not Elsewhere Classified

- Consumer Electronic Equipment
 - Audio Consumer
 - Audio Amplifier
 - Compact Disk Player, Music
 - Consumer Radio
 - Stereo (Hi-Fi) Component
 - Stereo Headphone
 - Electronic Musical Instrument
 - Tape Recorder, Consumer

- Video, Consumer
 - Video Camera, Consumer
 - VTRs (VCRs)
 - Video Disk Player
 - Color Television
 - Black-and-White Television
 - HDTV
 - Remote Control
 - LCD Television

EQUIPMENT (Continued)**Personal Electronic**

- Game
- Camera
- Watch
- Clock
- Toy
- Sewing Machine
- Other Personal Electronic

Appliance

- Air Conditioner
- Microwave Oven
- Washer and Dryer
- Refrigerator
- Dishwasher, Disposal
- Range and Oven, Consumer
- Rice Cookers
- Fans
- Heaters
- Vacuum Cleaners
- Food Processors
- Other Consumer Appliance

Other Consumer Electronic

- Automatic Garage Door Opener
- Residential Smoke Alarm
- Consumer Electronic Equipment Not Elsewhere Classified

Military/Aerospace Electronic Equipment**Military Electronic Equipment**

- Radar, Military
- Sonar, Military
- Missile-Weapon
- Space Military Equipment
- Navigation, Military
- Communication, Military
- Electronic Warfare
- Reconnaissance
- Aircraft System
- Military Computer System
- Simulation and Training, Military
- Miscellaneous Military Equipment

Civil Aerospace

- Radar, Civilian
- Civilian Space
- Civil Navigation/Communication
- Civil Aircraft Flight System
- Civil Simulation and Training

EQUIPMENT (Continued)

- Transportation Electronic Equipment
 - Entertainment, Transportation
 - Body Controls
 - Driver Information
 - Powertrain
 - Safety and Convenience

- Other Electronic Equipment

SOFTWARE

- Application Software (See Application Segmentation)

- System Software

- Operating System Software

- Database

- Document Management
 - Data Acquisition and Control
 - Storage Management
 - Database Administration
 - On-Line Transaction Processing

- Development Tools

- Editors

- Language

- Compilers
 - Assemblers
 - Translators
 - Data Translator
 - Query Languages
 - Interactive Languages
 - Fourth-Generation Languages
 - Visual Programming Languages

- Graphic

- Communication Management

- User Interface

- Device Interface

- Protocol

- Security

- Operating Environment

- Operating System

- Proprietary

- IBM/VM/MVS

- DEC VMS

- Other

SOFTWARE (Continued)**Open****UNIX**

OSF1

Sun OS

System V/BSD

Mach

XENIX

Other

Pick

Theos

Other

Real-Time**PC**

DOS

OS/2

Macintosh

Other

Operating Utilities

Peripheral I/O Management

System Subroutine Libraries

Data Center and System Management

Information Resource Management

Information Center

System Utilities

CONSUMABLES

Paper

Form

Label

Toner and Developer

Print Ribbon

Photoreceptor

Print Element

Printwheel

Golf Ball

Thimble

Computer Storage Media

Flexible Disk

Rigid Disk

Computer Storage Tape

Optical Media

Transparency

Other Consumable

SERVICES

- Telecommunication Service
 - Local Telephone Service
 - Long Distance Telephone Service
 - International Telephone Service
 - Leased Circuit
 - Public Data Network Service
 - Enhanced Network Service
 - Mobile Communication Service
 - Cellular Mobile Radio Service
- Hardware Maintenance
 - Contract Maintenance
 - Time and Materials
- Parts
- Software Support
- Customer Training/Education
- Network Support
- Professional
 - Systems Integration
 - Facilities Management

OTHER PRODUCTS

Distribution

The distribution segmentation outlines the path by which a product moves from the manufacturer to the ultimate end user. This list is used by Dataquest to analyze markups, discounts, and buyer behavior.

Distribution

DISTRIBUTION CHANNEL

Direct

Indirect

Value-Added Reseller/Systems Integrator

Original Equipment Manufacturer

Distributor

Dealer

Mass Merchandiser

Manufacturers' Representatives

DISTRIBUTION METHOD

Direct Sales Force

Telemarketing

Mail Order

Company-Owned Store

Geographic Regions

The geographic region segmentation shows the classification scheme used by Dataquest to define the regions of the world. Dataquest classifies regions into four standard categories: North America, Western Europe, Asia/Pacific, and Rest of World.

Geographic Regions

Worldwide



World

North America
Western Europe
Asia/Pacific
Rest of World

North America



North America

United States

East North Central Division

Illinois

Indiana

Michigan

Ohio

Wisconsin

East North Central Other

East South Central Division

Alabama

Kentucky

Mississippi

Tennessee

East South Central Other

Mountain Division

Arizona

Colorado

Idaho

Montana

Nevada

New Mexico

Utah

Wyoming

Mountain Other

Middle Atlantic Division

New Jersey

New York

Pennsylvania

Middle Atlantic Other

New England Division

Connecticut

Maine

Massachusetts

New Hampshire

Rhode Island

Vermont

New England Other

Pacific Division

Alaska

California

Hawaii

Oregon

North America (Continued)

Washington
Pacific Other
South Atlantic Division
Delaware
District of Columbia
Florida
Georgia
Maryland
North Carolina
South Carolina
Virginia
West Virginia
South Atlantic Other
West North Central Division
Iowa
Kansas
Minnesota

Missouri
Nebraska
North Dakota
South Dakota
West North Central Other
West South Central Division
Arkansas
Louisiana
Oklahoma
Texas
West South Central Other
Puerto Rico Division
Puerto Rico
United States Other
Canada
North America Other

Western Europe



Western Europe

- Andorra
- Austria
- Belgium
- Denmark
 - Denmark Mainland
 - Faeroe Islands
 - Denmark Other
- Finland
- France
- Gibraltar
- Greece
- Iceland
- Ireland
- Italy
- Liechtenstein
- Luxembourg
- Malta
- Monaco

- Netherlands
- Norway
- Portugal
- San Marino
- Spain
- Sweden
- Switzerland
- United Kingdom
 - Channel Islands
 - England
 - Isle of Man
 - Northern Ireland
 - Scotland
 - Wales
 - United Kingdom Other
- Vatican City
- West Germany
- Western Europe Other

Asia/Pacific



Asia/Pacific

Japan

Hokkaido

Hokkaido

Hokkaido Other

Kanto

Chiba

Gunma

Ibaraki

Kanagawa

Saitama

Tochigi

Tokyo

Kanto Other

Chubu

Aichi

Fukui

Gifu

Ishikawa

Nagano

Niigata

Shizuoka

Toyama

Yamanashi

Chubu Other

Kinki

Hyogo

Kyoto

Mie

Nara

Osaka

Shiga

Wakayama

Kinki Other

Chugoku

Hiroshima

Okayama

Shimane

Tottori

Yamaguchi

Chugoku Other

Shikoku

Ehime

Kagawa

Asia/Pacific (Continued)

Kochi
Tokushima
Shikoku Other

Kyushu
Fukuoka
Kagoshima
Kumamoto
Miyazaki
Nagasaki
Oita
Okinawa
Saga
Kyushu Other

Tohoku
Akita
Aomori
Fukushima
Iwate
Miyagi
Yamagata
Tohoku Other
Japan Other

East Asia
China
Hong Kong
Macau
North Korea
South Korea
Taiwan
East Asia Other

South Asia
Bangladesh
Burma
India
Maldives
Nepal
Pakistan
Sri Lanka
South Asia Other

Southeast Asia
Brunei

Cambodia
East Timor
Indonesia
Laos
Malaysia
Philippines
Singapore
Thailand
Vietnam
Southeast Asia Other

Australia/New Zealand
Australia
Christmas Island
Cocos Islands
New Zealand
Norfolk Island
Australia/New Zealand Other

Oceania
American Samoa
Canton and Enderbury Islands
Cook Islands
Fiji
French Polynesia
Guam
Johnson Island
Kiribati
Midway Islands
Nauru
New Caledonia
Niue
Pacific Islands
Papua New Guinea
Pitcairn
Samoa
Solomon Islands
Tokelau
Tonga
Tuvalu
Vanuatu
Wake Island
Wallis and Futuna Islands
Oceania Other

Asia/Pacific Other

Rest of World



Rest of World

Africa

Algeria
Angola
Benin
Botswana
British Indian Ocean Territory
Burkina Faso
Burundi
Cameroon
Cape Verde
Central African Republic
Chad
Comoros
Congo
Cote d'Ivoire
Djibouti
Equatorial Guinea
Ethiopia
Gabon
Gambia
Ghana
Guinea

Guinea-Bissau

Kenya
Lesotho
Liberia
Libya
Madagascar
Malawi
Mali
Mauritania
Mauritius
Morocco
Mozambique
Namibia
Niger
Nigeria
Reunion
Rwanda
Sao Tome and Principe
Senegal
Seychelles
Sierra Leone
Somalia
South Africa

Rest of World (Continued)

St. Helena
 Sudan
 Swaziland
 Tanzania
 Togo
 Tunisia
 Uganda
 Western Sahara
 Zaire
 Zambia
 Zimbabwe
 Africa Other

Central America

El Salvador
 Guatemala
 Honduras
 Mexico
 Nicaragua
 Panama
 Central America Other

Caribbean

Anguilla
 Antigua and Barbuda
 Aruba
 Bahamas
 Barbados
 British Virgin Islands
 Cayman Islands
 Cuba
 Dominica
 Dominican Republic
 Grenada
 Guadeloupe
 Haiti
 Jamaica
 Martinique
 Montserrat
 Netherlands Antilles
 Saint Christopher and Nevis
 Saint Lucia
 St. Vincent and the Grenadines
 Trinidad and Tobago
 Turks and Caicos Islands
 United States Virgin Islands
 Caribbean Other

Eastern Europe

Albania
 Bulgaria
 Czechoslovakia
 East Germany
 Hungary
 Poland
 Romania
 Yugoslavia
 Eastern Europe Other

Union of Soviet Socialist Republics**Middle East**

Bahrain
 Cyprus
 Democratic Yemen
 Egypt
 Gaza Strip
 Iran
 Iraq
 Israel
 Jordan
 Kuwait
 Lebanon
 Oman
 Qatar
 Saudi Arabia
 Syria
 Turkey
 United Arab Emirates
 Yemen
 Middle East Other

South America

Argentina
 Bolivia
 Brazil
 Chile
 Colombia
 Ecuador
 Falkland Islands
 French Guyana
 Guyana
 Paraguay
 Peru
 Suriname
 Uruguay
 Venezuela
 South America Other

Rest of World (Continued)**Atlantic****Bermuda****Greenland****St. Pierre and Miquelon****Atlantic Other****Inner Asia****Afghanistan****Bhutan****Mongolia****Inner Asia Other****Rest of World Other**

User Environment

The user environment segmentation is based on the United States Department of Commerce's Standard Industrial Classification (SIC) code scheme. Environments, commonly referred to by Dataquest as vertical markets, are a description of the industry in which a product is used. The environment is further segmented by size, both by revenue and by number of employees. Dataquest commonly uses the user environment segmentation in analyzing product consumption and demographic data.

*User Environment***VERTICAL MARKETS****SIC Code/Description****HOME**

00 HOME

NATURAL RESOURCES AND CONSTRUCTION

01 AGRICULTURAL PRODUCTION—CROPS

011 Cash Grains

0111 Wheat
0112 Rice
0115 Corn
0116 Soybeans
0119 Cash grains, nec

013 Field Crops, Except Cash Grains

0131 Cotton
0132 Tobacco
0133 Sugar cane and sugar beets
0134 Irish potatoes
0139 Field crops, except cash grains, nec

016 Vegetables and Melons

0161 Vegetables and melons

017 Fruits and Tree Nuts

0171 Berry crops
0172 Grapes
0173 Tree nuts
0174 Citrus fruits
0175 Deciduous tree fruits
0179 Fruits and tree nuts, nec

018 Horticultural Specialties

0181 Ornamental nursery products
0182 Food crops grown under cover

019 General Farms, Primarily Crop

0191 General farms, primarily crop

02 AGRICULTURAL PRODUCTION—LIVESTOCK

021 Livestock, Except Dairy and Poultry

0211 Beef cattle feedlots

0212 Beef cattle, except feedlots

0213 Hogs

0214 Sheep and goats

0219 General livestock, nec

024 Dairy Farms

0241 Dairy farms

025 Poultry and Eggs

0251 Broiler, fryer, and roaster chickens

0252 Chicken eggs

0253 Turkeys and turkey eggs

0254 Poultry hatcheries

0259 Poultry and eggs, nec

027 Animal Specialities

0271 Fur-bearing animals and rabbits

0272 Horses and other equines

0273 Animal aquaculture

0279 Animal specialties, nec

029 General Farms, Primarily Animal

0291 General farms, primarily animal

07 AGRICULTURAL SERVICES

071 Soil Preparation Services

0711 Soil preparation services

072 Crop Services

0721 Crop planting and protecting

0722 Crop harvesting

- 0723 Crop preparation services for market
- 0724 Cotton ginning

074 Veterinary Services

- 0741 Veterinary services for livestock
- 0742 Veterinary services, specialties

075 Animal Services, Except Veterinary

- 0752 Livestock services, excluding veterinary
- 0752 Animal specialty services

076 Farm Labor and Management Services

- 0761 Farm labor contractors
- 0762 Farm management services

078 Landscape and Horticultural Services

- 0781 Landscape counseling and planning
- 0782 Lawn and garden services
- 0783 Ornamental shrub and tree services

08 FORESTRY

081 Timber Tracts

- 0811 Timber tracts

083 Forest Products

- 0831 Forest products

085 Forestry Services

- 0851 Forestry services

09 FISHING, HUNTING, AND TRAPPING

091 Commercial Fishing

- 0912 Finfish
- 0913 Shellfish
- 0919 Miscellaneous marine products

092 Fish Hatcheries and Preserves

- 0921 Fish hatcheries and preserves

097 Hunting, Trapping, Game Propagation

0971 Hunting, trapping, game propagation

10 METAL MINING

101 Iron Ores

1011 Iron ores

102 Copper Ores

1021 Copper ores

103 Lead and Zinc Ores

1031 Lead and zinc ores

104 Gold and Silver Ores

1041 Gold ores

1044 Silver ores

106 Ferroalloy Ores, Except Vanadium

1061 Ferroalloy ores, except vanadium

108 Metal Mining Services

1081 Metal mining services

109 Miscellaneous Metal Ores

1094 Uranium-radium-vanadium ores

1099 Metal ores, nec

12 COAL MINING

122 Bituminous Coal and Lignite Mining

1221 Bituminous coal and lignite—surface

1222 Bituminous coal—underground

123 Anthracite Mining

1231 Anthracite mining

124 Coal Mining Services

1241 Coal mining services

13 OIL AND GAS EXTRACTION

131 Crude Petroleum and Natural Gas

1311 Crude petroleum and natural gas

132 Natural Gas Liquids

1321 Natural gas liquids

138 Oil and Gas Field Services

1381 Drilling oil and gas wells

1382 Oil and gas exploration services

1389 Oil and gas field services, nec

14 NONMETALLIC MINERALS, EXCEPT FUELS

141 Dimension Stone

1411 Dimension stone

142 Crushed and Broken Stone

1422 Crushed and broken limestone

1423 Crushed and broken granite

1429 Crushed and broken stone, nec

144 Sand and Gravel

1442 Construction sand and gravel

1446 Industrial sand

145 Clay, Ceramic, and Refractory Minerals

1455 Kaolin and ball clay

1459 Clay and related minerals, nec

147 Chemical and Fertilizer Minerals

1474 Potash, soda, and borate minerals

- 1475 Phosphate rock
- 1479 Chemical and fertilizer mining, nec
- 148 Nonmetallic Minerals Services
 - 1481 Nonmetallic minerals services
- 149 Miscellaneous Nonmetallic Minerals
 - 1499 Miscellaneous nonmetallic minerals
- 15 GENERAL BUILDING CONTRACTORS
 - 152 Residential Building Construction
 - 1521 Single-family housing construction
 - 1522 Residential construction, nec
 - 153 Operative Builders
 - 1531 Operative builders
 - 154 Nonresidential Building Construction
 - 1541 Industrial buildings and warehouses
 - 1542 Nonresidential construction, nec
- 16 HEAVY CONSTRUCTION, EXCEPT BUILDING
 - 161 Highway and Street Construction
 - 1611 Highway and street construction
 - 162 Heavy Construction, Except Highway
 - 1622 Bridge, tunnel, and elevated highway
 - 1623 Water, sewer, and utility lines
 - 1629 Heavy construction, nec
- 17 SPECIAL TRADE CONTRACTORS
 - 171 Plumbing, Heating, Air-Conditioning
 - 1711 Plumbing, heating, air-conditioning
 - 172 Painting and Paperhanging
 - 1721 Painting and paperhanging

- 173 Electrical Work
 - 1731 Electrical work
- 174 Masonry, Stonework, and Plastering
 - 1741 Masonry and other stonework
 - 1742 Plastering, drywall, and insulation
 - 1743 Terrazzo, tile, marble, mosaic work
- 175 Carpentry and Floor Work
 - 1751 Carpentry work
 - 1752 Floor laying and floor work, nec
- 176 Roofing, Siding, and Sheet Metal Work
 - 1761 Roofing, siding, and sheet metal work
- 177 Concrete Work
 - 1771 Concrete work
- 178 Water Well Drilling
 - 1781 Water well drilling
- 179 Miscellaneous Special Trade Contractors
 - 1791 Structural steel erection
 - 1793 Glass and glazing work
 - 1794 Excavation work
 - 1795 Wrecking and demolition work
 - 1796 Installing building equipment, nec
 - 1799 Special trade contractors, nec

PROCESS MANUFACTURING

20 FOOD AND KINDRED PRODUCTS

- 201 Meat Products
 - 2011 Meat packing plants
 - 2013 Sausages and other prepared meats
 - 2015 Poultry slaughtering and processing

202 Dairy Products

- 2021 Creamery butter
- 2022 Cheese, natural and processed
- 2023 Dry, condensed, evaporated products
- 2024 Ice cream and frozen desserts
- 2026 Fluid milk

203 Preserved Fruits and Vegetables

- 2032 Canned specialties
- 2033 Canned fruits and vegetables
- 2034 Dehydrated fruits, vegetables, soups
- 2035 Pickles, sauces, and salad dressings
- 2037 Frozen fruits and vegetables
- 2038 Frozen specialties, nec

204 Grain Mill Products

- 2041 Flour and other grain mill products
- 2043 Cereal breakfast foods
- 2044 Rice milling
- 2045 Prepared flour mixes and doughs
- 2046 Wet corn milling
- 2047 Dog and cat food
- 2048 Prepared feeds, nec

205 Bakery Products

- 2051 Bread, cake, and related products
- 2052 Cookies and crackers
- 2053 Frozen bakery products, except bread

206 Sugar and Confectionery Products

- 2061 Raw cane sugar
- 2062 Cane sugar refining
- 2063 Beet sugar
- 2064 Candy and other confectionery products
- 2066 Chocolate and cocoa products
- 2067 Chewing gum
- 2068 Salted and roasted nuts and seeds

207 Fats and Oils

- 2074 Cottonseed oil mills
- 2075 Soybean oil mills

- 2076 Vegetable oil mills, nec
- 2077 Animal and marine fats and oils
- 2079 Edible fats and oils, nec

208 Beverages

- 2082 Malt beverages
- 2083 Malt
- 2084 Wines, brandy, and brandy spirits
- 2085 Distilled and blended liquors
- 2086 Bottled and canned soft drinks
- 2087 Flavoring extracts and syrups, nec

209 Miscellaneous Food and Kindred Products

- 2091 Canned and cured fish and seafoods
- 2092 Fresh or frozen prepared fish
- 2095 Roasted coffee
- 2096 Potato chips and similar snacks
- 2097 Manufactured ice
- 2098 Macaroni and spaghetti
- 2099 Food preparations, nec

21 TOBACCO PRODUCTS

211 Cigarettes

- 2111 Cigarettes

212 CIGARS

- 2121 Cigars

213 Chewing and Smoking Tobacco

- 2131 Chewing and smoking tobacco

214 Tobacco Stemming and Redrying

- 2141 Tobacco stemming and redrying

22 TEXTILE MILL PRODUCTS

221 Broadwoven Fabric Mills, Cotton

- 2211 Broadwoven fabric mills, cotton

- 222 Broadwoven Fabric Mills, Manmade
 - 2221 Broadwoven fabric mills, manmade
- 223 Broadwoven Fabric Mills, Wool
 - 2231 Broadwoven fabric mills, wool
- 224 Narrow Fabric Mills
 - 2241 Narrow fabric mills
- 225 Knitting Mills
 - 2251 Women's hosiery, except socks
 - 2252 Hosiery, nec
 - 2253 Knit outerwear mills
 - 2254 Knit underwear mills
 - 2257 Warp knit fabric mills
 - 2258 Lace and warp knit fabric mills
 - 2259 Knitting mills, nec
- 226 Textile Finishing, Except Wool
 - 2261 Finishing plants, cotton
 - 2262 Finishing plants, manmade
 - 2269 Finishing plants, nec
- 227 Carpets and Rugs
 - 2273 Carpets and rugs
- 228 Yarn and Thread Mills
 - 2281 Yarn-spinning mills
 - 2282 Throwing and winding mills
 - 2284 Thread mills
- 229 Miscellaneous Textile Goods
 - 2295 Coated fabrics, not rubberized
 - 2296 Tire cord and fabrics
 - 2297 Nonwoven fabrics
 - 2298 Cordage and twine
 - 2299 Textile goods, nec

24 LUMBER WOOD PRODUCTS**241 Logging****2411 Logging****242 Sawmills and Planing Mills****2421 Sawmills and planing mills, general****2426 Hardwood dimension and flooring mills****2429 Special product sawmills, nec****243 Millwork, Plywood, and Structural Members****2431 Millwork****2434 Wood kitchen cabinets****2435 Hardwood veneer and plywood****2436 Softwood veneer and plywood****2439 Structural wood members, nec****244 Wood Containers****2441 Nailed wood boxes and shook****2448 Wood pallets and skids****2449 Wood containers, nec****245 Wood Buildings and Mobile Homes****2451 Mobile homes****2452 Prefabricated wood buildings****249 Miscellaneous Wood Products****2491 Wood preserving****2493 Reconstituted wood products****2499 Wood products, nec****26 PAPER AND ALLIED PRODUCTS****261 Pulp Mills****2611 Pulp mills****262 Paper Mills****2621 Paper mills**

263 Paperboard Mills**2631 Paperboard mills****265 Paperboard Containers and Boxes**

- 2652 Setup paperboard boxes**
- 2653 Corrugated and solid fiber boxes**
- 2655 Fiber cans, drums, and similar products**
- 2656 Sanitary food containers**
- 2657 Folding paperboard boxes**

267 Miscellaneous Converted Paper Products

- 2671 Paper coated and laminated, packaging**
- 2672 Paper coated and laminated, nec**
- 2673 Bags: plastics, laminated, and coated**
- 2674 Bags: uncoated paper and multiwall**
- 2675 Die-cut paper and board**
- 2676 Sanitary paper products**
- 2677 Envelopes**
- 2678 Stationery products**
- 2679 Converted paper products, nec**

27 PRINTING AND PUBLISHING**271 Newspapers****2711 Newspapers****272 Periodicals****2721 Periodicals****273 Books**

- 2731 Book publishing**
- 2732 Book printing**

274 Miscellaneous Publishing**2741 Miscellaneous publishing****275 Commercial Printing**

- 2752 Commercial printing, lithographic**
- 2754 Commercial printing, gravure**
- 2759 Commercial printing, nec**

276 Manifold Business Forms**2761 Manifold business forms****277 Greeting Cards****2771 Greeting cards****278 Blank Books and Bookbinding****2782 Blank books and loose-leaf binders****2789 Bookbinding and related work****279 Printing Trade Services****2791 Typesetting****2796 Platemaking services****28 CHEMICALS ALLIED PRODUCTS****281 Industrial Inorganic Chemicals****2812 Alkalies and chlorine****2813 Industrial gases****2816 Inorganic pigments****2819 Industrial inorganic chemicals, nec****282 Plastics Materials and Synthetics****2821 Plastic materials and resins****2822 Synthetic rubber****2823 Cellulosic manmade fibers****2824 Organic fibers, noncellulose****283 Drugs****2833 Medicinals and botanicals****2834 Pharmaceutical preparations****2835 Diagnostic substances****2836 Biological products except diagnostic****284 Soap, Cleaners, and Toilet Goods****2841 Soap and other detergents****2842 Polishes and sanitation goods****2843 Surface active agents****2844 Toilet preparations**

285 Paints and Allied Products

2851 Paints and allied products

286 Industrial Organic Chemicals

2861 Gum and wood chemicals

2865 Cyclic crudes and intermediates

2869 Industrial organic chemicals, nec

287 Agricultural Chemicals

2873 Nitrogenous fertilizers

2874 Phosphatic fertilizers

2875 Fertilizers, mixing only

2879 Agricultural chemicals, nec

289 Miscellaneous Chemical Products

2891 Adhesives and sealants

2892 Explosives

2893 Printing ink

2895 Carbon black

2899 Chemical preparations, nec

29 PETROLEUM AND COAL PRODUCTS

291 Petroleum Refining

2911 Petroleum refining

295 Asphalt Paving and Roofing Materials

2951 Asphalt paving mixtures and blocks

2952 Asphalt felts and coatings

299 Miscellaneous Petroleum and Coal Products

2992 Lubricating oils and greases

2999 Petroleum and coal products, nec

30 RUBBER AND MISCELLANEOUS PLASTICS PRODUCTS

301 Tires and Inner Tubes

3011 Tires and inner tubes

- 302 Rubber and Plastics Footwear
 - 3021 Rubber and plastics footwear
- 305 Hose, Belting, Gaskets, and Packing
 - 3052 Rubber and plastics hose and belting
 - 3053 Gaskets, packing, and sealing devices
- 306 Fabricated Rubber Products, nec
 - 3061 Mechanical rubber goods
 - 3069 Fabricated rubber products, nec
- 308 Miscellaneous Plastics Products, nec
 - 3081 Unsupported plastics film and sheet
 - 3082 Unsupported plastics profile shapes
 - 3083 Laminated plastics plate and sheet
 - 3084 Plastics pipe
 - 3085 Plastics bottles
 - 3086 Plastics foam products
 - 3087 Custom compound purchased resins
 - 3088 Plastics plumbing fixtures
 - 3089 Plastics products, nec

31 LEATHER AND LEATHER PRODUCTS

- 311 Leather Tanning and Finishing
 - 3111 Leather tanning and finishing
- 313 Footwear Cut Stock
 - 3131 Footwear cut stock
- 314 Footwear, Except Rubber
 - 3142 House slippers
 - 3143 Men's footwear, except athletic
 - 3144 Women's footwear, except athletic
 - 3149 Footwear, except rubber, nec
- 315 Leather Gloves and Mittens
 - 3151 Leather gloves and mittens

316 Luggage

3161 Luggage

317 Handbags and Personal Leather Goods

3171 Women's handbags and purses

3172 Personal leather goods, nec

3179 Leather goods, nec

32 STONE, CLAY, AND GLASS PRODUCTS

321 Flat Glass

3211 Flat glass

322 Glass and Glassware, Pressed or Blown

3221 Glass containers

3229 Pressed and blown glass, nec

323 Products of Purchased Glass

3231 Products of purchased glass

324 Cement, Hydraulic

3241 Cement, hydraulic

325 Structural Clay Products

3251 Brick and structural clay tile

3253 Ceramic wall and floor tile

3255 Clay refractories

3259 Structural clay products, nec

326 Pottery and Related Products

3261 Vitreous plumbing fixtures

3262 Vitreous china table and kitchenware

3263 Semivitreous table and kitchenware

3264 Porcelain electrical supplies

3269 Pottery products, nec

327 Concrete, Gypsum, and Plaster Products

3271 Concrete block and brick

3272 Concrete products, nec

- 3273 Ready-mixed concrete
- 3274 Lime
- 3275 Gypsum products

328 Cut Stone and Stone Products

- 3281 Cut stone and stone products

329 Miscellaneous Nonmetallic Mineral Products

- 3291 Abrasive products
- 3292 Asbestos products
- 3295 Minerals, ground or treated
- 3296 Mineral wool
- 3297 Nonclay refractories
- 3299 Nonmetallic mineral products, nec

33 PRIMARY METAL INDUSTRIES

331 Blast Furnace and Basic Steel Products

- 3312 Blast furnaces and steel mills
- 3313 Electrometallurgical products
- 3315 Steel wire and related products
- 3316 Cold finishing of steel shapes
- 3317 Steel pipe and tubes

332 Iron and Steel Foundries

- 3321 Gray and ductile iron foundries
- 3322 Malleable iron foundries
- 3324 Steel investment foundries
- 3325 Steel foundries, nec

333 Primary Nonferrous Metals

- 3331 Primary copper
- 3334 Primary aluminum
- 3339 Primary nonferrous metals, nec

334 Secondary Nonferrous Metals

- 3341 Secondary nonferrous metals

335 Nonferrous Rolling and Drawing

- 3351 Copper rolling and drawing
- 3353 Aluminum sheet, plate, and foil
- 3354 Aluminum extruded products
- 3355 Aluminum rolling and drawing, nec
- 3356 Nonferrous rolling and drawing, nec
- 3357 Nonferrous wire drawing and insulating

336 Nonferrous Foundries (Castings)

- 3363 Aluminum die-castings
- 3364 Nonferrous die-casting, except aluminum
- 3365 Aluminum foundries
- 3366 Copper foundries
- 3369 Nonferrous foundries, nec

339 Miscellaneous Primary Metal Products

- 3398 Metal heat treating
- 3399 Primary metal products, nec

DISCRETE MANUFACTURING**23 APPAREL AND OTHER TEXTILE PRODUCTS****231 Men's and Boys' Suits and Coats**

- 2311 Men's and boys' suits and coats

232 Men's and Boys' Furnishings

- 2321 Men's and boys' shirts
- 2322 Men's and boys' underwear and nightwear
- 2323 Men's and boys' neckwear
- 2325 Men's and boys' trousers and slacks
- 2326 Men's and boys' work clothing
- 2329 Men's and boys' clothing, nec

233 Women's and Misses' Outerwear

- 2331 Women's and misses' blouses and shirts
- 3535 Women's, juniors', and misses' dresses
- 2337 Women's and misses' suits and coats
- 2339 Women's and misses' outerwear, nec

- 234 Women's and Children's Undergarments
 - 2341 Women's and children's underwear
 - 2342 Bras, girdles, and allied garments
- 235 Hats, Caps, and Millinery
 - 2353 Hats, caps, and millinery
- 236 Girls' and Children's Outerwear
 - 2361 Girls' and children's dresses, blouses
 - 2369 Girls' and children's outerwear, nec
- 237 Fur Goods
 - 2371 Fur goods
- 238 Miscellaneous Apparel and Accessories
 - 2381 Fabric dress and work gloves
 - 2384 Robes and dressing gowns
 - 2385 Waterproof outerwear
 - 2386 Leather and sheep-lined clothing
 - 2387 Apparel belts
 - 2389 Apparel and accessories, nec
- 239 Miscellaneous Fabricated Textile Products
 - 2391 Curtains and draperies
 - 2392 House furnishings, nec
 - 2393 Textile bags
 - 2394 Canvas and related products
 - 2395 Pleating and stitching
 - 2396 Automotive and apparel trimmings
 - 2397 Schiffli machine embroideries
 - 2399 Fabricated textile products, nec

25 FURNITURE AND FIXTURES

- 251 Household Furniture
 - 2511 Wood household furniture
 - 2512 Upholstered household furniture
 - 2514 Metal household furniture
 - 2515 Mattresses and bedsprings
 - 2517 Wood TV and radio cabinets
 - 2519 Household furniture, nec

252 Office Furniture

- 2521 Wood office furniture
- 2522 Office furniture, except wood

253 Public Building and Related Furniture

- 2531 Public building and related furniture

254 Partitions and Fixtures

- 2541 Wood partitions and fixtures
- 2542 Partitions and fixtures, except wood

259 Miscellaneous Furniture and Fixtures

- 2591 Drapery hardware and blinds and shades
- 2599 Furniture and fixtures, nec

34 FABRICATED METAL PRODUCTS

341 Metal Cans and Shipping Containers

- 3411 Metal cans
- 3412 Metal barrels, drums, and pails

342 Cutlery, Hand Tools, and Hardware

- 3421 Cutlery
- 3423 Hand and edge tools, nec
- 3425 Saw blades and handsaws
- 3429 Hardware, nec

343 Plumbing and Heating, Except Electric

- 3431 Metal sanitary ware
- 3432 Plumbing fixture fittings and trim
- 3433 Heating equipment, except electric

344 Fabricated Structural Metal Products

- 3441 Fabricated structural metal
- 3442 Metal doors, sash, and trim
- 3443 Fabricated plate work (boiler shops)
- 3444 Sheet metal work
- 3446 Architectural metal work
- 3448 Prefabricated metal buildings
- 3449 Miscellaneous metal work

345 Screw Machine Products, Bolts, etc.

3451 Screw machine products

3452 Bolts, nuts, rivets, and washers

346 Metal Forgings and Stampings

3462 Iron and steel forgings

3463 Nonferrous forgings

3465 Automotive stampings

3466 Crowns and closures

3469 Metal stampings, nec

347 Metal Services, nec

3471 Plating and polishing

3479 Metal coating and allied services

348 Ordnance and Accessories, nec

3482 Small arms ammunition

3483 Ammunition, except for small arms, nec

3484 Small arms

3489 Ordnance and accessories, nec

349 Miscellaneous Fabricated Metal Products

3491 Industrial valves

3492 Fluid power valves and hose fittings

3493 Steel springs, except wire

3494 Valves and pipe fittings, nec

3495 Wire springs

3496 Miscellaneous fabricated wire products

3497 Metal foil and leaf

3498 Fabricated pipe and fittings

3499 Fabricated metal products, nec

35 INDUSTRIAL MACHINERY AND EQUIPMENT

351 Engines and Turbines

3511 Turbines and turbine generator sets

3519 Internal combustion engines, nec

- 352 Farm and Garden Machinery
 - 3523 Farm machinery and equipment
 - 3524 Lawn and garden equipment
- 353 Construction and Related Machinery
 - 3531 Construction machinery
 - 3532 Mining machinery
 - 3533 Oil and gas field machinery
 - 3534 Elevators and moving stairways
 - 3535 Conveyors and conveying equipment
 - 3536 Hoists, cranes, and monorails
 - 3537 Industrial trucks and tractors
- 354 Metalworking Machinery
 - 3541 Machine tools, metal cutting types
 - 3542 Machine tools, metal forming types
 - 3543 Industrial patterns
 - 3544 Special dies, tools, jigs, and fixtures
 - 3545 Machine tool accessories
 - 3546 Power-driven hand tools
 - 3547 Rolling mill machinery
 - 3548 Welding apparatus
 - 3549 Metalworking machinery, nec
- 355 Special Industry Machinery
 - 3552 Textile machinery
 - 3553 Woodworking machinery
 - 3554 Paper industries machinery
 - 3555 Printing trades machinery
 - 3556 Food products machinery
 - 3559 Special industry machinery, nec
- 356 General Industrial Machinery
 - 3561 Pumps and pumping equipment
 - 3562 Ball and roller bearings
 - 3563 Air and gas compressors
 - 3564 Blowers and fans
 - 3565 Packaging machinery
 - 3566 Speed changers, drives, and gears
 - 3567 Industrial furnaces and ovens
 - 3568 Power transmission equipment, nec
 - 3569 General industrial machinery, nec

357 Computer and Office Equipment

- 3571 Electronic computers
- 3572 Computer storage devices
- 3575 Computer terminals
- 3577 Computer peripheral equipment, nec
- 3578 Calculating and accounting equipment
- 3579 Office machines, nec

358 Refrigeration and Service Machinery

- 3581 Automatic vending machines
- 3582 Commercial laundry equipment
- 3585 Refrigeration and heating equipment
- 3586 Measuring and dispensing pumps
- 3589 Service industry machinery, nec

359 Industrial Machinery, nec

- 3592 Carburetors, pistons, rings, valves
- 3593 Fluid power cylinders and actuators
- 3594 Fluid power pumps and motors
- 3596 Scales and balances, except laboratory
- 3599 Industrial machinery, nec

36 ELECTRONIC AND OTHER ELECTRIC EQUIPMENT

361 Electric Distribution Equipment

- 3612 Transformers, except electronic
- 3613 Switch gear and switchboard apparatus

362 Electrical Industrial Apparatus

- 3621 Motors and generators
- 3624 Carbon and graphite products
- 3625 Relays and industrial controls
- 3629 Electrical industrial apparatus, nec

363 Household Appliances

- 3631 Household cooking equipment
- 3632 Household refrigerators and freezers
- 3633 Household laundry equipment
- 3634 Electric housewares and fans
- 3635 Household vacuum cleaners
- 3639 Household appliances, nec

364 Electric Lighting and Wiring Equipment

- 3641 Electric lamps
- 3643 Current-carrying wiring devices
- 3644 Noncurrent-carrying wiring devices
- 3645 Residential lighting fixtures
- 3646 Commercial lighting fixtures
- 3647 Vehicular lighting equipment
- 3648 Lighting equipment, nec

365 Household Audio and Video Equipment

- 3651 Household audio and video equipment
- 3652 Prerecorded records and tapes

366 Communications Equipment

- 3661 Telephone and telegraph apparatus
- 3663 Radio and TV communications equipment
- 3669 Communications equipment, nec

367 Electronic Components and Accessories

- 3671 Electron tubes
- 3672 Printed circuit boards
- 3674 Semiconductors and related devices
- 3675 Electronic capacitors
- 3676 Electronic resistors
- 3677 Electric coils and transformers
- 3678 Electronic connectors
- 3679 Electronic components, nec

369 Miscellaneous Electrical Equipment and Supplies

- 3691 Storage batteries
- 3692 Primary batteries, dry and wet
- 3694 Engine electrical equipment
- 3695 Magnetic and optical recording media
- 3699 Electrical equipment and supplies, nec

38 INSTRUMENTS AND RELATED PRODUCTS**381 Search and Navigation Equipment**

- 3812 Search and navigation equipment

382 Measuring and Controlling Devices

- 3821 Laboratory apparatus and furniture
- 3822 Environmental controls
- 3823 Process control instruments
- 3824 Fluid meters and counting devices
- 3825 Instruments to measure electricity
- 3826 Analytical instruments
- 3827 Optical instruments and lenses
- 3829 Measuring and controlling devices, nec

384 Medical Instruments and Supplies

- 3841 Surgical and medical instruments
- 3842 Surgical appliances and supplies
- 3843 Dental equipment and supplies
- 3844 X-ray apparatus and tubes
- 3845 Electromedical equipment

385 Ophthalmic Goods

- 3851 Ophthalmic goods

386 Photographic Equipment and Supplies

- 3861 Photographic equipment and supplies

387 Watches, Clocks, Watchcases, and Parts

- 3873 Watches, clocks, watchcases, and parts

39 MISCELLANEOUS MANUFACTURING INDUSTRIES

391 Jewelry, Silverware, and Plated Ware

- 3911 Jewelry, precious metal
- 3914 Silverware and plated ware
- 3915 Jewelers' materials and lapidary work

393 Musical Instruments

- 3931 Musical instruments

394 Toys and Sporting Goods

- 3942 Dolls and stuffed toys
- 3944 Games, toys, and children's vehicles
- 3949 Sporting and athletic goods, nec

395 Pens, Pencils, Office, and Art Supplies

- 3951 Pens and mechanical pencils
- 3952 Lead pencils and art goods
- 3953 Marking devices
- 3955 Carbon paper and inked ribbons

396 Costume Jewelry and Notions

- 3961 Costume jewelry
- 3965 Fasteners, buttons, needles, and pins

399 Miscellaneous Manufactures

- 3991 Brooms and brushes
- 3993 Signs and advertising specialties
- 3995 Burial caskets
- 3996 Hard surface floor coverings, nec
- 3999 Manufacturing industries, nec

37 TRANSPORTATION EQUIPMENT

371 Motor Vehicles and Equipment

- 3711 Motor vehicles and car bodies
- 3713 Truck and bus bodies
- 3714 Motor vehicle parts and accessories
- 3715 Truck trailers
- 3716 Motor homes

372 Aircraft and Parts

- 3721 Aircraft
- 3724 Aircraft engines and engine parts
- 3728 Aircraft parts and equipment, nec

373 Boat and Shipbuilding and Repairing

- 3731 Shipbuilding and repairing
- 3732 Boat building and repairing

374 Railroad Equipment

- 3743 Railroad equipment

375 Motorcycles, Bicycles, and Parts

- 3751 Motorcycles, bicycles, and parts

- 376 Guided Missiles, Space Vehicles, Parts
 - 3761 Guided missiles and space vehicles
 - 3764 Space propulsion and parts
 - 3728 Space vehicle equipment, nec
- 379 Miscellaneous Transportation Equipment
 - 3792 Travel trailers and campers
 - 3795 Tanks and tank components
 - 3799 Transportation equipment, nec

TRANSPORTATION

- 40 RAILROAD TRANSPORTATION
 - 401 Railroads
 - 4011 Railroads, line-haul operating
 - 4013 Switching and terminal services
- 41 LOCAL AND INTERURBAN PASSENGER TRANSIT
 - 411 Local and Suburban Transportation
 - 4111 Local and suburban transit
 - 4119 Local passenger transportation nec
 - 412 Taxicabs
 - 4121 Taxicabs
 - 413 Intercity and Rural Bus Transportation
 - 4131 Intercity and rural bus transportation
 - 414 Bus Charter Service
 - 4141 Local bus charter service
 - 4142 Bus charter service, except local
 - 415 School Buses
 - 4151 School buses

417 Bus Terminal and Service Facilities

4173 Bus terminal and service facilities

42 TRUCKING AND WAREHOUSING

421 Trucking and Courier Services, Except Air

4212 Local trucking, without storage

4213 Trucking, except local

4214 Local trucking with storage

4215 Courier services, except by air

422 Public Warehousing and Storage

4221 Farm product warehousing and storage

4222 Refrigerated warehousing and storage

4225 General warehousing and storage

4226 Special warehousing and storage, nec

423 Trucking Terminal Facilities

4231 Trucking terminal facilities

44 WATER TRANSPORTATION

441 Deep Sea Foreign Transportation of Freight

4412 Deep sea foreign transportation of freight

442 Deep Sea Domestic Transportation of Freight

4424 Deep sea domestic transportation of freight

443 Freight Transportation on the Great Lakes

4432 Freight transportation on the Great Lakes

444 Water Transportation of Freight, nec

4449 Water transportation of freight, nec

448 Water Transportation of Passengers

4481 Deep sea passenger transportation, except ferry

4482 Ferries

4489 Water passenger transportation nec

449 Water Transportation Services

- 4491 Marine cargo handling
- 4492 Towing and tugboat services
- 4493 Marinas
- 4499 Water transportation services, nec

45 TRANSPORTATION BY AIR

451 Air Transportation, Scheduled

- 4512 Air transportation, scheduled
- 4513 Air courier services

452 Air Transportation, Nonscheduled

- 4522 Air transportation, nonscheduled

458 Airports, Flying Fields, and Services

- 4581 Airports, flying fields, and services

46 PIPELINES, EXCEPT NATURAL GAS

461 Pipelines, Except Natural Gas

- 4612 Crude petroleum pipelines
- 4613 Refined petroleum pipelines
- 4619 Pipelines, nec

47 TRANSPORTATION SERVICES

472 Passenger Transportation Arrangement

- 4724 Travel agencies
- 4725 Tour operators
- 4729 Passenger transport arrangement, nec

473 Freight Transportation Arrangement

- 4731 Freight transportation arrangement

474 Rental of Railroad Cars

- 4741 Rental of railroad cars

- 478 Miscellaneous Transportation Services
 - 4783 Packing and crating
 - 4785 Inspection and fixed facilities
 - 4789 Transportation services, nec

COMMUNICATIONS

48 COMMUNICATIONS

- 481 Telephone Communications
 - 4812 Radiotelephone communications
 - 4813 Telephone communications, except radio
- 482 Telegraph and Other Communications
 - 4822 Telegraph and other communications
- 483 Radio and Television Broadcasting
 - 4832 Radio broadcasting stations
 - 4833 Television broadcasting stations
- 484 Cable and Other Pay TV Services
 - 4841 Cable and other pay TV services
- 489 Communications Services, nec
 - 4899 Communications services, nec

UTILITIES

49 ELECTRIC, GAS, AND SANITARY SERVICES

- 491 Electric Services
 - 4911 Electric services
- 492 Gas Production and Distribution
 - 4922 Natural gas transmission
 - 4923 Gas transmission and distribution
 - 4924 Natural gas distribution
 - 4925 Gas production and/or distribution

- 493 Combination Utility Services
 - 4931 Electric and other services combined
 - 4932 Gas and other services combined
 - 4939 Combination utilities, nec
- 494 Water Supply
 - 4941 Water supply
- 495 Sanitary Services
 - 4952 Sewage systems
 - 4953 Refuse systems
 - 4959 Sanitary services, nec
- 496 Steam and Air-Conditioning Supply
 - 4961 Steam and air-conditioning supply
- 497 Irrigation Systems
 - 4971 Irrigation systems

WHOLESALE TRADE, DURABLE GOODS

50 WHOLESALE TRADE—DURABLE GOODS

- 501 Motor Vehicles, Parts, and Supplies
 - 5012 Automobiles and other motor vehicles
 - 5013 Motor vehicle supplies and new parts
 - 5014 Tires and tubes
 - 5015 Motor vehicle parts, used
- 502 Furniture and Home Furnishings
 - 5021 Furniture
 - 5023 Home furnishings
- 503 Lumber and Construction Materials
 - 5031 Lumber, plywood, and millwork
 - 5032 Brick, stone, and related materials
 - 5033 Roofing, siding, and insulation
 - 5039 Construction materials, nec

- 504 Professional and Commercial Equipment
 - 5043 Photographic equipment and supplies
 - 5044 Office equipment
 - 5045 Computers, peripherals and software
 - 5046 Commercial equipment, nec
 - 5047 Medical and hospital equipment
 - 5048 Ophthalmic goods
 - 5049 Professional equipment, nec
- 505 Metals and Minerals, Except Petroleum
 - 5051 Metals service centers and offices
 - 5052 Coal and other minerals and ores
- 506 Electrical Goods
 - 5063 Electrical apparatus and equipment
 - 5064 Electrical appliances, TV, and radios
 - 5065 Electronic parts and equipment
- 507 Hardware, Plumbing, and Heating Equipment
 - 5072 Hardware
 - 5074 Plumbing and hydronic heating supplies
 - 5075 Warm air heating and air-conditioning
 - 5078 Refrigeration equipment and supplies
- 508 Machinery, Equipment, and Supplies
 - 5082 Construction and mining machinery
 - 5083 Farm and garden machinery
 - 5084 Industrial machinery and equipment
 - 5085 Industrial supplies
 - 5087 Service establishment equipment
 - 5088 Transportation equipment and supplies
- 509 Miscellaneous Durable Goods
 - 5091 Sporting and recreational goods
 - 5092 Toys and hobby goods and supplies
 - 5093 Scrap and waste materials
 - 5094 Jewelry and precious stones
 - 5099 Durable goods, nec

WHOLESALE TRADE, NONDURABLE GOODS**51 WHOLESALE TRADE—NONDURABLE GOODS****511 Paper and Paper Products**

- 5111 Printing and writing paper
- 5112 Stationery and office supplies
- 5113 Industrial and personal service paper

512 Drugs, Proprieties, and Sundries

- 5122 Drugs, proprietaries, and sundries

513 Apparel, Piece Goods, and Notions

- 5131 Piece goods and notions
- 5136 Men's and boys' clothing
- 5137 Women's and children's clothing
- 5139 Footwear

514 Groceries and Related Products

- 5141 Groceries, general line
- 5142 Packaged frozen foods
- 5143 Dairy products, except dried or canned
- 5144 Poultry and poultry products
- 5145 Confectionery
- 5146 Fish and seafoods
- 5147 Meats and meat products
- 5148 Fresh fruits and vegetables
- 5149 Groceries and related products, nec

515 Farm-Product Raw Materials

- 5153 Grain and field beans
- 5154 Livestock
- 5159 Farm-product raw materials, nec

516 Chemicals and Allied Products

- 5162 Plastics materials and basic shapes
- 5169 Chemicals and allied products, nec

517 Petroleum and Petroleum Products

- 5171 Petroleum bulk stations and terminals
- 5172 Petroleum products, nec

518 Beer, Wine, and Distilled Beverages**5181 Beer and ale****5182 Wine and distilled beverages****519 Miscellaneous Nondurable Goods****5191 Farm supplies****5192 Books, periodicals, and newspapers****5193 Flowers and florists' supplies****5194 Tobacco and tobacco products****5198 Paints, varnishes, and supplies****5199 Nondurable goods, nec****RETAIL TRADE****52 BUILDING MATERIALS AND GARDEN SUPPLIES****521 Lumber and Other Building Materials****5211 Lumber and other building materials****523 Paint, Glass, and Wallpaper Stores****5231 Paint, glass, and wallpaper stores****525 Hardware Stores****5251 Hardware stores****526 Retail Nurseries and Garden Stores****5261 Retail nurseries and garden stores****527 Mobile Home Dealers****5271 Mobile home dealers****53 GENERAL MERCHANDISE STORES****531 Department Stores****5311 Department stores****533 Variety Stores****5331 Variety stores**

539 Miscellaneous General Merchandise Stores

5399 Miscellaneous general merchandise stores

54 FOOD STORES

541 Grocery Stores

5411 Grocery stores

542 Meat and Fish Markets

5421 Meat and fish markets

543 Fruit and Vegetable Markets

5431 Fruit and vegetable markets

544 Candy, Nut, and Confectionery Stores

5441 Candy, nut, and confectionery stores

545 Dairy Products Stores

5451 Dairy products stores

546 Retail Bakeries

5461 Retail bakeries

549 Miscellaneous Food Stores

5499 Miscellaneous food stores

55 AUTOMOTIVE DEALERS AND SERVICE STATIONS

551 New and Used Car Dealers

5511 New and used car dealers

552 Used Car Dealers

5521 Used car dealers

553 Auto and Home Supply Stores

5531 Auto and home supply stores

554 Gasoline Service Stations

5541 Gasoline service stations

555 Boat Dealers

5551 Boat dealers

556 Recreational Vehicle Dealers

5561 Recreational vehicle dealers

557 Motorcycle Dealers

5571 Motorcycle dealers

559 Automotive Dealers, nec

5599 Automotive dealers, nec

56 APPAREL AND ACCESSORY STORES

561 Men's and Boys' Clothing Stores

5611 Men's and boys' clothing Stores

562 Women's Clothing Stores

5621 Women's clothing stores

563 Women's Accessory and Specialty Stores

5632 Women's accessory and specialty stores

564 Children's and Infants' Wear Stores

5641 Children's and infants' wear stores

565 Family Clothing Stores

5651 Family clothing stores

566 Shoe Stores

5661 Shoe stores

569 Miscellaneous Apparel and Accessory Stores

5699 Miscellaneous apparel and accessory stores

57 FURNITURE AND HOME FURNISHINGS STORES**571 Furniture and Home Furnishings Stores**

- 5712 Furniture stores
- 5713 Floor covering stores
- 5714 Drapery and upholstery stores
- 5719 Miscellaneous home furnishings stores

572 Household Appliance Stores

- 5722 Household appliance stores

573 Radio, Television, and Computer Stores

- 5731 Radio, television, and electronic stores
- 5734 Computer and software stores
- 5735 Record and prerecorded tape stores
- 5736 Musical instrument stores

58 EATING AND DRINKING PLACES**581 Eating and Drinking Places**

- 5812 Eating places
- 5813 Drinking places

59 MISCELLANEOUS RETAIL**591 Drug Stores and Proprietary Stores**

- 5912 Drug stores and proprietary stores

592 Liquor Stores

- 5921 Liquor stores

593 Used Merchandise Stores

- 5932 Used merchandise stores

594 Miscellaneous Shopping Goods Stores

- 5941 Sporting goods and bicycle shops
- 5942 Bookstores
- 5943 Stationery stores
- 5944 Jewelry stores

- 5945 Hobby, toy, and game shops
- 5946 Camera and photographic supply stores
- 5947 Gift, novelty, and souvenir shops
- 5948 Luggage and leather goods stores
- 5949 Sewing, needlework, and piece goods
- 596 Nonstore Retailers
 - 5961 Catalog and mail-order houses
 - 5962 Merchandising machine operators
 - 5963 Direct selling establishments
- 598 Fuel Dealers
 - 5983 Fuel oil dealers
 - 5984 Liquefied petroleum gas dealers
 - 5989 Fuel dealers, nec
- 599 Retail Stores, nec
 - 5992 Florists
 - 5993 Tobacco stores and stands
 - 5994 Newsdealers and newsstands
 - 5995 Optical goods stores
 - 5999 Miscellaneous retail stores, nec

FINANCE

60 DEPOSITORY INSTITUTIONS

- 601 Central Reserve Depositories
 - 6011 Federal reserve banks
 - 6019 Central reserve depository, nec
- 602 Commercial Banks
 - 6021 National commercial banks
 - 6022 State commercial banks
 - 6029 Commercial banks, nec
- 603 Savings Institutions
 - 6035 Federal savings institutions
 - 6036 Savings institutions, except federal

606 Credit Unions

6061 Federal credit unions

6062 State credit unions

608 Foreign Banks, Branches, and Agencies

6081 Foreign banks, branches, and agencies

6082 Foreign trade and international banks

609 Functions Closely Related to Banking

6091 Nondeposit trust facilities

6099 Functions related to deposit banking

61 NONDEPOSITORY INSTITUTIONS

611 Federal and Federal-Sponsored Credit Institutions

6111 Federal and federal-sponsored credit institutions

614 Personal Credit Institutions

6141 Personal credit institutions

615 Business Credit Institutions

6153 Short-term business credit

6159 Miscellaneous business credit institutions

616 Mortgage Bankers and Brokers

6162 Mortgage bankers and correspondents

6163 Loan brokers

62 SECURITY AND COMMODITY BROKERS

621 Security Brokers and Dealers

6211 Security brokers and dealers

622 Commodity Contracts Brokers, Dealers

6221 Commodity contracts brokers, dealers

623 Security and Commodity Exchanges

6231 Security and commodity exchanges

- 628 Security and Commodity Services
 - 6282 Investment advice
 - 6289 Security and commodity services, nec

INSURANCE

63 INSURANCE CARRIERS

- 631 Life Insurance
 - 6311 Life insurance
- 632 Medical Service and Health Insurance
 - 6321 Accident and health insurance
 - 6324 Hospital and medical service plans
- 633 Fire, Marine, and Casualty Insurance
 - 6331 Fire, marine, and casualty insurance
- 635 Surety Insurance
 - 6351 Surety insurance
- 636 Title Insurance
 - 6361 Title insurance
- 637 Pension, Health, and Welfare Funds
 - 6371 Pension, health, and welfare funds
- 639 Insurance Carriers, nec
 - 6399 Insurance carriers, nec

64 INSURANCE AGENTS, BROKERS, AND SERVICE

- 641 Insurance Agents, Brokers, and Service
 - 6411 Insurance agents, brokers, and service

REAL ESTATE

65 REAL ESTATE

- 651 Real Estate Operators and Lessors

- 6512 Nonresidential building operators
- 6513 Apartment building operators
- 6514 Dwelling operators, except apartments
- 6515 Mobile homesite operators
- 6517 Railroad property lessors
- 6519 Real property lessors, nec

653 Real Estate Agents and Managers

- 6531 Real estate agents and managers

654 Title Abstract Offices

- 6541 Title abstract offices

655 Subdividers and Developers

- 6552 Subdividers and developers, nec
- 6553 Cemetery subdividers and developers

67 HOLDING AND OTHER INVESTMENT OFFICES

671 Holding Offices

- 6712 Bank holding companies
- 6719 Holding companies, nec

672 Investment Offices

- 6722 Management investment, open-end
- 6726 Investment offices, nec

673 Trusts

- 6732 Educational, religious, and other trusts
- 6733 Trusts, nec

679 Miscellaneous Investing

- 6792 Oil royalty traders
- 6794 Patent owners and lessors
- 6798 Real estate investment trusts
- 6799 Investors, nec

HOTELS AND OTHER LODGING**70 HOTELS AND OTHER LODGING****701 Hotels and Motels****7011 Hotels and motels****702 Rooming and Boardinghouses****7021 Rooming and boardinghouses****703 Camps and Recreational Vehicle Parks****7032 Sporting and recreational camps****7033 Trailer parks and campsites****704 Membership-Basis Organization Hotels****7041 Membership-basis organization hotels****BUSINESS SERVICES****73 BUSINESS SERVICES****731 Advertising****7311 Advertising agencies****7312 Outdoor advertising services****7313 Radio, television, publisher representatives****7319 Advertising, nec****732 Credit Reporting and Collection****7322 Adjustment and collection services****7323 Credit reporting services****733 Mailing, Reproduction, Stenographic****7331 Direct mail advertising services****7334 Photocopying and duplicating services****7335 Commercial photography****7336 Commercial art and graphic design****7338 Secretarial and court reporting****734 Services to Buildings****7342 Disinfecting and pest control services****7349 Building maintenance services, nec**

735 Miscellaneous Equipment Rental and Leasing

- 7352 Medical equipment rental
- 7353 Heavy construction equipment rental
- 7359 Equipment rental and leasing, nec

736 Personnel Supply Services

- 7361 Employment agencies
- 7363 Help supply services

737 Computer and Data Processing Services

- 7371 Computer programming services
- 7372 Prepackaged software
- 7373 Computer-integrated systems design
- 7374 Data processing and preparation
- 7375 Information retrieval services
- 7376 Computer facilities management
- 7377 Computer rental and leasing
- 7378 Computer maintenance and repair
- 7379 Computer-related services, nec

738 Miscellaneous Business Services

- 7381 Detective and armored car services
- 7382 Security systems services
- 7383 News syndicates
- 7384 Photo finishing laboratories
- 7389 Business services, nec

81 LEGAL SERVICES**811 Legal Services**

- 8111 Legal services

OTHER SERVICES**72 PERSONAL SERVICES****721 Laundry, Cleaning, and Garment Services**

- 7211 Power laundries, family and commercial
- 7212 Garment pressing and cleaners' agents
- 7213 Linen supply

- 7215 Coin-operated laundries and cleaning
- 7216 Dry cleaning plants, except rug
- 7217 Carpet and upholstery cleaning
- 7218 Industrial launderers
- 7219 Laundry and garment services, nec
- 722 Photographic Studios, Portrait
 - 7221 Photographic studios, portrait
- 723 Beauty Shops
 - 7231 Beauty shops
- 724 Barber Shops
 - 7241 Barber shops
- 725 Shop Repair and Shoeshine Parlors
 - 7251 Shoe repair and shoeshine parlors
- 726 Funeral Service and Crematories
 - 7261 Funeral service and crematories
- 729 Miscellaneous Personal Services
 - 7291 Tax return preparation services
 - 7299 Miscellaneous personal services, nec
- 75 AUTO REPAIR, SERVICES, AND PARKING
 - 751 Automotive Rentals, No Drivers
 - 7513 Truck rental and leasing, no drivers
 - 7514 Passenger car rental
 - 7515 Passenger car leasing
 - 7519 Utility trailer rental
 - 752 Automobile Parking
 - 7521 Automobile parking
 - 753 Automotive Repair Shops
 - 7532 Top and body repair and paint shops
 - 7533 Auto exhaust system repair shops

- 7534 Tire retreading and repair shops
- 7536 Automotive glass replacement shops
- 7537 Automotive transmission repair shops
- 7538 General automotive repair shops
- 7539 Automotive repair shops, nec

754 Automotive Services, Except Repair

- 7542 Car washes
- 7549 Automotive services, nec

76 MISCELLANEOUS REPAIR SERVICES

762 Electrical Repair Shops

- 7622 Radio and television repair
- 7623 Refrigeration service and repair
- 7629 Electrical repair shops, nec

763 Watch, Clock, and Jewelry Repair

- 7631 Watch, clock, and jewelry repair

764 Reupholstery and Furniture Repair

- 7641 Reupholstery and furniture repair

769 Miscellaneous Repair Shops

- 7692 Welding repair
- 7694 Armature rewinding shops
- 7699 Repair services, nec

78 MOTION PICTURES

781 Motion Picture Production and Services

- 7812 Motion picture and video production
- 7819 Services allied to motion pictures

782 Motion Picture Distribution and Services

- 7822 Motion picture and tape distribution
- 7829 Motion picture distribution services

783 Motion Picture Theaters

- 7832 Motion picture theaters, except drive-in**
- 7833 Drive-in motion picture theaters**

784 Videotape Rental

- 7841 Videotape rental**

79 AMUSEMENT AND RECREATION SERVICES**791 Dance Studios, Schools, and Halls**

- 7911 Dance studios, schools, and halls**

792 Producers, Orchestras, Entertainers

- 7922 Theatrical producers and services**
- 7929 Entertainers and entertainment groups**

793 Bowling Centers

- 7933 Bowling centers**

794 Commercial Sports

- 7941 Sports clubs, managers, and promoters**
- 7948 Racing, including track operation**

799 Miscellaneous Amusement, Recreation Services

- 7991 Physical fitness centers**
- 7992 Public golf courses**
- 7993 Coin-operated amusement devices**
- 7996 Amusement parks**
- 7997 Membership sports and recreation clubs**
- 7999 Amusement and recreation, nec**

83 SOCIAL SERVICES**832 Individual and Family Services**

- 8322 Individual and family services**

833 Job-Training and Related Services

- 8331 Job-training and related services**

835 Child Day-Care Services

8351 Child day-care services

836 Residential care

8361 Residential care

839 Social Services, nec

8399 Social services, nec

84 MUSEUMS, BOTANICAL, ZOOLOGICAL GARDENS

841 Museums and Art Galleries

8412 Museums and art galleries

842 Botanical and Zoological Gardens

8422 Botanical and zoological gardens

86 MEMBERSHIP ORGANIZATIONS

861 Business Associations

8611 Business associations

862 Professional Organizations

8621 Professional organizations

863 Labor Organizations

8631 Labor organizations

864 Civic and Social Associations

8641 Civic and social associations

865 Political Organizations

8651 Political organizations

866 Religious Organizations

8661 Religious organizations

869 Membership Organizations, nec

8699 Membership organizations, nec

87 ENGINEERING AND MANAGEMENT SERVICES

871 Engineering and Architectural Services

8711 Engineering services

8712 Architectural services

8713 Surveying services

872 Accounting, Auditing, and Bookkeeping

8721 Accounting, auditing, and bookkeeping

873 Research and Testing Services

8731 Commercial physical research

8732 Commercial nonphysical research

8733 Noncommercial research organizations

8734 Testing laboratories

874 Management and Public Relations

8741 Management services

8742 Management consulting services

8743 Public relations services

8744 Facilities support services

8748 Business consulting, nec

88 PRIVATE HOUSEHOLDS

881 Private Households

8811 Private households

89 SERVICES, Nec

899 Services, nec

8999 Services, nec

HEALTH CARE**80 HEALTH SERVICES****801 Offices and Clinics of Medical Doctors**

8011 Offices and clinics of medical doctors

802 Offices and Clinics of Dentists

8021 Offices and clinics of dentists

803 Offices of Osteopathic Physicians

8031 Offices of osteopathic physicians

804 Offices of Other Health Practitioners

8041 Offices and clinics of chiropractors

8042 Offices and clinics of optometrists

8043 Offices and clinics of podiatrists

8049 Offices of health practitioners, nec

805 Nursing and Personal Care Facilities

8051 Skilled nursing care facilities

8052 Intermediate care facilities

8059 Nursing and personal care, nec

806 Hospitals

8062 General medical and surgical hospitals

8063 Psychiatric hospitals

8069 Specialty hospitals except psychiatric

807 Medical and Dental Laboratories

8071 Medical laboratories

8072 Dental laboratories

808 Home Health Care Services

8082 Home health care services

809 Health and Allied Services, nec

8092 Kidney dialysis centers

8093 Specialty outpatient clinics, nec

8099 Health and allied services, nec

EDUCATION**82 EDUCATIONAL SERVICES****821 Elementary and Secondary Schools****8211 Elementary and secondary schools****822 Colleges and Universities****8221 Colleges and universities****8222 Junior colleges****823 Libraries****8231 Libraries****824 Vocational Schools****8243 Data processing schools****8244 Business and secretarial schools****8249 Vocational schools, nec****829 Schools and Educational Services, nec****8299 Schools and educational services, nec****GOVERNMENT****91 EXECUTIVE, LEGISLATIVE, AND GENERAL****911 Executive Offices****9111 Executive offices****912 Legislative Bodies****9121 Legislative bodies****913 Executive and Legislative Combined****9131 Executive and legislative combined****919 General Government, nec****9199 General government, nec**

92 JUSTICE, PUBLIC ORDER, AND SAFETY**921 Courts****9211 Courts****922 Public Order and Safety****9221 Police protection****9222 Legal counsel and prosecution****9223 Correctional institutions****9224 Fire protection****9229 Public order and safety, nec****93 FINANCE, TAXATION, AND MONETARY POLICY****931 Finance, Taxation, and Monetary Policy****9311 Finance, taxation, and monetary policy****94 ADMINISTRATION OF HUMAN RESOURCES****941 Administration of Educational Programs****9411 Administration of educational programs****943 Administration of Public Health Programs****9431 Administration of public health programs****944 Administration of Social and Manpower Programs****9441 Administration of social and manpower programs****945 Administration of Veterans' Affairs****9451 Administration of veterans' affairs****95 ENVIRONMENTAL QUALITY AND HOUSING****951 Environmental Quality****9511 Air, water, and solid waste management****9512 Land, mineral, wildlife conservation**

953 Housing and Urban Development

9531 Housing programs

9532 Urban and community development

96 ADMINISTRATION OF ECONOMIC PROGRAMS

961 Administration of General Economic Programs

9611 Administration of general economic programs

962 Regulation, Administration of Transportation

9621 Regulation, administration of transportation

963 Regulation, Administration of Utilities

9631 Regulation, administration of utilities

964 Regulation of Agricultural Marketing

9641 Regulation of agricultural marketing

965 Regulation of Miscellaneous Commercial Sectors

9651 Regulation of miscellaneous commercial sectors

966 Space Research and Technology

9661 Space research and technology

97 NATIONAL SECURITY AND INTERNATIONAL AFFAIRS

971 National Security

9711 National security

972 International Affairs

9721 International affairs

SIZE**REVENUE (millions of U.S. dollars)**

0 to 99.9
100 to 499.9
500 to 999.9
1 to 4.9
5 to 9.9
10 to 49.9
50+

EMPLOYEES

0 to 9
10 to 19
20 to 49
50 to 99
100 to 249
250 to 499
500 to 999
1,000+

Applications

The application segmentation defines the use to which a product is put. Dataquest uses this segmentation to analyze both application products (such as software) and the actual functions that a product performs.

Applications

GENERAL PRODUCTIVITY

Document/Media Creation and Editing
Word Processing

Graphics

Chart and Map Generation
Image Generation
Graphic Design Art
Presentation Graphics

Publishing Process

Animation
Author/Editor
Color Prepress
Color Separation
Computer to Plate
Computer to Press
Data Capture
Data Creation
Desktop Video
Document Management
Form Generation

Electronic Publishing

Book Publishing
Corporate Publishing
Database Publishing
Desktop Publishing
Educational Publishing
Multilingual Publishing
Network Publishing
Newspaper Publishing
On-Demand Publishing
Professional Publishing
Periodical Publishing
Technical Publishing

Font Generation

Image Management
Image Processing
In-Plant Printing/Publishing

Multimedia

Page Description
Languages/Software

Proof Printing

Text Capture

Communications

Electronic Mail
Spreadsheet/Decision Support/Executive
Information Systems
Spreadsheet
General-Purpose Simulation
Modeling
Forecasting

Learning/Education/Training

Instructional
Computer Training/Assisted
Instruction
Educational Simulation
Learning

Project Management

Calendaring
Scheduling
Ticketing
Library Management

Time Management

Professional Time Report
Other Project Management

Application Utilities

Integrated
Database Management

ORGANIZATIONAL

Management and Administration

Accounting
Accounts Payable
Checkbook Management
Accounts Receivable
Billing/Invoicing
General Ledger
Payroll
Tax Accounting

Applications (Continued)

Capital Assets	CAD/CAM/CAE
Fixed Assets	Mechanical
Lease Accounting	Documentation/Drafting
Human Resource/Personnel	Conceptual Design
Management	Functional Design
Benefits Administration	Analysis
Employment Administration	Manufacturing
Finance	AEC (Architectural,
Financial Planning	Engineering, and Construction)
Budgeting	Architectural
Cost Accounting	Civil
Investment/Portfolio Management	Facility Design
Cash/Money Management	Process Plant Design
Deposit/Loan Management	Mapping
Treasury/Stocks/Bonds	Cartography
Purchasing	Geographical Information
Contract Administration	Systems
Vendor Management	Raster Systems
Planning	Electronic Design Automation
Business Planning	Electronic Computer-Aided
Strategic Planning	Engineering
Command, Control,	Design Entry
Communications, and	Digital Design Verification
Intelligence	Analog Design
Facilities Management	Verification
Facility Planning	Test Automation
Facility Simulation	IC Layout and Verification
Equipment/Maintenance	PCB Layout
Management	Software Development
Property/Real Estate Management	Computer-Aided Software
Facility Security Management	Engineering
Sales and Marketing	Artificial Intelligence
Marketing Research	General Software Development
Advertising and Promotional	Earth Resources
Public Relations	Seismic Analysis
Order Entry/Processing	Geophysical Seismic Imaging
Customer/Prospect Management	Oil Field Services
Credit Management	Remote Sensing
Sales Support/Administration	Technical Data Analysis
Research, Engineering, and Development	General Scientific
Design Automation	Scientific Research/Analysis
	Scientific Visualization
	Scientific Simulation

Applications (Continued)

Chemistry
Crystallography
Modeling
Analysis

Simulation
Laboratory
Diagnostic
Medical Diagnostic Imaging
Therapeutic

Manufacturing and Distribution
Distribution Planning and Control
Transportation/Fleet Management
Route Planning
Dispatching
Warehouse Management
Automated Warehousing and
Materials Handling
Inventory and Distribution
Management and Control

Manufacturing Planning and Control
Material/Process Requirements
Planning, Production and Process
Management
Shop Floor Planning and Control

CAM/Automated Assembly
Manufacturing Engineering Tools

Other Planning and Control
Simulation
Robot Programming and
Simulation
Quality Assurance
Detection and Tracking
Fault Management/Adaptive
Control

Test and Measurement
Inspection
Machine Vision

Other
Real-Time Data Acquisition and
Control
Building Automation
Traffic Control
Railroad Control
Power Grid Control
Water Quality and Sewage Control
Atmospheric Monitoring
Entertainment

**INDUSTRY SPECIFIC (See Vertical
Markets Segmentation)**

Demographics

The demographic segmentation concentrates on vital statistics within the United States based on education, government, population, households, businesses, and the work force.

Demographics

EDUCATION

Number of U.S. Schools

Elementary
Public
Private

Public
Private
Public and Private

Secondary
Public
Private

Two-Year Institution
Two-Year College
Public
Private
Public and Private

Other
Public
Private

Expenditure

Higher Education

Public Elementary and Secondary
Instruction
Support Service
Noninstruction

Four-Year Institution
University
Public
Private
Public and Private

Higher Education
Public Institution
Instruction
Research
Public Service
Academic Support
Student Service
Institutional Support
Operation and Maintenance
Scholarship and Fellowship
Other

Two-Year Institution
Two-Year College
Public
Private
Public and Private

Student Enrollment

Elementary
Public
Private

Private Institution
Instruction
Research
Public Service
Academic Support
Student Service
Institutional Support
Operation and Maintenance
Scholarship and Fellowship
Other

Secondary
Public
Private

Higher Education

Four-Year Institution
University

Student Enrollment (Continued)

Microcomputers in Education	Public Elementary and
Ratio of Students to Microcomputers	Secondary Schools
Public Schools	School Year
Installed Base of Microcomputers	

GOVERNMENT

Federal
Industry Sector
State
Industry Sector
Local
Industry Sector

HOUSEHOLD

Number of Households	Income Distribution
Average Household Size	Regional Distribution

POPULATION

Total Population by Year	Population by Census Region
Distribution by Age	and Census Division
Metropolitan Statistical Areas	Population by Census Region,
Largest Cities	Census Division, and State
Civilian Population by Labor Force Status	

BUSINESS

Establishment	Enterprise by Sales Volume
Establishment by Industry Sector	Enterprise by Region
Establishment by Employment-Size Class	
Establishment by Sales Volume	Desktop Device
Establishment by Region	Number of Devices by Year
	Installed Base by Desktop Device
Enterprise	Penetration of Desktop Devices
Enterprise by Industry Sector	Available Market
Enterprise by Employment-Size Class	

WORK FORCE

Employment/Detailed Occupational Category	White-Collar Workers
Major Occupational Category	Job Classification
Employment Growth by	Industry Sector
Industry (Historical)	Percent of Total Workers
Employment Growth by	
Industry (Projected)	

Research Items

The research items segmentation is a listing of general terms used by Dataquest to organize, describe, and analyze data for technology markets and industries. A typical use of research items is to describe market data in terms of shipments, retirements, and installed base.

Research Items

Alliance	Joint Venture
Analysis	Lease
Average Selling Price	Lease/Rental Conversions
Average Volume	Manufacturer
Average Usage	Market
Balance of Trade	Market Share
Bit	Markup
Byte	Merchant
Capital Spending	Net Additions
Captive	New Placement Demand
Compound Growth Rate	Production
Consumption	Replacement Demand
Conversion Revenue	Research and Development
Cost	Residual Value
Economy	Retirements
European Economic Community	Revenue
Export	Shipment
Forecast	Statistic
Gross Lease Additions	Subsidiary
I/O Ratio	Technology
Import	Tie Ratio
Industry	Total Available Market
Installed Base	Unit
Intellectual Property	Useful Life
Internal Transfer	Year Average Population
Inventory	

Glossary

The glossary is a comprehensive dictionary of the terms featured in WorldBase Segmentation.

III-V discrete semiconductor. 1: A semiconductor device with low noise, low power, and high power in the range of one-half watt to one watt. 2: A device of gate structures based on D-MESFET and E/D MESFET devices.

A

ACD. See automatic call distributor.

AEC. See architecture, engineering, and construction.

AGVS. See automatic guided vehicle system.

AI. See artificial intelligence.

AMH. See automated materials handling.

AP. See accounts payable.

AR. See accounts receivable.

ASIC. See application-specific integrated circuit.

ASP. See average selling price.

AS/RS. See automated storage/retrieval system.

ATE. See automatic test equipment.

ATM. See automatic teller machine.

AWS. See automatic warehousing system.

academic support. College expenditures that includes expenditures for support services that are an integral part of the institution's primary missions of instruction, research, or public service. Includes expenditures for libraries, galleries, audio/visual services, academic computing support, auxiliary support, academic administration, personnel development, and course and curriculum development.

accounting. The system of recording and summarizing business and financial transactions and analyzing, verifying, and reporting results.

accounts payable (AP). A software application that supports the accounts payable function, which is the amount owed by a business to its suppliers and other regular trading partners.

accounts receivable (AR). A software application that supports the accounts receivable function, which is the amount owed to a business by its customers.

adaptive control. 1: The property of a control system that allows it autonomously to maintain a manufacturing or process environment within predetermined control limits. 2: A device with parameters that adjust automatically to compensate for changes in the dynamics of the process to be controlled.

add-on graphics board. A graphics board that is added to a basic computer to enhance the computer's current graphic capability.

add-on graphics board, Mac-type. Personal computers that were designed to run applications exclusively through a graphic-user interface (i.e., windows, menus, and icons). Mac-type systems include Apple's Macintosh series (512E, Plus, SE, and II), Atari's ST series (524 and 1024), and Commodore's Amiga. This term also refers to peripherals intended for use in Mac-type systems.

add-on memory board. A printed circuit board populated with memory integrated circuits (IC), usually DRAMs or SRAMs, that plugs into personal computers via connectors on the central processing unit bus. These boards are used to increase central processing unit storage capacity.

aerial. See antenna.

air conditioner. 1: An apparatus for controlling the temperature and humidity of air. 2: A broad field including numerous processes, among which are refrigeration, heating, ventilation and humidification, and electronic air filtering.

aircraft system (military). Electronic power devices used in airplanes to perform functions like flight control, communication and navigation, lighting computer system (including air data, mission and fire control), engine control, instrumentation, integral targeting system, associated test system, and integrated system.

alarm system. A system designed to warn of an intrusion, a fire, or other undesired occurrence. Alarm systems have three functions in common: detection, control, and annunciation signaling.

alliance. An association to further the common interest of members.

alphanumeric CRT controller. A character set of both letters and numbers that is used to control electron beams, which are used to present data in a visual form.

alphanumeric CRT terminal. A display terminal that provides character information to a human operator.

amateur radio. A radio used for two-way radio communications by private individuals.

analog. 1: Representation of data by means of continuously variable physical quantities, such as voltage, current, or frequency. 2: A circuit or system in which the output signals bear a continuous relationship to the input signals. 3: A representation of an event in another form, e.g., the representation of voice sounds as continuously variable electrical signals.

analog design verification. A software application that includes analog simulation, analog synthesis, monte carlo analysis, worst-case analysis, and parametric plotting.

analog panel meter. 1: An electrical switchboard or instrument board with continuously variable electrical signals known as analog signals. 2: A mounting plate for the controls and/or other parts of equipment, utilizing analog signals.

analysis. Separation of a whole into its parts; proof of a mathematical proposition by assuming the result and deducing a valid statement by a series of reversible steps. Includes mass properties, kinematic and dynamic mechanism analysis, structural, thermal, composite, fluids, and vibration analysis. Finite element and finite difference are common analysis technologies used.

analytical and scientific instrument. Instruments used to measure, access, control, and monitor objects and systems.

animation. A software application to present either continuous pictures or images or to present them in rapid succession.

answering machine. A device, hooked to a telephone, that can record and play messages as they pass through a phone when a user is unable to pick up the telephone.

antenna. 1: A conductor or system of conductors that serves to radiate or intercept energy in the form of electromagnetic waves. 2: A device for transmitting or receiving radio waves. Also called aerial.

appliance. 1: An instrument or device designed for a specific household or office purpose. 2: A piece of equipment for adapting a tool or machine to a special purpose.

application. The system or problem to which electronic equipment is put and the procedures that relate to its execution. Application can either be of a computational or data processing type.

application software. A software program or set of programs designed for a specific application, such as inventory control or linear programming.

application-specific integrated circuit (ASIC). An integrated circuit (IC) designed or adapted for a specific application. Can be of either bipolar or MOS technology.

application utilities. Enhances application software providing basic conveniences.

architectural. Computer-aided tools intended for use in design and drafting of facilities' architectural aspects.

architecture, engineering, and construction (AEC). The use of computer-aided tools by architects, contractors, plant engineers, civil engineers, and others associated with these disciplines to aid in designing and managing buildings, industrial plants, ships, and other types of nondiscrete entities.

arc-welding robot systems. A system in which a robot carries an arc-welding torch to produce welds.

argon. An inert gas extensively used in discharge tubes.

artificial intelligence (AI). The ability of a machine to perform functions normally associated with human intelligence, such as learning, adapting, reasoning, self-correcting, and improving automatically.

assembly. 1: A group of subassemblies and/or parts that, when put together, create a major subdivision of the final product. When two or more components or subassemblies are put together by the application of labor and machine hours, it is called an assembly. An assembly may be an end product or a component for a higher-level assembly. 2: The semiconductor manufacturing steps of mounting a die in a package, bonding the pads to the package leads, and sealing the package.

atmospheric monitoring. A real-time software application that monitors weather-related data from satellites and other monitoring sites around the world.

atmospheric/purge cylinder gas. A specialty gas; a cylinder gas for purging certain processing systems and equipment when manufacturers are concerned about possible back contamination of the house lines.

audio amplifier. A device that uses transistors or electron tubes to obtain voltage, current, or power to amplify sound.

audio equipment. Amplifiers, preamplifiers, control consoles, and other equipment used in studio, broadcast, and home environments. Equipment interprets frequencies corresponding to audible sound waves.

automated assembly system. The assembly of parts into subassemblies and/or complete assemblies using programmable equipment that may include robots. In discrete piece manufacturing, this system includes spot- and arc-welding and adhesives. In electronics, this system includes component placement and printed board component insertion. Usually, these automated assembly systems include sensors.

automated guided vehicle system (AGVS). An unmanned mobile transporter under programmable control that moves materials and tooling throughout a factory and/or warehouse. Includes towing vehicles, pallet trucks, light-load transporters, unit-load transporters, and self-loading and unloading vehicles.

automated materials handling (AMH). The automated handling of discrete or bulk materials in manufacturing systems. Materials handling includes the movement, storage, identification, and controlling of materials.

automated storage/retrieval system (AS/RS). All computer hardware, software, and equipment that are used together for mechanical hoists and carriages and that interface with racks and bins for automatic storage and retrieval of unit loads, pallets, and individual parts. An AS/RS moves materials from inventory to operations and back to inventory, frequently for work-in-process inventory.

automatic blood analyzer. Equipment used to analyze, detect, and decipher blood types and blood-related diseases.

automatic call distributor (ACD). A computer-based system located at a customer's premises that: (1) provides real-time monitoring of a telephone system's work load; (2) distributes calls to the agent who is idle longest; and (3) uses a queuing or waiting list assignment that holds the callers in queue until an agent is available, averages the random flow of traffic, and decreases peak traffic load. An ACD also contains features known as gates or agent split groups that provide functional divisions within the routing scheme and allow calls to be directed to a specific group or agent.

automatic garage door opener. A device used to signal a mechanism placed within a garage to open and close the door automatically.

automatic photoresist processing equipment (colloquial: track). Equipment used to dispense and process photoresist material onto a wafer. Track equipment, as this equipment is usually called, includes wafer clean/bake, wafer prime, wafer coat/bake, wafer develop/bake, and resist stabilization equipment.

automatic teller machine (ATM). A machine used by financial institutions and designed to perform many of the banking functions performed by human tellers. (See also **funds transfer terminal**.)

automatic test equipment (ATE). Computer-controlled equipment that inspects electronic devices, both active and passive. ATE usually includes analytical and statistical data-reduction capabilities and can document test results by display, hard copy, and electronic storage. ATE can perform printed circuit board (PCB) inspection by mechanical, electrical, and visual means in an automatic, programmable mode. ATE includes both bare boards and boards that have been loaded with electronic devices. In the latter case, diagnostic capabilities are included as a part of the system definition if they are part of the equipment.

automatic warehousing system (AWS). A dedicated storage and retrieval system that is used not on the factory floor but in a warehouse that may or may not be located within a manufacturing facility. An AWS includes a control system and associated material-handling equipment and structures, but excludes the building unless it is a structural part of the automated system. The control system includes both hardware and software.

automation. The system or technique of the production process that minimizes human intervention. Self-controlled machines are used to accomplish human tasks or tasks not able to be accomplished by human intervention.

average selling price (ASP). The average price of a product, inclusive of any discounts. A factory average selling price is the revenue received per unit by the factory for a product, and end-user average selling price is the price paid for a product inclusive of distribution channel markups.

average usage. The average number of units of product used.

average volume. The average number of units of product produced.

awarded contract. A binding agreement granted to a specific company.

B

BiCMOS. Bipolar complementary metal oxide semiconductor. See **BiMOS**.

BiMOS (BiCMOS). Bipolar metal oxide semiconductor (MOS). An integrated circuit (IC) manufactured with both bipolar and MOS processes that yields a component with the benefits of both technologies.

balance of trade. The difference between the value of a country's exports and imports of tangible goods over a given period, usually one year.

banking system. Systems used in the banking/finance industries to facilitate the transmission of funds to improve efficiencies. Systems include: payroll allocation and deduction; demand deposit accounting; savings, both regular and certificates of deposit; and loan processes.

benefits administration. A software application with the primary function of administering and aiding in managing an organization's employee benefits.

bipolar application-specific IC. See **application-specific integrated circuit**.

bipolar cell-based IC. See **cell-based integrated circuit**.

bipolar custom IC. See **custom integrated circuit**.

bipolar digital. 1: A semiconductor technology employing two junction transistors. 2: A device in which both majority and minority carriers are present. A transistor structure with electrical properties determined within the silicon material.

bipolar digital logic. See **logic circuit**.

bipolar FPGA. See **field-programmable gate array**.

bipolar gate array. See **gate array**.

bipolar memory. See **memory**.

bipolar nonvolatile memory. See **nonvolatile memory**.

bipolar PLA. See **programmable logic array**.

bipolar PLD. See programmable logic device.

bipolar PMD. See programmable multilevel logic device.

bipolar standard logic. See standard logic.

bit. Abbreviation for binary digit. A unit of information equal to one binary decision, or the designation of one or two possible and equally likely values or states of anything used to store or convey information. Four bits represent one decimal digit.

black-and-white television. Television in which the reproduced picture is displayed in shades of gray between black and white. Also known as monochrome television.

board-level computer. A single, or multiple, board-level CPU that is sold individually or incorporated in systems-level products (boxes). Typically, these are products that are not considered complete packaged systems. Prices range from the low hundreds to the low thousands. Frequently, software is bundled with the board for a specific application.

body control. Electronic equipment used to direct, manage, or guide an automobile or truck. Examples include electronic suspension, cruise control, intermittent wipers, load-sensitive braking, antitheft devices, electronic steering, and electronic mufflers.

book publishing. A system with the main purpose/use of printing books or written or printed literary works.

boring programmable machine tool. A factory tool designed to machine internal work such as cylinders, holes, and castings.

broadcast. 1: The transmission of packets on a contention bus where all data is heard by all devices on the channel and is selected by each device through address-recognition techniques. 2: To send messages or to communicate simultaneously with many or all points on a circuit. 3: The transmission of radio frequencies from a source to all devices that are capable of receiving the signal. Microwave transmission is one method of transmission. 4: Radio or television transmission intended for public reception.

broadcast and studio equipment. Equipment used to make information public by means of radio or television.

broadcast transmitter antenna. An electronic device for generating and amplifying a radio-frequency carrier for transmission through space from an antenna.

bubble memory. A storage medium that allows information to be stored on magnetically charged crystal chips. Bubble memories can hold data without electricity to sustain them; blackouts, changes in current, and static charges do not affect them. Such memories process material 75 times as fast as disk memories. However, bubble memory processors cannot handle multi-programming, i.e., performing parallel operations with several programs.

budgeting. A software application with the primary function of supporting the budgeting process, i.e., future resource planning.

building automation. A software application with the primary functions of managing the operations of a facility, including fire detection, energy management, and alarm systems. Large manufacturing plants and skyscrapers use real-time computers to control and monitor conditions. This may include fire detection and control systems; security systems; clocking, documenting, and energy management for heating, ventilation, and air conditioning.

bulk gas. A discrete delivery of gas in a liquid state.

bundled distribution and warehouse package. Hardware and/or software modules used for planning and control of warehouse or product distribution systems. These packages are not available separately from the total warehouse or distribution system.

business. A commercial or mercantile activity pursued as a means of livelihood.

business unit computer system. An information system with price ranging from \$250,001 to \$1.75 million. Performance speed ranges from 0.75 to 13.00 mips (IBM, scalar) and 1.5 to 80.0 mflops (Cray, Vector). Main memory capacity ranges from 4 to 256MB, with minimum

trending to 8MB. Disk capacity ranges from 120MB to 28GB. CPU bit width ranges from 32 to 64 bits. Physical environment typically consists of both environmentally controlled rooms and ordinary offices and typically requires support by full-time professional computer systems support staff with fewer than 10 members. Number of concurrent users ranges from 65 to 150. Examples of models are the IBM 4381-21, IBM 9370-90, IBM System/38 models 300 through 700, and DEC VAX 8800 and 8650. This classification is further segmented into high-end and low-end business computer systems. See respective definitions.

byte. 1: A single group of bits processed together in parallel. 2: The number of bits that a computer processes. 3: The smallest addressable unit of main storage in a computer system.

C

C³I. See command, control, communications, and intelligence.

CAD. See computer-aided design, drawing, or drafting.

CAE (computer-aided engineering). See electronic computer-aided engineering.

CAM. See computer-aided manufacturing.

CASE. See computer-aided software engineering.

CAT scanner. A computerized axial tomography—frequently shortened to CT. A reconstructive imaging technique employing an X-ray source and array of detectors rotated about the body of the patient. The host computer calculates an image based on the appearance of a thin volume in the plane of the rotation.

CBIC. See cell-based integrated circuit.

CCME. See computational chemistry/molecular engineering.

CCTV. See closed circuit television.

CD. See critical dimension.

CD-ROM (compact disk read-only memory). See CD-ROM disk drive.

CD-ROM disk drive. All CD-ROM disks are 4.7 inches (12cm) in diameter, have a 1.6-micro-inch-pitch single-spiral track, and have 2,048 data bytes per sector.

CD/wafer inspection. Critical dimension (CD) refers to the line, element, or feature that must be manufactured and controlled to stringent specifications. Wafer inspection refers to the inspection of a patterned wafer for process defects by visual image process techniques.

CGR. See compound growth rate.

CISC MPU. See complex-instruction-set computing, microprocessor.

CMOS. See complementary MOS.

CODEC. See coder/decoder circuit.

CPU. See central processing unit.

CRT. See cathode ray tube.

CVD. See chemical vapor deposition.

cable. An assembly of one or more conductors within an enveloping protective sheath, constructed to permit the use of the conductors singly or in groups.

cable television equipment. All equipment for both the head and subscriber ends of a cable television system.

cache. A fast, small memory (typically SRAM) used to enhance CPU performance, separate from main processor memory.

cache controller. A device that governs the area of a system that stores only data the system may need in the immediate future.

calculator. A device capable of performing logical and arithmetical digital operations of any kind.

calendar. A software application that behaves as a calendar, allowing people to schedule meetings and other events. It also usually acts as a tickler file, reminding people of upcoming commitments.

call accounting. The equipment and service that records the calling activity of a centrex, PBX, or key telephone system in order to generate reports that support telephone cost allocation and other telephone management information needs.

call processing equipment. Call processing equipment provides additional functions and capabilities beyond traditional call processing. This classification includes add-on products such as voice-messaging systems, call accounting systems, and automatic call distributors.

camera. A lightproof box used to record images on film with electronics assisting with automated features of focus, light, distance, timers, etc.

capacitor. A commonly used component that stores electrical energy. It is sometimes referred to as a condenser.

capital assets. A software application that assists a company in managing its capital assets, which are any physical property or right that is owned and has a money value.

capital spending. The purchase of a capital asset or an asset that is needed to create a product and is acquired with the intention of keeping (rather than being resold.) Changes in aggregate spending on plant and equipment are a major factor in determining the course of the business cycle.

captive production. The sale of a good to a division within the manufacturing company.

carrier equipment. A cable-based system that provides transmission of multiple signals over a common metallic or fiber-optic cable. This segment includes subscriber carrier systems, trunk carrier systems, Basic Exchange Transmission Radio (BETR) systems, and repeaters.

cartography. A mapping software application used for map production and/or resource management. May contain a spatially indexed data structure.

cartridge tape drive. A tape drive that uses a special metal and plastic protective device for the tape, which can be used for 1/4-inch or 1/2-inch tape products.

cash register. A device that automatically registers visibly the amount of a specific sale. Many are used to trace inventory and other product information through the sale of the product.

cassette tape drive. A tape drive that uses a small container of tape similar to that used for commercial audio recording purposes.

cathode ray tube (CRT). A television-like display screen which, on receipt of information bearing electronic signals, produces a visual display of the information (text, graphics). The CRT consists of a vacuum tube display in which a beam of electrons is projected onto a fluorescent surface of phosphors, producing a visual display. Used in most computer display terminals. Also referred to as video display terminal/visual display tube (VDT).

cell-based integrated circuit (CBIC). An integrated circuit (IC) design methodology that allows creation of ICs or blocks within ICs from predefined cells that are placed and then routed together to create logic functions. Can be either bipolar or MOS technology process.

cellular telephone. Mobile radio equipment associated with cellular radio services.

central office switching equipment. Equipment comprised of electronic systems that interconnect local telephone lines (loops) and connect local telephone lines to long distance trunk lines. This definition includes equipment used by both the Bell operating companies and the independent telephone companies.

central processing unit (CPU). A microprocessor or microcontroller. Central processing unit of a computer.

chart and map generation. A graphic software application that is designed specifically for charts and predefined maps.

check-handling system. A system to improve the speed and accuracy of check-handling processes within the banking and finance industries.

chemical vapor deposition (CVD). A formation of a stable compound on a heated substrate by thermal reaction or decomposition of gaseous compounds. A process that chemically isolates and deposits a specific material on a wafer. CVD equipment includes atmospheric-pressure CVD (APCVD), plasma-enhanced CVD (PECVD), and low-pressure CVD (LPCVD) techniques. Historically, the CVD market was split into APCVD, PECVD, and LPCVD technologies, because each had its own applications. Now, because of advanced reactors that are crossing application boundaries, it makes more sense to divide the market by film application rather than by equipment technology.

chemistry. 1: A science dealing with the composition structure and properties of substances and with the transformations that they undergo. 2: Chemical processes and phenomena.

circuit. 1: The electrical path between two or more points. 2: A means of two-way communication between two points, consisting of a sending and a receiving channel or a combined sending and receiving channel. 3: A transmission path between two or more points.

citizens band: mobile and base. A frequency band allocated for private individual radio service (460 to 470 megahertz or 26.965 to 27.405 megahertz).

civil aerospace. Civilian travel in space.

civil aircraft flight system. Same as military aircraft, except related to civilian activity.

civil application. A software application used for civil engineering tasks, typically for design and drafting of sites for buildings, streets, highways, bridges, dams, airports, and utilities.

civil navigation/communication. Same as military navigation/communications, except related to civilian activity.

civil radar. Same as military radar, except related to civilian activity.

civil simulation and training. Same as military simulation and training, except related to civilian activity.

civilian space. Equipment used by civilians to explore the earth's atmosphere. Includes satellites, reconnaissance equipment, and ground control equipment.

clock. 1: A reference source of timing information for equipment or for a system. 2: Electronic timing device. (See also watch.)

closed circuit television (CCTV). A television system where television signals are not broadcast, but are transmitted over a closed circuit and received by interconnected receivers.

coder/decoder circuit. An integrated circuit that codes a voice signal into a binary waveform or decodes a binary waveform into a voice signal. Such circuits now are used in digital communications applications.

college. A postsecondary school that offers general or liberal arts education, usually leading to an associate, bachelor's, master's, doctor's, or first professional degree. Junior colleges and community colleges are included under this category.

color prepress. A process that converts visual material to electronic signals.

color separation. A process of photographing object using three filters, each corresponding in color and light transmission to one of the additive primary colors; analogous to seeing.

color television. An electronic system that transmits signals to a visual image that can be viewed in an array of colors on a screen.

combined elementary and secondary school. A school that encompasses instruction at both the elementary and secondary levels. Examples of combined elementary and secondary school grade spans would be 1 through 12 or 5 through 12.

combined PCB tester. Testing equipment that combines functional and in-circuit test techniques and capabilities that result in a test strategy to suit any given board's production history and fault spectrum to achieve the highest board fault coverage at the lowest cost.

command, control, communications, and intelligence (C³I). Systems used to display the ongoing status of tactical or strategic operations in dynamic scenarios for rapid decision making.

commercial antenna. See antenna.

commercial meteorological and general-purpose instrument. Equipment used to obtain quantitative information about the weather.

communication management. The organization of stations, peripherals, and devices capable of intercommunications but not necessarily on the same channel.

communication peripheral. An interface device for machine-to-machine connections.

communication. 1: The transmission of information from one point or person or equipment to another. 2: The sensing of a measurement signal or phenomenon for display, recording, amplification, transmission, computing, or processing into useful information. 3: A software application with primary functions including file transfer, terminal emulation, and remote operation of another computer.

compact disk player. 1: A recording and playback system used to play recorded music by means of a small plastic optical disk similar to multiplex stereo broadcast and reception. Each wall of the record groove carries a single channel of information. 2: A recording device in which the sounds are mechanically impressed onto a disk.

comparator. A type of amplifier that produces a logic output (1 or 0) based on comparison of an input voltage with a fixed reference voltage. A widely used form of linear integrated circuit.

compiler. 1: An automatic coding system in a computer that generates and assembles a program from instructions written by a programmer. 2: Computer routine that translates symbolic instructions to machine instructions and replaces certain items with subroutines. 3: A computer language system consisting of various subroutines that have been evaluated and computed into one routine handled by a computer. 4: Software used to convert application programs from computer language to machine language.

complementary MOS. A semiconductor technology that uses both P-channel and N-channel transistors on the same silicon substrate to gain the primary advantages of very low power and high noise immunity.

complex-instruction-set computing (CISC) microprocessor. The number of instructions a microprocessor runs for a specific application. Known as a general-purpose processor.

component. An assembly, device, or piece of equipment that is part of a larger assembly or system.

compound growth rate (CGR). The average rate of growth compounded over a specified period. (The formula used to calculate CGR is value in final period divided by the value in initial period raised to the power of 1 divided by the number of periods.)

computational chemistry/molecular engineering (CCME). The use of computers to model molecular structures, to predict physical properties of molecules, and to design new compounds for specific purposes.

computer-aided design (CAD). Systems that function as tools to expedite mechanical and electronic design. Most CAD systems consist of a graphics computer terminal linked with a computer and a software package with features that aid in design and drafting, keep track of parts, run simulations, and provide illustrated parts or circuit diagrams. Programs complete the layout, geometric transformations, projections, rotations, magnifications, and interval (cross-section) views of a part and its relationship with other parts.

computer-aided manufacturing (CAM). The use of computers to program, direct, and control production equipment in the fabrication of manufactured items.

computer-aided software engineering (CASE). A combination of artificial intelligence and structured programming techniques used to aid in the development of large software programs.

computerized energy control system. A system with the resources for producing heat, electricity, and/or power and the capability of running on computers.

computer plotter. A visual display on which a dependent variable is graphed by an automatically controlled pen or pencil as a function of one or more variables.

computer storage media. The substance upon which data is stored electronically. Media may be flexible disks, rigid disks, tape, or optical disks.

computer storage tape media. Long, thin, flexible tape appropriate for digital magnetic recording and storage of computer data.

computer system. A combination of hardware, software, firmware, and peripheral components that has been assembled to satisfy a particular goal or set of goals.

computer to plate. A process that merges type and black-and-white images and combines the functions of typesetting, camera photography, and contact platemaking.

conceptual design. A software application that includes styling, industrial design, and other design applications emphasizing visualization, esthetic, and ergonomic considerations.

connector. A device used to join or fasten transistors, establishing a relationship between active and passive devices.

consortium. An international business agreement; an association or society.

consumable. Material that is capable of being consumed.

consumer electronics. The application of electronics in consumer equipment.

consumer integrated circuit (IC). An analog circuit that meets specific consumer end-market applications. These circuits are dedicated to specific applications, such as audio or radio, and would not be used for general purpose.

consumer N.E.C. Consumer equipment not elsewhere classified.

consumer radio. A device used by the general public for communication by electromagnetic waves transmitted through space to produce sound.

consumption. The markets' purchase and use of goods and services, including lease or rental.

contract administration. The management of agreements between a company and its vendors and/or customers.

contract maintenance service. Ongoing repair services based on agreed upon terms and conditions (such as hours of coverage and level of services) as stipulated in a written agreement between the customer and the service provider.

controller. A device or group of devices that serve to govern, in some predetermined manner, the electric power delivered to the apparatus to which it is connected.

controller board. A printed circuit board that provides programmable logic that controls the sequence of operations of the functional stages of a peripheral device.

conversion revenue. The revenue generated by changing from an equipment rental contract to a purchase or lease contract.

copier. A reproduction device designed to produce replicas of hard-copy originals. Copiers may use either an analog or a digital scanning system.

coprocessor. A logic device that operates in association with a microprocessor to enhance system performance. Coprocessors are not capable of independent operation.

cordless telephony. The transmission of speech or other information via radio, enabling two persons to converse over almost any distance without a connecting cord to a base unit.

corporate publishing. Publishing that supports the main business of an organization or person; printed and published products are produced in the normal course of operations, but not as a primary source of revenue.

corporate resource computer system. An information system that typically processes large numbers of on-line transactions and batch jobs currently. Price range is \$1.75 million and up. Performance speed is 2.2 mips and up (IBM, Scalar) and 80 mflops and up (Cray, Vector). Minimum main memory capacity is 8MB. Minimum disk capacity is 500MB. CPU bit width is 32 to 64 bits. Physical environment typically consists of raised floors, air conditioning, air filtration,

and other environmental controls; the system typically is supported by full-time, professional computer systems support staff with more than 10 members. Number of concurrent users is 251 and up. Examples of models are the IBM 3090, IBM 4381 models 22 through 24, Unisys 1100/90, and Amdahl 5890 and 5990.

corporate supercomputer. An information system priced at more than \$2 million. Performance speed is more than 200 mflops; current upper limit is approximately 2 Gflops. Currently used mainly for batch applications, but the trend is toward interactive use. Optimized for very heavy, numerically intensive applications. Requires special environmental controls and cooling techniques.

cost. The cost to produce a product.

cost accounting. A software application that supports a branch of accounting that is concerned with the collection, determination, and control of costs, particularly those costs associated with producing products or services.

counter/timer circuit. A circuit that receives uniform pulses representing units to be counted and provides a voltage proportional to their frequency.

counting device. A device register, or location in computer storage for storing numbers or number representations in a manner that permits these numbers to be increased or decreased by the value of another number or to be changed or reset to zero or to an arbitrary value.

critical dimension (CD). Refers to a line, element, or feature that must be manufactured and controlled to very tight specifications.

custom/contract programming (CD). Programming services that include applications development and software systems conversions.

customer management. A software application used to maintain lists of purchasers of a company's products and services.

customer training/education service. Activities designed to instruct customers in the installation, usage, programming, management, and maintenance of hardware, software, and networking products.

custom integrated circuit. A handcrafted integrated circuit that has been constructed for a specific use for the specific needs of a customer by designing at the polygon level. Can be either bipolar or MOS technology process.

D

DAT. See digital audio tape.

DBMS. See database management system.

DCE. See data communications equipment.

DMA. See direct memory access.

DOS. See disk operating system.

DP. See data processing.

DRAM. See dynamic random-access memory.

DRAM controller. A device that governs DRAMs in some predetermined manner. Holds a process or condition at a desired level or status as determined by comparison of the actual value with the desired value.

DSMPU. See DSP microprocessor.

DSP. See digital signal processing.

DSP microprocessor (DSMPU). A general-purpose, programmable integrated circuit similar to a conventional microprocessor. Its distinction is characterized by the efficiency with which it implements repetitive multiplications and additions required by DSP algorithms.

DSU/CSU. See data service unit (DSU) and channel service unit (CSU).

daisywheel. See printwheel.

data acquisition and control. See real-time data acquisition and control.

database. The entire body of data that has to do with one or more related subjects. Typically, it consists of a collection of data files stored in a computer system.

database administration. A control program function that provides access to data sets, enforcement of data storage conventions, and regulation of the use of input/output devices.

database management system (DBMS). 1: A software application that provides storage and maintenance functions to the field level for data stored in sequential, hierarchical, relational, or object format. Example of DBMS products include FOCUS (hierarchical), Ingres (relational), and GBASE (object oriented.) 2: A systematic approach to storing, updating, and retrieving information stored as data items, commonly referred to as data files.

database publishing. A system with the main purpose/use of printing the ordered collections of data.

data capture. A process that takes possession or control of information.

data center. A program designed primarily to acquire, analyze, process, store, retrieve, and disseminate one or more types of data.

data center construction/relocation services. Services in which a vendor performs or manages the contracting of site management services including the design and building of a customer's data center and/or the relocation and installation of customer's equipment.

data communications equipment (DCE). Equipment used for transmitting data between points of origin and reception. It includes products such as modems, statistical multiplexers, T-1 multiplexers, front-end processors, data PBX systems, data network management systems, DSU/CSU equipment, local area networks, and private packet data switching equipment.

data converter. Any device for changing alternating current to direct current or direct current to alternating current.

data creation. The process of producing or originating information.

data network management system. A product or device that diagnoses, isolates, reinstates, or accumulates information for network components or provides reports and analysis of network performance.

data PBX system. A digital private branch exchange system that allows terminals to switch and contend for computer ports by providing RS-232-C connections. This system does not provide voice switching. Data PBX base units and add-on channels also are included in this classification.

data processing (DP). 1: The preparation of source media that contain data or basic elements of information and the handling of such data according to precise rules of procedures to accomplish such operations as classifying, sorting, calculating, summarizing, recording, and computing. 2: The handling of information in a sequence of reasonable operations.

data service unit (DSU) and channel service unit (CSU). These provide an interface to digital services, such as the AT&T Dataphone Digital Service (DDS).

data storage device. A product designed to hold data until needed. Storage devices are rated by technology (rigid, flexible, and optical disk drives and tape drives), physical size in inches (diameter for rigid and flexible disk drives, width for tape drives), and capacity in bytes. (See also disk drive, tape drive.)

data translation. 1: A device that transforms computer information to data from one language to another language without affecting the meaning. 2: To change one binary word to another.

dealer. 1: A product reseller with storefront selling to end users. A dealer's primary added value is distribution; secondary added values are service, training, and support. 2: Independent businesses selling products under contract to one or more vendors.

defibrillator. An electronic instrument used for stopping spontaneous, local contraction of muscle fibers (fibrillation) during a heart attack by applying controlled electronic pulses to the heart muscles.

departmental supercomputer. An information system with price ranging from \$100,000 to \$2 million. Performance speed ranges from 10 to 200 mflops. Acquired usually by users who need heavy number-crunching capabilities but cannot

afford a full-scale supercomputer costing more than \$2 million. This computer is a vector processor and thus uses a fundamentally different execution technique from scalar processors, such as mainframe computers and superminicomputers, and is typically configured as a uniprocessor rather than a parallel processor. Typical environment is a "cool room" with a raised floor and/or an ordinary office with no special environmental controls. Number of concurrent users typically ranges from 10 to 50. Examples of models are the Alliant FX/4, Convex C130, and Floating Point M64.

deposition. The layering of various chemicals on a wafer. The introduction of dopant to wafers in high-temperature furnaces, chemical vapor deposition (CVD), sputtering, and implant.

deposit/loan management. A software application that facilitates the control and earning potential of loans and deposits.

desktop personal computer. A personal computer intended for use on the user's desktop or work surface and not designed to be readily moved from place to place. The desktop computer includes all PCs except tower personal computers, transportable personal computers, laptop personal computers, and hand-held personal computers.

desktop publishing. 1: Generalized computing platforms used to perform electronic publishing tasks as one of many applications. 2: The formatting of text and graphics into publishing-quality printed output.

desktop terminal equipment. Telecommunications equipment that is actually used on a desktop. This segment includes products such as single-line telephone equipment and integrated voice/data workstations.

desktop video. Tabletop televised images.

detection and tracking. A real-time application that detects, tracks, and controls various systems and processes. (See also *data acquisition and control*.)

device interface. 1: An electronic device that enables one piece of gear to communicate or control another. 2: A device linking two incompatible devices. 3: A card containing circuits that allow a device to interface with other devices.

diagnostic. 1: Pertaining to the detection, discovery, and further isolation of a malfunction or mistake. 2: Medical applications that aid in diagnosing medical problems. X-rays, CAT scans, and ultrasound are examples.

dialysis. The separation of substances in solutions by means of their unequal diffusion through semipermeable membranes.

diathermy. The therapeutic use of high-frequency electric currents to produce localized heat in body tissue.

dictating/transcribing machine. A device that automatically records human speech onto a form of magnetic tape that can be played back for transcription.

die. One semiconductor chip.

diffusion. 1: A process used in the production of semiconductors that introduces minute amounts of impurities into a substrate material. 2: The movement of particles away from regions of higher concentration, caused by the random thermal motion of atoms and molecules, to areas of lower concentration.

digital. 1: Pertaining to the class of devices or circuits in which the output varies in discrete steps. 2: Circuitry in which data-carrying signals are restricted to either of two voltage levels, corresponding to logic 1 or 0. 3: A circuit that operates like a switch that can make logical decisions.

digital access cross connect system. A system that is composed of multiplex equipment that allows digital lines to be remapped electronically at a different digital level.

digital audio tape (DAT). A 4mm helical scan device (i.e., data recorded at an angle rather than parallel).

digital design verification. A software application that includes logic simulation, timing analysis, hardware accelerators, hardware modelers, electrical rule checking, mixed signal simulation, transmission line simulators, and signal noise analysis.

digital panel meter. 1: An electrical switchboard or instrument board using continuously variable electrical signals known as analog signals. 2: Digital signals versus analog signals.

digital radiography. Equipment used for electronically detecting the arrival of X-ray photons transmitted through or emitted from an object on various media and converting the sensed analog signals to digital signals.

digital signal processing (DSP). High-speed general-purpose arithmetic unit used for performing complex mathematical operations such as Fourier transforms.

digitizer. A device used for the creation of digital information from alphanumeric or line artwork. More sophisticated digitizers are able to reproduce halftone images and usually are termed scanners.

diode. 1: A semiconductor element that favors unidirectional current flow; a pn junction. 2: A device used to permit current flow in one direction in a circuit and to inhibit current flow in the other direction. In computers, these diodes are primarily germanium or silicon crystals. 3: A vacuum tube with two active electrodes.

direct channel. The sale of equipment directly to the end user by a vendor which contributes significant development or integration to the product. Can be either sales of complete systems by turn-key vendors or sales of components of systems sold by individual suppliers.

direct memory access (DMA). A computer feature, set up by the central processing unit (CPU), that provides for high-speed direct data transfer from a peripheral device to the computer memory or to magnetic disk or tape storage units. This feature releases CPU time to perform other procedures. Most DMA devices employ a CPU-cycle-stealing approach.

direct sales force. A sales method that employs a sales force to move a product through the distribution channel by making face-to-face contact with the consumer. Also referred to as outside sales.

direct thermal printer. A printer that uses point-specific heat and heat-sensitive substrate that change color when exposed to heat.

direct write e-beam lithography. A process used in semiconductor manufacturing where electron beams are used to create heat that will expose selected areas of a wafer's surface to create a specific design. (See also **lithography**.)

disaster recovery and contingency planning. The planning and implementation of data backup and recovery procedures for a customer's site, based on an analysis of the critical business functions.

discrete component testers. Equipment used to test, check, and monitor the functionality of devices that have a single functional capability per package. These devices include resistors, capacitors, diodes, transistors, and other devices not classified as integrated circuits.

discrete device, security energy management. A circuit complete in itself used in the security and energy industries.

discrete semiconductor. 1: An individual circuit component complete in itself, such as a diode or transistor. 2: Automatic controls that are used principally as components for air conditioning, refrigeration, and heating. Packaged semiconductor devices having a single function. This may mean that one or several functioning circuits are in the package.

dishwasher/disposal. A machine or apparatus used to wash dishes with jets of water. A device used to reduce waste food by grinding.

disk. 1: A high-capacity random-access storage device. Data are written onto and read from the surfaces of a stack of revolving record-like disks coated with magnetic material. May be fixed or removable. Capacity ranges from 0 to more than 1,000 pages per disk. Referred to as a rigid disk. (See also **random access**.) 2: A random-access magnetic storage medium in the form of a platter or thin wafer.

disk drive. The unit that controls the reading and writing of disks.

diskette (floppy disk). A record-like disk of magnetically coated Mylar enclosed in a protective square envelope. Holds from 80 to 250 pages of text. Unlike cassettes or cartridges, which store text serially, diskettes are formatted in a random manner, which allows speedier access.

disk, magnetic. A storage device containing information recorded on the magnetizable surface of a rotating disk; a magnetic disk storage system is an array of such devices, with associated reading and writing heads mounted on movable arms.

disk operating system (DOS). 1: A computer system based on the Intel 80XX or 80XXX architecture that use the MS/PC-DOS operating system software. 2: An operating system that uses magnetic disks as its primary on-line storage.

dispatching. A software application used to execute the route plans of multiple vehicles, taking real-world events into account.

display peripheral. A component used to address the man-to-machine interface, whereas communication peripherals are used to address the machine-to-machine interface.

distribution. 1: The act or process of distributing. 2: To place or position so as to properly apportion over or throughout an area.

distribution channel. The route taken either by the title to a product or by the physical product itself as it moves from the producer to the ultimate end user. The channel for a product extends to the last consumer who buys it without requesting any significant change in its form. When form is altered and another product emerges, a new channel is started.

distribution method. A method employed to move a product through the distribution channel. It is separate and distinct from the channel in that many channel members may employ the same distribution method.

distributor. A wholesaler that sells to other resellers or end users. The distributor's primary function is to stock the inventory of multiple manufacturers to provide volume buying power to its end users.

documentation/drafting. A software application that includes detail drafting, schematics, technical illustration, charts, specifications, bills of materials, training manuals, and other drawing- or drafting-related applications. International standards such as ISO, DIN, or ANSI can be used to define text and feature format.

document management. The process of collecting and organizing documents. In electronics, it usually refers to the development of material specifying inputs, operations, and outputs of a computer system.

dopant. Atoms of materials such as phosphorus, boron, or arsenic that are diffused into silicon to create resistors, diodes, and transistors.

dot matrix printer. A printer that produces images through selective printing of dots chosen from a dot array matrix. Dot matrix printers are segmented by the number of wires in the print-head: 9, 18, or 24 and greater wires. Within these technology segments, additional segments are defined by speed of printing, expressed in characters per second (cps).

drilling programmable machine tool. A machine tool fitted with an end-cutting tool that is rotated with sufficient power to create a hole or enlarge an existing hole in solid material.

drive. See tape drive.

drive, disk cartridge. A disk drive using a removable one- or two-platter cartridge; may incorporate a fixed-media capability.

drive, fixed Winchester. A disk drive that includes all fixed-media Winchester drives.

driver information. An electronic device used to assist the driver by giving visual or audio signals for direction. Examples include digital gauges, service reminders, digital clocks, trip/navigation computers, heads-up display, audio annunciator, CRT display, miles-to-empty indicator, and shift indicator.

dry etch. A technique in semiconductor manufacturing used to produce more uniform pattern definition on wafers without immersing the wafer in a liquid bath. Techniques include plasma etching and reactive etching through which gases and energetic ions remove unwanted chemical material from a wafer.

dry silver. A photosensitive film or paper coated with silver compounds that is developed by the application of heat. Popularized by 3M.

dry strip etch. A process in semiconductor manufacturing for removing photoresist from the wafer after etching. Dry strip comprises barrel strippers and single-wafer strippers.

dual-disk drive. A system that provides for the use of two disks at the same time.

duplicator. 1: A term used to refer to a small offset printing press that uses a planographic image carrier. These presses are usually capable of one or two colors and are smaller, easier to operate, but less sturdy than offset presses. 2: Machine that requires a special master to make copies but produces copies at a higher rate of speed than copying. It differs from printing in that a direct-image master is used that yields a limited number of copies. Offset, spirit, gelatin hecto, stencil, and sometimes xerography are considered duplicating processes. (See also copier.)

dynamic random-access memory (DRAM). A random-access memory device that must be electrically refreshed frequently (many times each second) to maintain information storage. DRAM densities can range from 16K, with approximately 16,000 bits, to 16Mb, with approximately 16 million bits.

E

8mm tape cartridge. A class of tape drives using 8mm cartridges; used in camcorders.

EATE (electronic automatic test equipment). See automatic test equipment.

e-beam. A sophisticated system used in semiconductor manufacturing that uses an electron beam for maskmaking or for projecting patterns onto wafers. E-beam equipment allows smaller geometries (typically less than 1 micron) than are possible under other production methods.

ECAE. See electronic computer-aided engineering.

ECL. See emitter-coupled logic.

EDA. See electronic design automation.

EEPROM. See electrically erasable programmable read-only memory.

E-mail. See electronic mail.

EPROM. See erasable programmable read-only memory.

ET. See typewriter.

EW. See electronic warfare.

earth resources. A software application used to study the earth resources by performing seismic analysis, mapping, and oil field services.

education. The process of providing schooling or training by formal instruction and supervised practice.

educational attainment. The highest grade of regular school attended and completed.

educational publishing. A system with the main purpose/use of printing materials used for the process of educating.

elapsed time meter. An electronic measuring instrument that counts the actual time taken to observe a recurring event.

electrically erasable programmable read-only memory (EEPROM). A nonvolatile memory used to store data or programs. EEPROMs can be reprogrammed in circuit. Densities can range from 1K, with less than 1,000 bits, to 1Mb, with approximately 1 million bits.

electrocardiograph. An instrument used to graphically record electrical manifestations of heart activity obtained from the body's surface.

electroencephalograph. An instrument used to graphically record electrical discharges of the cerebral cortex by electrodes attached to the surface of the scalp.

electronic calculator. A product with components that perform calculations and digitally display results. (See also calculator.)

electronic computer-aided engineering (ECAE). Computer-aided tools used in the engineering or design phase of electronic products (as opposed to the physical layout phase of the product). Examples of ECAE applications are schematic capture, simulation, and test pattern creation. ECAE systems are used most often by electrical engineers.

electronic design automation (EDA). Computer-based tools that are used to automate the process of designing an electronic product, including boards, ICs, and systems. Formerly referred to as ECAD.

electronic forms generation. The process of automatically producing documents requesting information.

electronic game. Home electronic games that typically are attached to television receivers for arcades or amusement centers.

electronic keyboard. A keyboard on which characters are generated or encoded by electronic means, usually by contact closure, as opposed to mechanical linkages. Electronic keyboards have a different feel, and some have a built-in artificial bottoming feel and/or audible click to assure the operator a key actually has been depressed.

electronic mail (E-mail). A software application that supports the movement of information between users connected to a networked computer system.

electronic musical instrument. An instrument that allows the transmission of musical sound by the use of transistors.

electronic publishing. Fully integrated automation of the printing procedure.

electronic warfare (EW). Electronic operations between enemies. Includes warning receivers, jammers, assorted electronic countermeasure systems, and associated test equipment.

electrostatic plotter. A plotter using the corona from high voltages applied to needles or nibs to produce shaped electrostatic charges on paper; toner is attracted to the charged area, and heat and pressure are used to fuse the toner to the paper.

elementary/secondary school. A regular school, defined as schools that are part of state and local school systems and most nonprofit private elementary/secondary schools, both religiously affiliated and nonsectarian.

emerging technology. A technology that is not in widespread use and that appears to have potential for widespread acceptance.

emitter-coupled logic (ECL). 1: A form of integrated circuit used to implement very high-speed logic functions. 2: The emitters of the input logic transistors are coupled to the emitter of a reference transistor.

employees. All civilians, who, during a reference time period, did any work for pay or profit (minimum of an hour's work) or worked 15 hours or more as unpaid workers in a family enterprise.

end-user cost. The cost paid by the ultimate end user to acquire a product.

enhanced network service. Equipment and service charges associated with enhanced data communication networks, which may include protocol, electronic mail, or facsimile.

enrollment. The total number of students registered in a given school unit at a given time, generally in the fall of a year.

entertainment. 1: Electronic equipment used in automobiles and trucks to entertain. These products are used for amusement or pastime and are not intended to, but may, increase productivity or skill. Examples include: radio, seek/scan, graphic equalizer, power amplifiers, noise reduction, cellular telephone, optical disk, CB radio, and digital audio tape. 2: A computer application to keep or hold the mind, something directing or engaging.

entry-level workstation. A low-cost computer workstation, priced less than \$15,000. It is targeted at the end user who is sensitive to price. This segment tends to be dominated by occasional users who are not paid for producing documents on their system. Entry-level workstations mainly run 2 dimensional graphics and have a rating of less than 12 mips and a rating of 0.5 to 1.5 mflops.

epitaxial wafer. Single-crystal silicon grown on a crystalline silicon substrate.

equipment/maintenance management. A software application that assists in the management of equipment and the respective maintenance requirements and contracts. May also calculate depreciation.

erasable optical disk drive. An optical disk drive that uses removable media that can be erased and reused many times.

erasable programmable read-only memory (EPROM). An integrated circuit of memory that can be erased with an ultraviolet light source and reprogrammed by the user.

etch and clean equipment. Equipment used in semiconductor manufacturing to remove and clean material from wafers.

expenditure. Charges incurred, whether paid or unpaid, which are presumed to benefit the current fiscal year. These include all charges for current outlays plus capital outlays and interest.

export. The delivery of finished products to a foreign country for the purpose of trade or sale.

F

fab. Abbreviation for wafer fabrication. See fabrication.

fax. See facsimile.

FERRAM. See ferroelectric random-access memory.

FPGA. See field-programmable gate array.

FPLA. See field-programmable logic array.

fabrication. A manufacturing operation that makes components rather than assemblies.

facilities design/management. A software application used to lay out, inventory, and manage assets (such as personnel, space, equipment, and utilities) within a building or geographic service area.

facilities management service. The responsibility of providing ongoing administration of a data processing or communications facility by a vendor.

facility planning and simulation. A facility system model is exercised and refined through a series of simulation steps until a detailed, optimum configuration is reached.

facsimile (fax). 1: An electronic device that uses telephone lines to transmit documents to and receive documents from a second facsimile machine. 2: An exact copy or the process of transmitting printed matter or still pictures by a system of either telephones, telegraph, or radio for reproduction.

factory automation wafer-fabricating equipment. Fabrication equipment that includes various types of capital equipment that are automated and used throughout a manufacturing facility to fabricate wafers.

fast SRAM. A static RAM device that runs between 45 and 70 nanoseconds. (See also static random-access memory.)

fault detection, fault management, and adaptive control. A software application that determines if a manufacturing system or a process is functioning or performing within control limits. Fault management and adaptive control is a control method in which control parameters are continuously and automatically adjusted in response to measured process variables to achieve near-optimum performance.

federal government. A form of government in which power is distributed between a central authority and a number of constituent territorial units.

ferroelectric random-access memory (FERRAM). A nonvolatile, radiation-hard, fast read/write memory that can store data over long periods of time without power.

fiber optic. 1: The technique of transmitting light through long, thin, flexible fibers of glass, plastic, or other transparent material. Bundles of fiber can transmit complete images. 2: A technique used in electromagnetic wave propagation in which infrared and visible light frequencies are transmitted by a light-emitting diode (LED) or a laser through a low-loss glass fiber. This method is used in very high frequency (VHF) radiation transmission.

field-programmable gate array (FPGA). An integrated circuit incorporating an array of programmable logic elements that are not preconnected. Interconnections between the various elements

are user programmable and consist of predetermined levels of interconnect that can be connected to, or disconnected from, other interconnect lines as defined by the user. Can be of either bipolar or MOS technology.

field-programmable logic array (FPLA). A logic array in which programming is accomplished by blowing fuse links or shorting base-emitter junctions.

film ribbon. See **single-strike ribbon** or **multi-strike ribbon**.

finance. Money or other liquid resources and their respective management within an organization. Usually refers to a company's financial performance.

fire-detection alarm system. A warning system specifically used to detect smoke or fire.

fixed and removable media disk drive. A disk drive with both removable and nonremovable platters.

fixed asset. A software application that supports the management of an organization's fixed assets, which are a capital asset that cannot be readily liquidated, such as plant, land, equipment, and long-term investments. Management of expected costs based on a specific level of production or other activity.

fixed disk. A memory disk that cannot be removed from the read/write device, as opposed to a removable hard disk, diskette, or magnetic tape.

fixed media rigid disk drive. A fixed media rigid disk drive has the platter enclosed in a housing that is not designed to be accessible to the user.

flexible disk. See **flexible disk computer storage media**.

flexible disk computer storage media. A flexible disk made of a 3-mil polyester substrate coated with gamma ferric iron oxide particles dispersed in an epoxy binder and encased in a vinyl jacket. These are commonly supplied in 3.5- or 5.25-inch diameters.

flexible manufacturing system programmable machine tool. A manufacturing system that typically consists of a computer-integrated group of numerical control (NC) machines or workstations linked with material transfer devices for complete automatic processing of differing product parts or the assembly of these parts into different units.

floating-point coprocessor. A separate processor used in the efficient handling of floating-point operations.

floppy (flexible) disk. A small, thin, electromagnetic media used for storing digital information.

floppy disk controller. A device controlling the storage and retrieval of data from a floppy disk.

font generation. Process whereby typeface and size is selected.

font management. The understanding, use, and control of fonts or typefaces that are displayed on a terminal or monitor, or printed out on a device such as a printer, plotter, or typesetter. Font management requires the understanding of the physical location of where the fonts reside—whether in diskette, hard disk, ROM, RAM, card, or cartridge. It also requires the knowledge of the type of font—whether bit map or outline, scalable or fixed point and pitch—and the applications and print system capability to address and place the fonts accurately on the screen or printing media.

forecasting. A software application that supports predicting future events.

form. Any material that has been printed for the primary purpose of facilitating the entry of written information by hand or machine. A form has repetitive information printed in fixed positions. Blank paper may be included, especially if it is continuous and has undergone some alteration such as punching or perforating to facilitate manual or machine entries.

form generation. Allows the user to graphically assign a form for publication—may include data entry and database capabilities.

four-year institution. An institution legally authorized to offer and that does offer at least a four-year program of college-level studies wholly or principally creditable toward a baccalaureate degree.

front-end processor. A computer-based product expressly designed to relieve host computers of certain communications processing tasks. Included are remote concentrators that are not attached directly to a host computer. This segment does not include general-purpose computer systems functioning as front-end processors.

fully formed printer. A printer that creates one line of characters at a time by placing characters from a band, type train, or drum by pressure.

functional design. A software application that includes component design, assembly verification, linkage and mechanism design, and other detail or functional design activities.

functional PCB tester. An equipment tester that accesses the normal input/output interface of the unit under test (UUT). Generally, this consists of the edge-connector pins, plus any special interface that may have been provided for testing. Provides stimulus patterns and measurement verification that the UUT actually operates correctly.

funds transfer terminal. A machine used by financial institutions and designed to perform many of the banking functions performed by human tellers. (See also automatic teller machine.)

G

GaAs. See gallium arsenide semiconductor.

GIS. See geographic information system.

GaAs analog IC. There are two overlapping subsets in this segment; analog products and monolithic microwave integrated circuits (MMICs). Analog products have output that are linearly proportional to their inputs and function at a varying range of frequencies across the spectrum, depending on particular device design. MMICs operate in the microwave frequency spectrum (above 3 GHz).

gallium arsenide semiconductor (GaAs). A compound of gallium and arsenic used as a semiconductor material. GaAs devices are relatively expensive devices exhibiting very low internal noise.

game. A software application or activity engaged in for diversion or amusement.

garage door opener. See automatic garage door opener.

gas. A consumable material used throughout the fabrication of semiconductor devices. Includes both bulk and specialty gases.

gate array. 1: An integrated circuit consisting of a structured pattern of logic devices that is processed except for the final interconnect metallization. These devices are offered as a standard product and then customized to meet each customer's unique requirements. Can be of either bipolar or MOS technology processes. 2: A predefined pattern of prefabricated transistors that is customized for applications with one or more layers of metallic interconnections. 3: Software tools used to create application-specific integrated circuits (ASIC). The gate array itself is a predefined pattern of transistors that a semiconductor supplier prefabricates on wafers. It is customized for users by interconnecting the transistors using one or more layers of metal.

general analysis. A software application designed to solve various technical problems and to further research subjects. The analysis is usually mathematical in nature and performed by scientists, physicists, chemists, biologists, and engineers.

general ledger. A software application that supports the business function of entering accounting transactions and their subsequent transferring and reporting.

general operating system. An operating system with use not restricted to a particular type of computer or a specialized application.

general productivity. A software application that is used to enhance productivity within general disciplines.

general-purpose computer system. A computer system that is not configured for a specific purpose but rather for a general application. This category includes supercomputers, minisupercomputers, parallel processor computers, mainframes, workstations, and the like.

general-purpose input/output (I/O) circuit. A circuit that permits a system to communicate via a wide variety of input/output (I/O) devices with the outside world, which can include printers, modems, and monitors.

general test equipment. Test equipment not included under the definition of automatic test equipment (ATE).

geographic information system (GIS). A mapping software application that contains the functions of cartographic software and also allows data analysis through Boolean operations on multiple data layers.

geophysical instrument. An instrument used to observe and measure the physics of the earth and its environment.

golf ball. A type of print element invented by IBM for use in the IBM Selectric typewriter. It is a round, metal element with raised characters.

government. The organization, machinery, or agency through which a political unit exercises authority and performs functions and which is usually classified according to the power within it. Includes the executive, legislative, judicial, administrative, and regulatory functions.

graphics. Software that permits the pictorial representation of information at a screen or printer. Early graphics packages showed bar charts or line graphs on a character-based terminal by placing characters such as + or * on grids created by repetitions of characters such as | and or _ . The term has come to apply usually to bit-mapped graphics, which are capable of processing images, freehand input, and icons on a pixel-by-pixel basis. Examples of graphics software include MacDraw and MacPaint.

graphics/animation/imaging. A software graphics application used by scientists and engineers to process and display complex technical data. It also includes applications that use computers to generate or manipulate graphics images that are the end product, i.e., cartoons.

graphics board. A graphics board is an add-on board that generally plugs into a personal computer via a connector on the PC's CPU bus. Graphics boards are also connected to a color or a monochrome monitor. They are further classified as

either Mac-type or IBM-type add-on graphics boards. 1: Data conversion graphics terminals support the use of graphics to summarize or otherwise relate discrete data that were not originally graphics data. 2: Concept design graphics terminals support graphics displays that help realize accurate images of ideas conceived in the human mind. 3: Imaging graphics terminals display a real image, visible or nonvisible, that was digitized to allow enhancements or data extraction.

graphics controller. A device that governs information flow used to create visual images of data.

graphics design art. A method of applied art used to form a visual end product that conveys information. Methods include drawing, painting, photography, printing, and bookmaking.

graphics supercomputer. The performance of mips, mflops, transforms per second, and shaded polygons per second distinguish graphics supercomputers from superworkstations. Performance ratings range from 20 to 40 mips and 16 to 40 mflops. The best distinction between graphics supercomputers and superworkstations is the graphics performance ratings, 100K to 600K 3-D vector transforms/second and 25K to 150K Gouraud-shaded polygons/second. The average price ranges from \$75,000 to \$150,000..

graphics terminal. A display terminal that provides graphical presentation of information to the human operator.

grinding programmable machine tool. A stand-alone machine with expanding use of computer numerical control (CNC) and with advance efforts to incorporate grinders into flexible, automated systems. Creep-feed is a type of grinding technology.

gross lease additions. The total volume of new equipment leases.

H

HDTV. See high-definition television.

hand-held personal computer. A battery-powered computer that can fit in the palm of one's hand. It supports local programming capability using high-level languages such as BASIC, FORTRAN, C, PASCAL, etc. Its full alphanumeric keyboard distinguishes the PC from the programmable calculator and video game.

hard disk. See rigid disk.

hard-disk controller. A device that controls the storage and retrieval of data from a user's hard-disk drive.

hardware maintenance service. Remedial repair services for equipment, systems, and peripherals. Hardware maintenance can include on-site support, telephone/remote support, preventive maintenance, and other activities necessary to maintain hardware operation.

head; manganese-zinc, landable. A type of head used in sealed fixed-media drives where heads land on the lubricated media surface and use hot-pressed manganese-zinc pole pieces.

health care. An environment or industry that includes establishments primarily engaged in providing medical, surgical, and other health services.

hearing aid. A miniature electronic device used to amplify sound for the hearing impaired.

helical scan tape drive. A storage tape drive that records data on an angle rather than parallel. Tape dimensions can be 4mm, 8mm, 13mm, or 19mm. Segments of this category are VHS, DAT, 8mm, and other. (See also VHS, DAT.)

high-current ion implantation. High current—greater than 2mA, less than 200 keV. (See also ion implantation.)

high-definition television (HDTV). An emerging television standard with high-resolution, digitized images; wide, theater-like screen; and digital stereo sound. Requires a broader video bandwidth to accommodate increased picture transmission.

high-end business unit computer system. A business unit computer system with price ranging from \$250,000 to \$1 million.

higher education. Study beyond secondary school at an institution that offers programs terminating in an associate, baccalaureate, or higher degree.

high school. A secondary school offering the final years of high school work necessary for graduation, usually including grades 10, 11, and 12 or grades 9, 10, 11, and 12.

high-voltage ion implantation. High voltage greater than 200 keV. (See also ion implantation.)

home. The usual place of residence. A home-based business is an enterprise producing goods or services that is operated in or from the home.

horizontal-turning programmable machine tool. The tool of a machine that holds a piece along the horizontal axis for a certain function to be performed such as cutting, boring, or drilling.

host/vendor independent terminal. A host-independent display terminal produced by an independent manufacturer. It may operate in either character or block mode. The independent manufacturer does not supply mainframes or minicomputers to which its display terminals may attach. Not included is any terminal that is from an independent manufacturer and that is protocol-specific to either a minicomputer-based or a non-IBM, protocol-specific terminal.

hotels and lodging. An environment or industry that includes commercial and noncommercial establishments engaged in furnishing lodging, or lodging and meals, and camping space and camping facilities.

household. The set of persons occupying a housing unit. Thus, counts or estimates of households, householders, and occupied housing units are always defined the same.

hybrid. 1: Made up of several different components. 2: A hybrid is made by putting several integrated circuit dies and/or passive components into a single package and interconnecting the dies inside of the package. 3: A circuit containing more than one integrated circuit (IC), or one semiconductor circuit with other passive elements. Common passive elements used in hybrids are resistors and capacitors. 4: A device in a speech transmission system consisting of transformers that convert a two-wire channel into a four-wire channel, thus creating a separate wire pair for each direction of transmission.

hydrogen. A chemical element used for hydrofining for sulfuration of petroleum products or to reduce metallic oxide ores.

I

IBM 3270 protocol terminal. A terminal that is protocol-specific to IBM's 3270 Information Display System. Included is any IBM 3270-type terminal or 3270-compatible terminal produced by another manufacturer. A terminal that can provide the appearance of a 3270 device when used with a protocol converter is not included.

IBM/VM/MVS. An IBM standard multiuser operating system.

IC. See integrated circuit.

IC layout and verification. A software application tool that is used to create and validate physical implementations of an integrated circuit (IC). IC layout tools include polygon editors for creating geometric data, symbolic editors, placement and routing (gate array, cell, and block), and DRC/ERC verification tools.

INEWS. See integrated electronic warfare system.

I/O device. See input/output device.

I/O ratio. See input/output ratio.

IR. See infrared.

ISDN. See Integrated Services Digital Network.

IVR. See interactive voice response system.

image and text communication equipment. Equipment used in a business or residence to transmit image and text. Facsimile equipment, video teleconferencing, telex, and videotex are included in this classification.

image generation. Synonymous with image synthesis and equivalent to the historical use of graphics.

image management. The process of directing, controlling, or handling something that closely resembles another.

image processing. A series of actions, changes, or functions that bring about a particular result for something that resembles another.

imaging. See graphics/animation/imaging.

imaging subsystem. A peripheral device that does not possess video display terminal (VDT) functionality, but acts as output devices for the display of graphics and/or image data.

impact printer. A family of printers that use direct impression impact of a type bar, type head, or matrix pin to exert pressure against a paper ribbon and a platen to create a character.

import. The supply of finished products from a foreign country for the purpose of trade or sale.

in-circuit PCB tester. An equipment tester that incorporates pin electronics (drivers and receivers) that verify the functionality of each part on an assembled circuit board. Verifies each component's parameter and limited functionality.

indirect channel. A variety of distribution channels in which product is brought to the end user. It includes VARs (value-added resellers) and OEMs (original equipment manufacturers).

inductor. A passive component that stores energy in the form of a magnetic field (flux) around a core body.

industrial electronic equipment. Electronic equipment used in a manufacturing environment or industry.

industrial marking. A specified format on media that is recognized by electronic or visual means. Examples are the printing and use of forms, bar codes, ticket printing (lottery and airline, for example), and labels.

industry. A collective term for many of the productive activities of a nation or other large group. A collective term in which a number of firms produce the same kind of commodity or service or are engaged in the same kind of operation.

information center. A center designed specifically for storing, processing, and removing information for dissemination at regular intervals, on demand or selectively, according to the user's needs.

information resource management. A program that works with definitions, uses, values, and distribution of information that is processed by a user and handled by a computer system.

infrared. Those radiations, such as are emitted by a hot body, with wavelengths just beyond the red end of the visible spectrum. Wavelengths longer than those of visible light and shorter than those of radio waves.

injection laser diode. A laser in which a forward-biased gallium arsenide diode converts direct current input power directly into coherent light without optical pumping.

ink jet. An imaging process currently used in electronic printers, plotters, and full-color copiers that uses piezoelectric technology to expel a very small droplet of liquid ink through nozzles onto the output paper.

ink jet printer. A nonimpact printing method that uses ink droplets to form a printed image. This technology usually is classified by the nature of the drop stream; two major categories are continuous flow and drop-on-demand.

input/output (I/O) device. 1: Equipment used to communicate with a computer. 2: A general term applied to equipment used in communicating with a computer and the data involved in the computer. 3: The transmission of information from an external source to a computer or vice versa.

input/output (I/O) ratio. A ratio of the value of a resource input to the value of the final product output. For example, the I/O ratio reflects the relationship between the dollar values of semiconductors in a type of electronic equipment and the revenue generated by that equipment. The ratio is expressed usually as a percentage. Because I/O ratios tend to stay relatively constant over time, an "ratio changes provide important trend information.

inspection. The process of testing or measuring an object or process by remote sensing in imaging technology.

installed base. The total number of product in active, day-to-day use.

institutional support. In higher education, the expenditures that includes day-to-day operational support for colleges, excluding expenditures for physical plant operations. Examples of institutional support include general administrative services; executive direction; planning, legal and fiscal operations; and community relations.

instruction. In higher education, expenditures of the colleges, schools, departments, and other instructional divisions of higher education institutions and expenditures for departmental research and public service that are not separately budgeted. Includes expenditures for both credit and noncredit activities. Excludes expenditures for academic administration where the primary function is administration.

instructional. Products used to increase the understanding (either problem-solving or self-improvement) of a specific subject matter. The primary focus of these products is the imparting of knowledge or skills to the user.

instructional staff. In education, the number of full-time equivalent positions, not the number of different individuals occupying the positions during the school year.

instrumentation. Designing, manufacturing, and using instruments for detection, observation, measurement, automatic control, automatic computation, communication, or data processing.

insurance. An environment or industry that covers carriers of all types of insurance and insurance agents and brokers.

integrated application. A software application that combines several functions into one software package, which may include word processing, database management, and spreadsheet capabilities but is not exclusive to these functions. Data must be able to be shared among these functions.

integrated circuit (IC). A combination of interconnected semiconductor elements inseparably associated on or within a continuous substrate. Complete module of components manufactured as single, solid units made by either a film deposition or a diffusion process. Integrated circuits may be used as logic circuitry or as storage modules capable of recording many individual bits of information. Integrated circuits offer the advantage of higher speeds because pulses have shorter distances to travel and require less power, in contrast

to the discrete components (transistors, diodes, capacitors, and resistors) assembled into circuits that were plugged into receptacles in the computer.

integrated electronic warfare system (INEWS). A combination of interconnected circuit elements associated on or within a continuous substrate to produce integrated systems used specifically in military operations.

Integrated Services Digital Network (ISDN). A digital network having the capabilities of simultaneous signaling, switching, and transporting over a single facility. A new worldwide telephone standard that will make it easier to communicate information such as voice, data, and video over phone lines.

integrating and totalizing meter for gas and liquid. A meter that registers consumption and positive displacement, including meters, fuel dispenser meters, and gas meters.

integration. Integration of data types can be achieved using page composition and pagination applications.

intelligent terminal. An interactive terminal in which part of the processing is accomplished by a small computer or processor contained in the terminal itself. This type of terminal is sometimes referred to as a smart interactive terminal. Such a terminal has the following characteristics: (1) self-contained storage; (2) user interaction—with the terminal or the central computer; (3) stored program; (4) part of processing accomplished in the terminal; (5) on-line via communications line with large central computer and database; (6) human-oriented input—such as keyboard and light pen; and (7) human-oriented output—such as serial printer and CRT.

interactive language. Within a system, a human user or device serviced by the computer can communicate directly with the operating program or language.

interactive voice response system (IVR). The pad of a touch-tone telephone used to interact with a computer. To access, input, and manipulate information stored within a computer.

interconnect and bare-board tester. Equipment designed to check, monitor, and identify printed circuit boards for electrical connectivity and detect manufacturing defects.

interface. A device used to connect the digital world, which typically runs at 5V DC, with the outside world, which operates at much higher voltages. Functionally, interfaces involve: the flow of data over lines; power-boosting and handling capabilities to drive other functions; and analog signal switching.

international telephone service. Telecommunication services between offices or stations in different states or between mobile stations that are not in the same state or are subject to different states.

internal transfer. 1: The process of conveying goods and services from the producer within a company. 2: The physical movement of goods and services within a company.

interrupt controller. 1: An internal controller chip that can break into the normal flow process of a routine such that the flow can be resumed from that point at a later specified time. 2: A condition or event that temporarily suspends normal processing operations. 3: A temporary disruption of the normal operation of a routine by a special signal from the computer. 4: Copying technology: A feature that allows a job to be stopped to allow another job to be run without the loss of programming for the first job.

intrusion-detection alarm system. A warning system used to detect when someone or something has intruded in a specified area. (See also **alarm system**.)

inventory. Items used in the process of manufacturing a product and distributing it to the end user. Inventory can be stored at a stock point or at a work-in-process location. Inventory may consist of finished goods ready for sale, parts or intermediate items, work-in-process, or raw materials.

inventory and distribution management. A software application that includes items that are in a stock point or work-in-progress and that serve to decouple successive operations in the process of manufacturing a product and distributing it to the

consumer. Inventories may consist of finished goods ready for sale.

inventory management software. Software that monitors the status of materials at all levels of production, including receipts, issues, and inventory balances. This software identifies both unit quantities and dollar values and provides essential input to both the general ledger for cost accounting and the production planning software modules.

ion implantation. The use of an ion beam to bombard a silicon wafer, altering the concentrations of p-type and n-type material. This method of doping allows for very precise control of the device parameters. This process introduces dopant atoms into the surface of silicon wafers and accelerates them so that they bombard the wafer, causing them to penetrate the exposed portions of the wafer.

ion-milling etch. A technique in semiconductor manufacturing in which a beam of charged particles is used to remove material from a wafer.

J

joint venture. In finance, two or more companies providing capital to invest or make available for investment in the ownership of a new enterprise.

K

keyboard. An input device that allows an operator to enter alphanumeric characters through a typewriter-style key arrangement augmented with special function keys—manual operation of keys will generate electrical signals or cause tape to be punched, or both.

keyboard controller. A device that governs the functions of a keyboard transmitting a command to do something within a system.

key entry equipment. Data entry equipment such as key disk, key tape, or keypunch equipment.

key telephone system. A customer premises telephone switching system that allows telephones to interface to the public telephone central exchange or office without using an access code. This category includes the electromechanical 1A2 and electronic segments.

L

LAN. See local area network.

LCD. See liquid crystal display.

LED. See light-emitting diode.

LIDM. See line, impact, dot matrix.

LIFF. See line, impact, fully formed.

LNTT. See line, nonimpact, thermal transfer.

label. 1: A set of symbols used to identify or describe an item, record, message, or file. May be the same as the address in storage. 2: Matter attached to a document to identify or provide information. 3: To assign a symbol, acronym, or word as a means of identification to create a specialized record or filing handle. 4: A descriptive or identifying word or phrase.

laboratory. 1: A software application that involves the use of computers inside analytical instruments and in linking these instruments together (instrumentation automation). Mass spectrometers and blood/gas analyzers are examples. 2: A place equipped for experimental study in a science or for testing and analysis.

laboratory and scientific apparatus. Any instrument, material, or equipment designed for a specific operation or particular use in the laboratory.

language. In software, a set of commands that permits the programmer to perform arithmetic functions on data and/or give commands to specific hardware components of the computer system, such as the printer, terminals, disk, or memory. Statements in languages are generally required to be performed in a fixed order, although the order may be affected by loops and branches in the program and the values of parameters that control the looping and branching.

Examples of low-level languages are C and assembler; high-level, or third-generation, languages include FORTRAN, COBOL, BASIC, and PL/1.

language editor. A set of computer commands forming code to edit files. May involve deleting undesired information, selecting desired information, inserting invariant symbols, and applying standard processes.

laptop A/C. Laptop personal computer that is primarily powered by single-phase alternating current (A/C).

laptop D/C. Laptop personal computer that is primarily powered by battery or direct current (D/C).

laptop personal computer. The laptop case style is conducive to operation on the user's lap and is designed to be used in areas where space is restricted. It is designed to be easily moved from place to place. It is completely self-contained and can be carried as a single unit that includes the keyboard, display, mass storage, and main system unit.

large department computer system. An information system with price ranging from \$75,001 to \$250,000. Performance speed ranges from 0.2 to 4.5 mips, with preponderance between 0.5 and 2 mips (IBM, scalar). Main memory capacity ranges from 4 to 128MB. Disk capacity ranges from 65MB to 10GB. CPU bit width ranges from 16 to 48 bits, with preponderance at 32 bits and higher. Physical environment usually consists of a typical office with no special environmental controls. The unit is typically supported only part-time by nontechnical end users with limited systems training; support may occasionally require intervention by local computer systems support professionals. Number of concurrent users ranges from 21 to 64. Examples of models are the IBM 9370 models 20 through 60; IBM System/38-200; and DEC VAX 8300 and 8500.

large format plotter. This plotter uses media engineering size C (17 x 22 inches) or larger and corresponding metric sizes. (See also *plotter*.)

laser (light amplification by stimulated emission of radiation). 1: A device that transmits an extremely narrow and coherent beam of electromagnetic energy in the visible light spectrum. 2: A maser that operates at optical frequencies. In communications, lasers may be amplitude-modulated and used to carry speech information that is received by a light beam detector.

laser plotter. A device that produces an inscribed visual display of the variation of dependent variable as a function of one or more variables by the use of intense coherent beams of light.

laser printer. A type of nonimpact printer that combines laser beams and electrophotographic technology to form images on paper.

laser system. Any electronic device or system that is actuated by beams of coherent visible and infrared light to accomplish a task.

learning products. A software application to assist the user in learning something. The subject can range from classic school subjects to games, art, and languages.

lease. A contract by which one conveys equipment, facilities, or property for a specified term for a specified rent.

lease accounting. A software application that supports the management of leases.

leased circuit. A service offering that provides a customer with permanent (rather than dialed) connections to all points on the circuit for the duration of a contract.

lease/rental conversion. The volume of contractual conversions between rental and lease options.

library management. A software application that supports the administration of a library, including cataloging.

light communication system. Electromagnetic radiation of a wavelength originating at one place and reproduced at a distant point.

light-emitting diode (LED). 1: A pinhead-size device with a pn junction formed from combinations of gallium, arsenic, and phosphorus. Light emission is the result of hole-electron recombinations that take place near the junction of the

p-doped and n-doped regions. As the electrons in the n region of the diode travel through the area near the junction, they recombine with a hole. As a result of this recombination between an electron and atom, light in the form of photons is produced. The wavelength of color of the light is determined by the energy level. 2: A small semiconductor chip that emits light when a current is applied. Diodes are grouped together in a matrix of dots to form characters; characters are usually red.

line, impact, dot matrix (LIDM). A printer that prints one line of dots at a time using an array of elements in a printhead.

line, impact, fully formed (LIFF). A printer that creates one line of characters at a time by placing characters—from a band, type train, or drum—on the paper by the pressure of an impact mechanism (hammer).

line, nonimpact, thermal transfer (LNTT). A printer that prints a line at a time, using an electrically heated element to produce images.

line printer. A printer that prints one line at a time at a higher speed than a character printer. Typical line printers use a drum, chain, or train of print elements and have a hammer for each print position in the line. They usually have a buffer to hold one print line. Line printers are segmented by technology (dot matrix, fully formed, thermal) and by speed, expressed in lines per minute (lpm).

liquid crystal display (LCD). A high-contrast, black-on-white display screen that uses closely spaced crystal segments on a square dot matrix. The crystal segments butt together to form solid characters. A liquid crystal hermetically sealed between two glass plates.

lithography. 1: A printing process that prints from a planographic image on a printing plate. Lithographic presses are configured as sheetfed and web presses, depending on the format of the paper used. 2: A technique used in semiconductor manufacturing in which a silicon wafer is coated uniformly with a radiation-sensitive film (the resist) and an exposing source illuminates selected areas of the wafer's surface through a mask or template for a particular design.

local area network (LAN). The hardware, software, and peripherals that enable connection of a device to a cable-based network system that serves a building or a campus environment. Excluded are connections that are point-to-point, or go through PBXs or data PBXs. The LAN market includes equipment such as local area network computer systems, terminals, personal computers, office workstations, computer-aided engineering, and special connection segments.

local government. The political unit or organization governing counties, municipalities, townships, school districts, and numerous kinds of special districts.

local telephone service. A service that includes message telecommunications services, private line services, wide-area telecommunications services (WATS), and centrex services.

logic array. An integrated circuit in which 50 or more circuits are integral to a single silicon chip. In addition, the circuits are interconnected on the chip to form some electronic function at a higher level of organization than a single circuit. Logic arrays are constructed by the unit cell method in which a simple circuit (or function) is repeated many times on a slice. The interconnection pattern for converting groups of cells into large functions is determined after cell probe tests are completed. Each interconnection pattern may be unique to a single slice. In general, logic arrays are characterized by multiple levels of metallization to effect the large-scale function. Can be of either a bipolar or MOS technology.

logic circuit. 1: A circuit (usually electronic) that provides an input-output relationship corresponding to a Boolean-algebra logic function. 2: An electronic device or devices used to govern a particular sequence of operations in a given system. 3: Circuits that perform basic logic decisions *and/or/not*, used widely for arithmetic and computing functions. Circuits can be of either bipolar or MOS technology.

logic device. A digital component that performs logic functions. They can gate or inhibit signal transmission in accordance with the application, removal, or combination of input signals. Can be of either bipolar or MOS technology.

long distance telephone service. The revenue generated by all long distance carriers for interstate and intrastate long distance telephone services.

low-end business unit computer system. A business unit computer system with prices ranging from \$1 million to \$1.75 million.

M

MBE. See molecular beam epitaxy deposition.

MCAE. See mechanical computer-aided engineering.

MCU. See microcontroller.

MMIC. See microwave monolithic integrated circuit.

MMU. See memory management unit.

MOS. See metal oxide silicon.

MOS application-specific IC. See application-specific integrated circuit.

MOS cell-based IC. See cell-based integrated circuit.

MOS custom IC. See custom integrated circuit.

MOS digital. A semiconductor technology in which the active devices are n-channel, p-channel, or complementary MOS transistors that operate in a digital or binary mode. (See also digital.)

MOS FPGA. See field-programmable gate array.

MOS gate array. See gate array.

MOS logic. See logic circuit.

MOS memory. See memory.

MOS microcomponent. See microcomponent.

MOS microcontroller. See microcontroller.

MOS microperipheral. See microperipheral.

MOS microprocessor. See microprocessor.

MOS nonvolatile memory. See nonvolatile memory.

MOS PLA. See programmable logic array.

MOS PLD. See programmable logic device.

MOS PMD. See programmable multilevel logic device.

MOS standard logic. See standard logic.

MPDSP. See microprogrammable digital signal processing.

MPR. See microperipheral.

MPU. See microprocessor.

MPU load programmer. A device that allows engineers and IC designers to program a variety of programmable devices (ICs), thereby speeding up the design process. The device to be programmed is loaded directly on the device programmer.

machining-center programmable machining tool. A machine that is designed to fabricate a complete or near complete part of a single machine, with machining centers that perform a number of different operations in a single setup.

machining robot system. A robot that can pick up parts and place them in a new location. Parts are usually moved in and out of machinery or transferred from station to station.

Macintosh. A type of computer system designed by Apple Computer. These systems use Apple's Macintosh operating system software.

mag card/mag tape. A tape or card that is coated or impregnated with magnetic material, on which information may be stored in the form of coded polarized spots.

magnetic disk. 1: A random-access storage device consisting of magnetically coated disks accessible to a reading and writing arm, such as an automatic record player. Data are stored on the surface of each disk as small, magnetized spots arranged in circular tracks around the disk. The arm is moved mechanically to the desired disk and then to the desired track on that disk. 2: A flat, circular plate with a magnetic surface on which data can be stored by selective magnetization of portions of the flat surface.

magnetic ink recognition. Property of automatic devices that can detect or read ink-containing particles of magnetic substance, i.e., the ink used for printing on some bank checks for magnetic ink character recognition (MICR).

magnetic media. Any of a wide variety of belts, cards, disks, or tapes (as contrasted with paper tape) coated or impregnated with magnetic material for use with the appropriate equipment and on which dictation or keystrokes can be recorded and stored.

magnetic recording head. A magnetic head that transforms electric variations into magnetic variations for storage on a magnetic medium such as tape or disk.

magnetic resonance imaging. Equipment used on an object placed in a spatially varying magnetic field that is subjected to pulses of radiation; the resulting nuclear magnetic resonance spectra are combined to give cross-sectional images.

magnetic tape. A serial-access magnetic storage medium. Typically, a flat ribbon of metal, plastic, or paper that is coated on one side with material that can be magnetized; information is stored on the tape by a combination of magnetized spots in certain patterns. (See also magnetic media.)

mailing/letter-handling/addressing equipment. Mailing systems and equipment that have been automated with components to increase capabilities and to streamline efficiencies.

mail order. A sales method by which a consumer may order products through a catalog.

mainframe computer. A general-purpose information system with price range of \$500,000 and up. CPU bit width ranges from 32 to 64 bits. Physical environment can be either with or without special environmental controls and requires full-time support by professional computer systems support staff with 10 or more members. Number of concurrent users is 250 or more. Examples of models are the IBM 3090 and 4381-21, Amdahl 5890 and 5990, and Unisys 1100/90.

maintenance management. The upkeep of property, equipment, or tooling through planning, analysis, and documentation of maintenance functions.

management. The management of data types that can be achieved using document image management software and systems.

manufacturer's representative. An independent contractor who represents multiple manufacturers. She or he does not take title to the product.

manufacturer. A producer or assembler of goods for sale.

manufacturing automation. The use of a computer to aid and improve a manufacturing process.

manufacturing EATE N.E.C. Equipment that tests electronic systems that are composed of a number of subsystems. The testing equipment must verify operability and be capable of locating a faulty subsystem or component in event of failure.

manufacturing, engineering tools (CAPP, GT). Computer-aided process planning used for analyzing, planning, and documenting factory floor operations in terms of schedules, tooling resources, and equipment. Group technology (GT) is a database that classifies products and/or processes into groups having similar characteristics.

manufacturing system. A system used to process raw material by machinery.

mapping. Computer-aided tools that allow geographically related data to be captured, edited, analyzed, and managed. Typical users are civil and utility engineers, geophysicists, and geologists.

market. The demand for a product or service. In economic theory, the sum of buyers and sellers of any goods or service and their interaction.

market share. A statistic comparing a company's performance with the total market sales so that its relative position and the amount of the market it captured can be derived.

markup. 1: A pricing calculation expressed as percentage and equal to selling price minus cost divided by cost. 2: The amount added to the cost to determine the selling price for a specific product. The raise in price of a product.

masked ROM. A read-only memory programmed to the customer's specified pattern during the manufacturing process.

maskmaking/direct-write e-beam lithography. A method that allows submicron pattern generation for producing mask plates or maskless lithography. (See also lithography.)

mass merchandiser. A distribution channel with storefront location. It differs from a dealer in that its primary business is the sale of a broad range of consumer goods.

mass storage peripheral. A device that interfaces with the system or machine to external memory storage.

material. The designation of a number of basic metals, compounds, and gases to make up thermoelectric materials.

material-handling equipment and systems. Equipment such as 1: Movement—Automated guided vehicle systems, conveyors, and monorails; cranes and lift trucks are included only when they are computer-controlled; material handling robots are included in Robotics in Manufacturing. 2: Storage—Automated storage and retrieval systems; miniload, microload, and carousels. 3: Identification—Bar codes, radio frequency, machine vision, and other sensors used for identification are covered in Sensors in Manufacturing. 4: Controls—Computers, programmable controllers, and software used in material handling are included in Computers in Manufacturing and Software in Manufacturing.

material-handling/loading robot systems. Robotics used in the loading, moving, storage, and unloading of materials.

material requirement planning (MRP). A planning method that uses bills of material, inventory data, and a master production schedule to calculate material requirements. This method makes recommendations to restock materials inventory. Further, because material requirements planning is time-phased, this method makes recommendations to reschedule open orders when due dates and need dates are not in phase. Originally seen only as a better way to order inventory, material requirements planning is thought of today primarily as a scheduling technique, i.e., a method to establish and maintain valid due dates on orders.

matrix printer. An impact printer that uses wire, hammer-like bristles, or needles to create characters formed by small dots. Matrix printers produce either serial or line output. The serial printer employs a moving printhead with a matrix block (i.e., 5 x 7 or 7 x 9) of needles. The printhead sweeps across the page to print full characters one at a time. The line printer uses a horizontal band with raised dots that moves from left to right across the paper. The individual needles strike programmed character dots to form one row of dots per sweep across the page. Successive passes of the line printer form complete characters and complete rows of textual data. High-resolution text, comparable to daisywheel output, may be produced by overlapping matrix printers that print characters via a highly concentrated matrix or successive, staggered passes of the printhead. Fonts for matrix printers are stored in ROM or PROM memory.

measure. The unit in which distance and size are specified, including inches, centimeters, picas, pitch, and points.

mechanical. Mechanical CAD/CAM is the software application of computer-aided tools to design, analyze, document, and manufacture discrete parts, components, and assemblies.

mechanical assembly equipment. 1: Machinery or equipment that assembles mechanical parts into subassemblies or final products. 2: Dial or rotary assembly machines; in-line transfer machines; flexible assembly equipment (except robots).

mechanical computer-aided engineering (MCAE). The application of CAD/CAM tools for mechanical design and analysis. MCAE applications range from conceptual product design through detailed product design and analysis to supporting production design. Commonly used MCAE products are solid modeling and finite element analysis technology.

mechanical computer-aided manufacturing. See mechanical.

media-to-media data conversion equipment. Computer output-to-microfilm recording units, tape print units, card-to-tape conversion units, as well as document entry devices.

medical. An environment or industry that uses computers to control and/or collect and analyze data from patients, medical equipment, and/or instruments.

medium-current ion implantation. See **ion implantation.** (Medium current is less than 2mA, less than 200 keV.)

memory. 1: Pertaining to a device into which data can be entered and stored for later retrieval. 2: An integrated circuit (IC) designed for the storage and retrieval of information in binary form, can be either bipolar or MOS technology and may include dynamic random-access memory (DRAM), static random-access memory (SRAM), read-only memory (ROM), programmable read-only memory (PROM), erasable programmable read-only memory (EPROM), and electrically erasable programmable read-only memory (EEPROM). 3: The part of a computer that holds instructions and data.

memory management unit (MMU). 1: An integrated circuit that manages the storage and retrieval of data found by cell location or address. 2: A component (or set of components) that implements the memory management function in a processor-based system.

merchant production. The sale of a good to a company other than the manufacturing company.

merger and acquisition. In financial terms, it means to absorb or acquire one company by another.

metalorganic CVD (MOCVD). A technique used to deposit material onto a wafer.

metal oxide silicon (MOS). 1: A circuit in which the active region is a metal oxide semiconductor sandwich. The oxide acts as the dielectric insulator between the metal and the semiconductor. 2: A process that results in a structure of metal over silicon oxide over silicon. 3: Technology that employs field effect transistors having a metal or conductive electrode that is insulated from the semiconductor material by an oxide layer of the substrate material.

meteorological instrument. An instrument used to monitor and observe the weather.

metropolitan statistical area. A large population nucleus, together with adjacent communities, that has a high degree of economic and social integration with that nucleus. Each metropolitan statistical area (MSA) must include at least: (a) one city with 50,000 or more inhabitants, or (b) a census bureau-defined urbanized area of at least 50,000 inhabitants and a total MSA population of at least 100,000 (75,000 in New England).

microcomponent. 1: An integrated circuit (IC) with high-speed, low-power density considered as a single part. 2: An IC that contains a processing unit or acts as an interface chip to such a device. Types of microdevices include microprocessor (MPU), microcontroller (MCU), microperipheral (MPR), and digital signal processor (DSP).

microcomputer. An information system with price ranging up to \$100,000, with the majority priced at less than \$50,000. CPU bit width is normally 32 bits, but can be as low as 8 bits. Traditionally used as a deskside or desktop system configuration. Normally a multiuser system used in a common work area. Usually has a merchant (nonproprietary) microprocessor. Examples of models include the TI S1000, Motorola Delta series, and Bull HN Micro 6/20.

microcontroller (MCU). An integrated circuit, containing a CPU, memory, and I/O capability, that can perform the basic functions of a computer.

microperipheral (MPR). A support device or circuit for a microprocessor or microcontroller that either interfaces with external equipment or provides system support.

microprocessor (MPU). 1: A hardware component contained in a single integrated circuit (usually produced on a single large-scale integrated chip) that carries out instructions and controls the flow of data and commands. 2: A single-chip component, or a collection of architecturally interdependent components, functioning as the CPU in a system. A microprocessor may contain some input/output circuits, but it usually does not operate in a standalone environment.

microprogrammable digital signal processing (MPDSP). An integrated circuit that allows high-performance, modular DSP architectures to be designed using standard off-the-shelf components.

Products include bit-slice and building block components.

microwave. 1: Any radio wave with a frequency higher than 890 MHz or a wavelength of between 1m1 and 1m. 2: A form of electromagnetic radiation that has frequencies of 1 GHz. These high-frequency bands of energy are used extensively for radar and wideband communications.

microwave antenna. A device used for receiving and transmitting microwave signal beams. (See also antenna.)

microwave monolithic integrated circuit (MMIC). An electronic circuit employing monolithic integrated circuit technology fabricated by microelectronic techniques and capable of operating at frequencies above 1 GHz.

microwave oven. An oven that uses electron waves to produce heat for faster cooking of foods.

microwave radio equipment. Equipment that includes transmitter/receiver systems, power supplies, repeaters, and other equipment used in microwave radio systems. It also includes analog and digital equipment used both in common carrier and in private industrial systems.

military/aerospace electronic equipment. Electronic equipment used in the military and civilian aerospace industries.

military communication equipment. Voice, data, and cryptographic equipment used for communication in the military.

military computer system. A computer system used for military purposes; a set of hardware components that form a system intended solely for military applications. This category includes general-purpose CPUs, storage, input/output, and terminals and includes both commercial, ruggedized, and mil'spec versions for integration into military systems and for government-sponsored programs.

military electronic equipment. Electronic equipment used exclusively by the military. Usually, this equipment must meet government specifications and regulations.

military simulation and training. The performance of military maneuvers/exercises as training for real-life military situations. This category includes flight and battle simulators and equipment operation and maintenance systems.

milling programmable machine tool. A machine tool for the removal of metal by feeding a workpiece through the periphery to remove the material through the motion of workpiece and cutter.

minicomputer. An information system with prices ranging from \$10,000 to \$300,000 but mainly falling between \$25,000 and \$150,000. CPU bit width ranges from 8 to 16. Minicomputers are situated usually in a common work area and occupy more floor space than most tower configurations. Number of concurrent users ranges from 15 to 100. System usually incorporates proprietary processor, with notable exceptions, and is often packaged with third-party application software and/or peripherals and then resold into specialized applications or vertical markets. Examples of models are the HP 1000, HP 3000/70, PDP-11/84, and IBM Series/1.

minicomputer-based terminal. A display terminal provided by a minicomputer manufacturer or a display terminal that is protocol-specific to an IBM System/34, /36, or /38 computer. This terminal may operate in either character or block mode. Excluded from this category is any minicomputer-compatible terminal supplied by an independent manufacturer.

miscellaneous military equipment. Equipment that includes classified systems, test equipment (N.E.C.), vehicle control, medical equipment, assorted development and office equipment, and research and development equipment; all used in the military.

missile and weapon. An object tossed, thrown or shot to strike at something. Includes guidance, control, fusing, test, and launcher equipment.

mobile communications equipment. Equipment (base stations, mobile units, and antenna) used primarily for portable public or private communications.

mobile communication service. Radio service between a fixed location and one or more mobile radio stations, or between mobile stations.

mobile radio base station equipment. The base/centralized station equipment associated with cellular radio systems. This category includes both switching equipment and radio transmitter/receiver equipment.

mobile radio service. Service or network revenue associated with cellular radio systems. (See also **mobile communication service**.)

mobile radio system equipment. Electronic equipment used in the transmission and receiving of radio signals. Equipment includes main central control, base control mobile stations, and hand-held car units. Used primarily with cellular and other mobile communication technologies.

modeling. A software application that can represent a process or system by using equations that simulate and represent behavior under varying conditions.

modem. 1: An electronic device that provides modulation and demodulation functions of transmitted data signals over telephone lines. They convert digital data signals to analog for transmission over leased lines or the analog public switched telephone network. 2: The integrated circuits used in a modem.

molecular beam epitaxy deposition (MBE). A technique used in semiconductor manufacturing to deposit a single crystal layer on a substrate by use of a molecular beam.

molecular engineering. See **computational chemistry/molecular engineering**.

money management. A software application with the primary function of identifying and controlling the source, flow, location, and earning potential of an organization's cash and investments.

monitor. 1: To check the operation and performance of a system or circuit by examining parts of transmissions. 2: The physical CRT unit, associated electronics, and housing used in display systems. 3: A station or equipment arranged to supervise system operation. 4: To supervise and verify the correct operation of a system, device, or program. 5: The screen of a video display terminal. 6: An analog monitor can display an

almost infinite number of colors, while a digital monitor can display a more limited range of colors.

monolithic analog integrated circuit. A device constructed from a single piece of material. A device that is constructed of 100 percent analog circuitry. All circuit components are manufactured in or on top of a single crystal semiconductor material; the elements of which are formed upon or within a semiconductor substrate with at least one of the elements formed within the substrate.

mouse. A hand-held device that is moved on a surface to provide coordinate input to a graphics system. It is used most often to position a pointer or cursor.

multilingual publishing. A system with the purpose/use of printing in a variety of languages.

multimedia. A process that uses more than one form of communication.

multiplexer equipment. Public telecommunication equipment used to combine a number of channels for transmission over a common medium, such as satellite, microwave radio, cable carrier, or fiber-optic cable. Excluded from this are data-only customer premises multiplex equipment and multiplex equipment that is integral to carrier or microwave radio systems.

multistrike ribbon. A ribbon that advances only part of a character width; characters slightly overlap one another on the ribbon.

multiuser system. A computer system inherently designed for environments with multiple users.

N

NMOS. See **n-channel metal oxide silicon**.

NVRAM. See **nonvolatile random-access memory**.

n-channel metal oxide silicon (NMOS). Pertaining to MOS devices made on p-type silicon substrates in which the active carriers are electrons that flow between n-type source and drain contacts. The opposite of PMOS. NMOS is two to three times faster than PMOS. (See also MOS.)

natural resources and construction. An environment or industry that includes establishments primarily engaged in agricultural production, forestry, commercial fishing, hunting and trapping, and related services; and mining or quarrying, developing mines, or exploring for nonmetallic minerals except fuel. Also, certain well and brine operations and primary preparation plants, such as those engaged in crushing, grinding, washing, or other methods of concentration.

navigation, military. A process for directing ships, aircraft, spacecraft, and other crafts to a specific destination. Equipment determines position, distance, and course of vessel or craft.

net additions. 1: The change in stock, such as installed base or inventory. 2: The relative increase or decrease in the total installed base of a product.

network management. A software application that controls the logical connections and information flow among computers on a network. This software may have additional functions such as performance measurement and diagnostic and accounting functions.

network support services. All services that help customers better utilize their networking facilities. The services include site planning, installation, and ongoing on-site and remote maintenance support, as well as professional services such as network design/planning, integration, administration, and operations management.

new placement demand. The total end-user demand for new equipment (as compared with replacement equipment).

newspaper publishing. A system with the main purpose/use of printing newspapers; typically daily or weekly publication containing such elements as news, feature articles, and advertising.

nitrogen. A chemical element.

non-IBM, protocol-specific terminal. A terminal that is protocol-specific to a Burroughs, Honeywell, or Sperry mainframe computer. Included is any terminal of this type that connects to another computer by means of protocol emulation.

nonimpact printer. A hard-copy computer output device that forms images through electrostatic or other nonimpact methods. These printers include ink jet, laser, and thermal printers. (See also ink jet printer.)

nonvolatile memory. An integrated circuit using two-junction transistor technology where memory retains information when the power is off. Also known as core or permanent memory. Can be either bipolar or MOS technology process.

nonvolatile random-access memory (NVRAM). A read/write semiconductor memory device that does not lose information when the power is turned off.

notebook D/C. A laptop personal computer that is battery-powered and has physical dimensions not exceeding a 1-inch stack of paper or small telephone directory.

nuclear radiation detection and monitoring instrument. An instrument used to detect, inspect, monitor, and control alpha particles (neutrons, protons, and electrons) that emanate from the atomic nucleus as a result of radioactivity and nuclear actions.

numerical control. 1: Computer instructions that automate machining and drafting tools. 2: A technique of simulating the operation of a machine tool. 3: Descriptive of systems in which digital computers are used for the control of operations, particularly of automatic machines. A technique of controlling a machine or process through the use of command instructions in coded numerical form.

O

OCR. See optical character reader.

OEM. See original equipment manufacturer.

OLTP. See on-line transaction processing.

OS/2. Computer systems based on the Intel 80XXX architecture and using OS/2 operating system software.

OTP ROM. See onetime programmable read-only memory.

office equipment. Equipment used in a business or office environment. Equipment may include copiers and duplicators, electronic calculators, dictating machines, electronic typewriters, word processors, banking systems, cash registers, and mail- and letter-handling equipment.

oil field services. A software application that uses small computers in the oil rigs or the wellhead areas to log and analyze data from sensors in the well.

onetime programmable read-only memory (OTP ROM). An EPROM packaged in plastic without a quartz window for erasure. Such a device is therefore programmable only once.

on-line transaction processing (OLTP). The input, tracking, and output of a well-defined record of information, processed in real time rather than batch. Examples include ATMs and airline reservations systems. OLTP systems are usually large and complicated enough that each one is customized, so there are few generic OLTP products. The RAMP-C and Debit-Credit benchmarks are examples of OLTP standards.

op amp. See **operational amplifier.**

operating environment. Provides a set of conventions for screen appearance, keyboard, mouse and screen operations, and program functions. Operating environments function within an operating system.

operating system. 1: The software program in a computer that maps logical constructs to physical locations in the computer. The operating system is the program that lets a programmer, for example, access data by a file name without knowing where the file is physically located on the disk. Examples of operating systems are VMS, created by Digital Equipment Corporation; MPE, created by the Hewlett-Packard Company; and UNIX, created by AT&T and other groups. 2: The program that controls the computer's operations, managing disk, screen, file maintenance, and printer activity, while loading and running application programs.

operational amplifier (op amp). A type of integrated circuit (IC) that generates an amplified output that is exactly proportional to its input.

operating utilities. A program or routine of general usefulness and applicable to many jobs or purposes.

optical character reader (OCR). 1: A device or scanner that can read printed or typed characters and convert them into a digital signal for input into a data or word processor. 2: The machine identification of printed characters through the use of light-sensitive devices; computer-input-only hardware.

optical disk controller. A device that controls the storage and retrieval of data from a video disk that is sensed through a laser beam.

optical disk drive. A data storage device utilizing laser technology. Types include CD-ROM, WORM, and erasable optical disk drives.

optical jukebox. A library system that holds multiple disk drives and optical disks to create a large storage environment on optical media.

optical media. The substance on which data is stored electronically and read by laser technology.

optical-scanning equipment. See **optical character reader.**

opto. See **optoelectronic.**

optocoupler. 1: A device that transmits electrical signals, without electrical connection, between a light source and a receiver. Also called an optoisolator. 2: A device that consists of an LED separated from a photo detector by a transparent, insulating, dielectric layer, all mounted in an opaque package. A current pulse in the LED causes a radiation pulse to flow across the dielectric layers to a photo detector, which produces a current pulse at the output. The input and output circuits are coupled with high-standoff voltage isolation.

optoelectronic (opto). A semiconductor device in which photons cause electron flow or vice versa. Optoelectronic chips contain transducers used between photonic circuit media and electronic media; they also may contain amplifiers, logic functions, and/or other photonic or electronic functions.

order entry and sales support. The process of accepting and translating what a customer wants into terms used by the manufacturer. This can be as simple as creating shipping documents for a finished goods product line to a more complicated series of activities including engineering effort for make-to-order products.

order entry/processing. Acceptance and translation of customer requirements into terms used by a manufacturer.

organization operation. A software application that supports the day-to-day running of an organization.

original equipment manufacturer (OEM). 1: An OEM may manufacture a product for assembly into another system or larger configuration by another manufacturer or vendor. 2: Despite the name, a purchaser of equipment to be incorporated into its product line. 3: A product reseller that integrates hardware, software, and/or services. The reseller may or may not own the hardware or software. An OEM differs from a VAR in that it adds its own label to the product and backs up its warranties.

other. A subject or segment that is not distinctly defined within the WorldBase segmentation scheme.

other analog. Examples of this device include signal generation ICs, phased-locked loops, timers, motor control ICs, and sensors.

other automated material handling. Equipment used in the loading, moving, storage, and unloading of material that is not distinctly defined.

other bipolar logic. Bipolar digital logic that is neither ASIC nor standard. Includes bipolar bit-slice chips (bipolar microprocessors and support chips) and application-specific standard products (i.e., chips specialized for a dedicated application, such as telecommunications).

other bipolar memory. Bipolar memory ICs that are neither RAM nor nonvolatile. This category includes those memory devices using TTL and ECL technologies.

other communication equipment. Equipment includes all other communication equipment that is not distinctly defined.

other communication peripheral. Peripheral IC devices not distinctly defined.

other consumables. Consumables that are not distinctly defined.

other consumer appliance. Equipment such as heaters, fans, furnaces, heating systems, and other consumer appliances that are not distinctly defined.

other consumer electronics. Electronics not distinctly defined.

other cutting programmable machine tools. Equipment tools that can be programmed for broaching, sawing, tapping thermal, waterjet processes; and other programmable machine tools that are not distinctly defined.

other diagnostic medical equipment. Equipment used to track and analyze a variety of diseases and other medical equipment that is not distinctly defined.

other digital bipolar. Both bipolar memory and logic combined.

other display peripherals. Peripheral integrated circuits used for visual presentation not distinctly defined.

other discrete semiconductors. Devices include microwave diodes, varactor-tuning diodes, tunnel diodes, selenium rectifiers, and other discrete devices not distinctly defined.

other education. Regular schools, which accommodate grades K-12 and are part of state and local school systems, and also most nonprofit private elementary/secondary schools, both religiously affiliated and nonsectarian.

other electronic equipment. Electronic equipment not distinctly defined.

other helical scan tape drive. Helical scan tape drives not distinctly defined.

other industrial electronic equipment. Equipment such as vending machines, laser systems, power supply, traffic control, particle accelerator, industrial and scientific X ray, laboratory and scientific apparatus, teaching machine, aid and scientific apparatus not elsewhere classified (NEC), and not distinctly defined.

other input/output device. Key entry equipment, computer plotters, magnetic ink recognition, media data conversion, digitizer, voice synthesizer, morse, and keyboard.

other light communication system (laser, infrared). Communications equipment using beams of visible, infrared, or ultraviolet radiation or, over much longer distances, through the use of laser beams.

other mass storage peripherals. Peripheral integrated circuits used with a computer system primarily for storing information not distinctly defined.

other MOS logic. MOS logic that is neither ASIC nor standard. Includes application-specific standard products (i.e., chips specialized for a dedicated application, such as telecommunications).

other MOS memory. MOS memory ICs that are not DRAM, SRAM, or nonvolatile. Includes specialty memories, such as FIFOs, LIFOs, Cache, and dual-port memories.

other office equipment. Office equipment not distinctly defined.

other optoelectronic components. Devices such as photodiodes, photo transistors, solar cells, lasers, charged-coupled device (CCD) sensors, and other optoelectronic devices not distinctly defined.

other PC operating systems. Includes all personal computer (PC) systems that are not using DOS, OS/2, or Macintosh operating system software.

other personal electronic. Electronic devices such as electronic vacuums, weight scales, water pulsators, heating pads, calculators, and other personal electronics not distinctly defined.

other robot system. Test and inspection robots that manipulate a camera or gauge to inspect or test a part for conformance to standards; robots performing polishing, grinding, drilling, and debugging where the robot carries the part and, in some cases, manipulates the part while the tool remains fixed; and other robotic systems that are not distinctly defined.

other semiconductor fabrication equipment. Various types of capital equipment used throughout a fabrication facility that do not fit readily in other fabrication categories. This equipment includes tube cleaners, decontamination systems, wafer markets, gas analyzers, storage systems, and similar equipment.

other services. Establishments not distinctly defined that provide specialized services for individuals, businesses, government establishments, and other organizations.

other specialized terminal. Terminals that are not distinctly defined.

other (studio, theater). Equipment used in a studio or theater environment that is not distinctly defined.

other therapeutic medical equipment. Therapeutic equipment found in the medical industry that is not distinctly defined.

other traditional peripherals. Peripheral integrated circuits not distinctly defined.

oxygen. A gaseous chemical element.

P

PAL. See programmable array logic.

PBX-private branch exchange. See PBX telephone system.

PBX telephone system. A telephone switching system on the customer premises that, by dialing an access code, permits a telephone to interface to the public telephone central exchange or office.

PC. See personal computer system.

PC logic chipset. A semiconductor device that integrates standard logic and controller chips into a smaller portion of very large-scale integration (VLSI). A reduced component count of multiple logic and controller chips.

PCB layout. Products that are used to create the layout of the traces and components to be placed on a printed circuit board.

PLA. See programmable logic array.

PLC. See programmable logic controller.

PLD. See programmable logic device.

PMD. See programmable multilevel logic device.

PMOS. See p-channel metal oxide silicon.

PMR. See projection microradiography.

PNPP. See page, nonimpact, plain paper.

PROM. See programmable read-only memory.

PVD. See physical vapor deposition.

pacemaker. An electronically pulsed oscillator implanted in the body to deliver electric pulses to the heart at a fixed rate in response to a sensor that detects when a person's heart rate slows.

packet data switching. Data network switches that connect terminals and packet assemblers/disassemblers to a pre-edit node using a high-speed link (56,000 bps). Can be public or private.

page, nonimpact, plain paper (PNPP). A printer with the ability to buffer, in part or in whole, a page of images received from an electronic source and then to transfer these images to a receiving substrate.

page printer. A high-speed printer that prints characters one at a time to full-page format. Page printers are rated by speed categories, expressed in pages per minute (ppm).

paging equipment. Communication equipment that produces an audio signal in a radio receiver carried by an individual to tell him that he is needed at the telephone. Communication system for summoning individuals or making public announcements.

painting robot system. A system consisting of a number of robots programmed to paint by carrying spray guns and applying a coating of material. Also known as finishing robot.

panel-type instrument. 1: Switches, dials, and buttons that are mounted on an electronic unit that controls and monitors a system. 2: Electronic instrumentation devices mounted on a panel for a variety of equipment purposes.

paper. Sheets of fiber formed on a fine screen from a water suspension. There are hundreds of different types of paper based on weight, brightness, color, opacity, and coating.

particle accelerator. A device that accelerates electrically charged particles (protons, electrons) to high energies.

parts service. Spare hardware modules or components used in the repair and/or replacement of failed hardware units.

passive device. 1: An inert component that may control, but does not create or amplify, energy. 2: A device that exhibits no transistance. A component that does not provide rectification, amplification, or switching but reacts to voltage and current. 3: Pertaining to a general class of device that operates as signal power alone.

patient monitoring. Equipment used to monitor, control, and record data on activity concerning or affecting a patient's health.

payroll. A software application that supports an organization making payment to its employees for work performed.

p-channel metal oxide silicon (PMOS). An MOS device made on an n-type silicon substrate in which the active carriers are holes (p) flowing between p-type source and drain controls.

people. Human beings. In this context, it usually refers to a subject category about people within an industry or company.

percent retirement. See retirement.

periodical publishing. A system with the main purpose/use of printing publications issued at intervals.

peripheral device. 1: Any instrument, device, or machine that enables a computer to communicate with the outside world, or areas in the operation of the computer. 2: Equipment that is connected to a computer but is not part of the computer. Examples include printers, terminals, and disk drives.

peripheral I/O management. 1: A program that interacts with the central processing unit (CPU) of a computer to communicate with devices beyond the CPU. The program interprets and responds to instructions from the CPU. 2: Information flows between the CPU and a unit of peripheral equipment.

personal computer operating system. An operating system designed specifically for operation of a personal computer.

personal computer system. A general-purpose, single-user computer that is distinguished from a technical workstation by its features and the user's potential migration path within the platform. High-performance features (such as networking; graphics; floating-point coprocessor; and a virtual, multiuser/multitasking, operating system) are optional rather than integral system features. A PC's resident operating system is typically DOS, OS/2, or Mac OS. Users reach a migration-path ceiling at the high end of the PC product line, both in computer performance and in sophistication of available application software. For example, a Mac II or Compaq 386 represents the PC platform ceiling; the user's next move upward is to the technical workstation platform.

personal electronics. Electronic equipment for personal use.

personnel management. A software application that supports an organization in managing its employees; may include many subapplications.

photoreceptor. The photoreceptor is the central element in an electrophotographic copier or non-impact printer. The photoreceptor consists of two parts; a support or substrate, usually in the form of a drum or flexible belt, and a photoconductive coating consisting of one or more layers.

photoresist. A light-sensitive coating used in photolithography.

photosensitive. Capable of emitting electrons when struck by light rays.

photosensitive plotter. See photosensitive.

physical property test, inspection, and measurement. An instrument designed to inspect and measure physical property.

physical vapor deposition (PVD). A process through which specific materials are physically layered on a wafer. Includes sputtering and evaporation.

pin diode. A diode made by diffusing the semiconductor with p-dopant from one side and n-dopant from the opposite side with the process so controlled that a thin or intrinsic region separates the n and p regions. (See also power diode.)

planning. A software application that facilitates the quantitative aspects of business planning, such as modeling, budgeting, analysis, and forecasting.

plasma etchant. A highly ionized gas (plasma) in the manufacture of high-density semiconductors.

plastic-processing machinery. Numerically controlled machinery used for injection, structural foam, extrusion, blow molding, thermoforming, and reaction injection.

plastics. 1: A polymeric material of large molecular height that can be shaped by flow; usually refers to the final product. Examples include polyvinyl chloride, polyethylene, and urea formaldehyde. 2: Displaying or associated with plasticity.

plotter. 1: A recorder that charts, in graph form, a dependent variable as a function of one or more variables with an automatically controlled pen or pencil. 2: Any (vector or raster) computer hard-copy devices that perform mainly graphics functions. These devices include pen plotters, electrostatic plotters, photographic and laser plotters, and ink jet plotters.

point-of-sale terminal. A terminal device that operates as a cash register in addition to transmitting information.

polysilicon. A silicon layer grown on a wafer in a furnace.

population. The total of individuals occupying an area or making up a whole. A *de facto* population should include all persons physically present in a country (state, province, region, city, or town) or designated area at a reference date. A *de jure* population, by contrast, should include all usual residents of a given country or designated area, whether or not they are physically present at the reference date. By definition, therefore, a *de facto* total and a *de jure* total are not entirely comparable.

portable electronic measuring instrument. An electronic measuring instrument that can be carried or transported with ease.

portable radio receiver transmitter. A device for converting radio waves into perceptible signals.

portfolio management. A software application that allows investors to clarify, estimate, and control the sources of risk and return in their portfolio.

postsecondary education. The provision of formal instructional programs with a curriculum designed primarily for students who have completed the requirements for a high school diploma or equivalent.

potentiometer. A device for the measurement of an electromotive force by comparison with a known potential difference.

power diode. A silicon wafer containing nearly equal p-type and n-type impurities with additional p-type impurities diffused from one side and additional n-type impurities from the other side, leaving a lightly doped intrinsic layer in the middle to act as a dielectric barrier between the n-type and p-type regions. Also known as pin diode.

power grid control. See power management.

power management. A real-time application that monitors and controls power generation equipment and power line grids.

power supply. 1: A unit that supplies electrical power to another unit. 2: Energy source that provides power for operating electronic apparatus.

power train. The mechanism by which power is transmitted from the engine to other part of the vehicle that it drives. Examples include ignition, spark timing, fuel control, turbo control, emissions systems, voltage regulator, alternator, engine control, and diagnostics.

power transistor. 1: Dissipate power of one or more watts. 2: A transistor designed for high-current, high-voltage applications.

premises switching equipment. Voice equipment that provides switching or call-routing functions. Includes equipment such as PBX telephone system and key telephone system.

premises telecommunications equipment. Includes the terminal, transmission, and switching equipment used by end users in implementing premises voice and data networks. This market includes equipment such as data communications equipment, premises-switching equipment, call-processing equipment, desktop terminal equipment, and image-processing equipment.

presentation graphics. 1: A software application with a principal function of formatting text or numeric data into specified formats for the presentation of ideas. This may include graphs, charts, and/or lists suitable for professional presentations. 2: An image written, printed, drawn, or engraved; an image outlined or set forth for commercial, professional, or industrial purposes.

print element. The mechanisms used in fully formed character printers and typewriters by which marks are made on the paper. The three types of print elements are printwheels, also known as daisywheels, golf balls, and thimbles.

printer. The unit that produces copy on paper—a typewriter or a line printer. Often connected to a CPU that transforms electronic data into hard-copy form. (See also ink jet printer and line printer.)

printer controller. 1: Within a printer, the device used to regulate, accelerate, decelerate, start, stop, reverse, or protect devices connected to an electric controller. 2: A device or instrument that holds a process or cartridge at a desired level. 3: Hardware and/or software, usually either printed circuit board- or diskette-based, that takes

data streams from software and converts it to printer-specific commands. The controller may reside in a CPU; may be connected to the print engine by an interface cable, a diskette or chip set in the CPU or printer; or, as in most cases, may be a physical attachment to or integrated component of the printer itself.

printer controller board. See **printer controller.** (Except all devices are loaded onto a board.)

printer, impact. Family of printers that use direct impression impact of a typebar, type head, or matrix pin to exert pressure against a paper ribbon and a platen to create a character.

printer, nonimpact. A printer capable of imaging on a substrate without physically striking it; these include ink jet, laser, and thermal printers.

print ribbon. A strip of inked material or fabric. (See also **single-strike ribbon**, **web ribbon**, **film ribbon**, **multistrike ribbon**.)

print system network. Hardware and software that is integrated to manage the information sent to one or a number of printers, usually shared by more than one user. The system may be as simple as a switch box connected to two CPUs and one printer, or as complex as a full local area network that controls print streams to many printers from multiple CPU systems and controls job-queuing management, printing error conditions, spooling, and rerouting.

printwheel. A print element for certain character printers. The characters are engraved at the end of spokes, the entire printwheel resembling a daisy. Also known as **daisywheel**.

private packet data switching. A private packet data network switch connects terminals and packet assemblers/disassemblers to a packet node using a high-speed link (56,000 bps). (See also **packet data switching**.)

private school or institution. A school or institution that is controlled by an individual or agency other than a state, a subdivision of a state, or the federal government; usually supported primarily by funds other than public funds; and is operated

by other than publicly elected or appointed officials.

process control, nonunified system. System-type instruments and related equipment for process control activated from standardized electrical transmission signals, in which control and signal conditioning are separated from the display and operator interface.

process control system. 1: Process control refers to monitoring and maintaining the operation of plants that manufacture homogeneous materials such as oil, chemicals, and paper. Process control systems are capable of detecting errors in input variables and environment and taking corrective action. Closed-loop systems are self-correcting, and open-loop systems alert an operator. 2: A computer-based system that controls physical transformation and/or the mixing of products in a fluid state. These products include chemicals, liquified gases, molten metals, pulp, rubber, glass, and cement.

process control system, auxiliary station. Peripheral equipment of a process control system not in direct communication with the central processing unit or system.

process control system, controller. The controller describes that portion of a process control system that continuously measures the value of a variable quantity or condition and then automatically acts on the controlled equipment to correct any deviation from a desired present value.

process control system, indicator. A portion of the process control system that produces a diagram measuring the pressure volume changes in a running system.

process control system, industrial process computer. A computer that monitors the manipulations and changes of numerous conditions within a process control system automatically.

process control system, recorder. A portion of a process control system that makes a graphic or acoustic record of one or more variable quantities.

process manufacturing. There are two types of process manufacturing. *Continuous process* produces a continuous stream of products, the units of which are not differentiated from one another (i.e., gasoline). *Batch processing* produces product by reference to a recipe (i.e., bread).

process planning and control. See process control system.

processing terminal. A display terminal that has local processing capability but is dependent on communication with a host, controller, or server to provide files and application programs. Such a terminal does not have a mass data storage device.

processor. A device for handling information in a sequence of reasonable operations. Any device that can perform operations on data.

production. The number of units or the value of new durable or nondurable goods that are ready for delivery.

production planning and control. Software used to plan for factory resources of a manufacturing company.

professional publishing. Systems dedicated exclusively to the job of publishing; typically, PC-based professional publishing systems focus on a single task or stage in the document production cycle, rather than managing the entire document production process.

professional services. A range of nontraditional services including consulting on information technology, contract/custom programming, systems integration, facilities management, education, and ongoing maintenance.

programmable array logic (PAL). PAL is a trademark of Monolithic Memories, Inc., (now part of Advanced Micro Devices) referring to a family of logic devices that are customer programmable.

programmable logic array (PLA). 1: A form of LSI containing a structured, partially interconnected set of gates and inverters that are fuse programmed. 2: A semiconductor that can be manufactured by a bipolar or MOS technology.

programmable logic controller (PLC). A device or transmission control unit in which hardwired functions have been replaced with software or microcode. A programmable controller enables a user to add, change, or tailor computer capacities to the user's needs; programmable solid-state devices that replace mechanical relays for controlling sequential operations, timing, counting, and similar simple control actions. Where the capabilities exist as a function of the PLC, this definition includes more sophisticated tasks such as mathematical computations, data acquisitions, reporting, and process equipment control.

programmable logic device (PLD). A type of application-specific integrated circuit (ASIC) that is user programmable rather than mask programmable. The function of a PLD is determined by blowing fuse links or programming memory devices to create the desired interconnections between the fixed logic elements on the device. Can be either a bipolar or MOS technology. (See also programmable logic array.)

programmable machine tool. Numerical control (NC), computer numerical control (CNC), direct numerical control (DNC), and flexible machining centers used for metal cutting and metal forming.

programmable monorail. A monorail system that transports loads in a suspended carrier, or trolley, that runs on wheels along a fixed overhead rail. Automated monorails offer flexibility through multiple routes and elevations, and they provide transportation, accumulation, and storage of goods.

programmable multilevel logic device (PMD). A semiconductor that can be manufactured by a bipolar or MOS technology process. The device, evolved from the basic programmable logic array (PLA), incorporates architectures to implement complex logic functions efficiently. PMDs can implement multiple levels of logic without sacrificing input/output or I/O cells or pins.

programmable overhead crane. Overhead cranes, under computer control, used in a manufacturing environment for the purpose of moving materials.

programmable read-only memory (PROM). A nonvolatile solid-state memory circuit that is programmable only once, with special equipment. It is a ROM that may be programmed after manufacture by blowing fuse links or shorting base-emitter junctions. PROMs provide fast access to frequently needed data and instructions. They allow a vendor company to customize a system before delivery to the user.

projection/aligner lithography. A masking step that uses mirrors instead of lenses. The wafer and mask are separated by distance, not allowing the entire wafer to be exposed. This process lines up two or more layers of a wafer so that the components of one layer are compatible with the components of the other layer. (See also **lithography**.)

projection microradiography (PMR). An electron beam is focused onto an extremely fine pencil, generating a point source of x-rays; enlargement is achieved by placing the sample very near this source and several centimeters from the recording material.

project management. A software application that supports the ordering of activities across time. Functions assist in planning and implementing a project by providing tools for forecasting project requirements, projecting costs, and providing other charting and analysis project parameters.

proprietary. 1: A computer program or device that is owned by a company; the use may thus be restricted in some manner or entail payment of a fee. 2: A program or device that is exploited commercially as a separate product.

prosthetic medical equipment. Equipment used in the surgical and dental specialties concerned with the artificial replacement of missing body parts.

protocol. A set of rules (not a program) for software programs to conform with in data communications. A program that reacts properly to data sent to it in a form that does not conflict with these rules and that sends data in conformance with these rules is said to support, or be in compliance with, the particular protocol. An example of a protocol is the one used by humans over

two-way radio: the protocol is that one person finishes speaking by saying "over"; the other party then speaks, until finished and says "over"; the end of transmission is signalled by saying "over and out." Examples of protocols in data communications are BSC (IBM) and T201 (Tymnet).

proximity/contact lithography. An exposure that places a mask in direct contact with the wafer after the mask is aligned. With proximity, the mask does not come into direct contact with the wafer. (See also **lithography**.)

public data network service. A packet-switched or circuit-switched network service available for public use. It includes the equipment and service charges associated with data communications networks that are offered to the general public. These networks connect user terminals and computers to the network and may offer enhanced or value-added services, such as conversion of speeds, codes, protocols, electronic mail, or facsimile.

public packet data switching. Same as packet data switching, except for public use. (See also **packet data switching**.)

public school or institution. A school or institution controlled and operated by publicly elected or appointed officials and deriving its primary support from public funds.

public switching equipment. Equipment used in public telecommunications to switch or route voice and data calls. This segment includes equipment such as digital central office switching equipment and digital access cross-connect systems.

public telecommunications equipment. Equipment that includes public network services and equipment. It includes the various voice and data communications services provided by common carriers and the transmission and switching equipment used to implement these networks.

public telecommunications service. A service provided by public telecommunications carriers. It includes services such as local telephone, long distance telephone, international telephone, leased circuit, public data network, enhanced network, and mobile communications.

public transmission equipment. The equipment used in public telecommunications to transmit voice and data signals. It includes equipment such as multiplex equipment, carrier equipment, microwave radio equipment, and satellite earth state equipment.

publishing. 1: The business or profession of the commercial production and issuance of literature and information. 2: Computer-aided systems to automate the creation and printing of documents.

punch/shear/bend programmable machine tool. Describes the action that occurs to a composite or material, generally metal, on a machine. Punching literally punches a hole in the material, shearing cuts the material, and bending forms the material to a specified predetermined shape. These three activities are performed on three separate machines.

purchasing. A software application that has computer-assisted generation or procurement documents specifying materials, quantities, and delivery times.

purchasing and vendor management. Contains statements as to the quantity, description, and price of the goods; agreed terms as to payments, discounts, date of performance, and transportation.

Q

quality. The measure of how well a product or service meets customer expectations. Alternately, the ability to produce consistently a product or service within control limits or well-defined specifications.

quality assurance. The establishment and execution of procedures to measure product quality and adherence to acceptance criteria.

query language. A generalized computer language that is used to interrogate a database.

R

R&D. See research and development.

RAM. See random-access memory.

RISC MPU. See reduced-instruction-set computing microprocessor.

ROM. See read-only memory.

RTP. See rapid thermal processing.

radar. A radio device used to locate objects by frequency waves reflected off the object and received by the sender, allowing the sender to determine characteristics of an object. Includes airborne, shipboard, and ground search, flight control acquisition, detection, tracking, and associated test systems.

radio. 1: The use of electronic waves/signals to produce sound. 2: This category includes home radio receivers including AM, AM-FM, and FM radios that are classified as table models, clock models, and portable radios. This category does not include high-fidelity receivers, radio-phonograph combinations, and television receivers, nor does it include automobile radios, stereos, or tape players.

railroad control. A real-time software application that monitors and controls railroad and urban rapid transit traffic.

random-access memory (RAM). An integrated circuit permitting read and write access to any memory cell or address in a completely random sequence. Can be of either bipolar or MOS technology process. 1: A memory device with the qualities of allowing arbitrary reading or writing of a desired data location. The system accesses the addressed material without reading through intervening data. Information may be retrieved more speedily from RAM than from serial media, such as tape. Also called read-and-write and scratch-pad memory. 2: A memory that pulls up stored information immediately when addressed. 3: Storage component from which information can be removed with a speed independent of the location of the information in storage. 4: A memory which can be written into or read by locating any data address. 5: A device that permits interrogation of any minimum cell in random sequence.

range/oven. An appliance used for cooking with heat. An enclosure with burners and heating elements.

rapid thermal processing (RTP). Process that uses machines of low temperature for contact alloying and systems for the deposition of thin gate oxides. Similar to the diffusion furnace.

reactant gas. Molecules that act upon one another to produce a new set of molecules.

read-only memory (ROM). 1: Computer memory that can be read from but not written to. Permanent memory on chips wherein information can be retrieved but not stored. Memory is not lost when the power to the computer system is turned off. 2: A memory device the contents of which can be read but not altered.

real estate. An environment or industry that includes owners, lessors, lessees, buyers, sellers, agents, and developers of real estate.

real-time clock. A clock that indicates actual time, such as elapsed time, as opposed to a fictitious time established by a program.

real-time data acquisition and control. 1: The process by which events in the real world are translated to machine-readable signals. 2: Automated systems in which sensors of one type or another are attached to machinery. 3: Data processing is performed so that the results are available in time to influence the controlled or monitored system.

reconnaissance. Equipment used to secure data/information about activity and resources concerning an enemy or potential enemy's territory.

reduced-instruction-set computing microprocessor (RISC MPU). The number of instructions a microprocessor runs for a specific application are reduced from a general-purpose complex-instruction-set computer (CISC) processor to create a more efficient computing engine.

reel-to-reel tape drive. A tape format in which the running tape is wound onto a separate take-up reel. Also known as open reel.

refrigerator. An appliance that keeps food and beverages cool and prevents spoilage.

relay. 1: An electronic or electromechanical device for transferring a signal from one electrical circuit to another. 2: To forward a message through an intermediate station. (See also passive device.)

remote batch. A method of entering jobs into the computer from a remote terminal.

remote control. Any system of control performed from a distance. The control signal may be conveyed by intervening wires, sounds, light, or radio signals.

remote processing. A procedure in which the operating system can be used to process messages received from remote locations via telephone lines and telephone equipment. In effect, it is an extension of the data processing and programming facilities of the computer to remote locations.

remote sensing. The acquisition of information (usually in the form of an image) about an object or area by recording electromagnetic radiation emanating from or reflected from the target. The electromagnetic energy is received and processed by a detector system that is not in physical contact with the target under study. Common platforms for detector systems are aircraft and satellites, but the definition is not restricted to these two.

removable media disk drive. Removable media rigid disk drive has the platter enclosed in a housing that is designed to be user-accessible.

replacement demand. The total end-user demand for replacement equipment (as compared with new placements).

research and development (R&D). Basic and applied research directed toward the discovery, invention, design, or development of new products and processes.

research supercomputer. An information system defined by a minimum of 32 low-performance computing nodes. Optimized to run highly parallel applications. Price ranges between \$300,000 and \$2 million. Examples of highly parallel processors are Thinking Machines CM-1 and Intel iPSC.

residential smoke alarm. A device that is actuated automatically when smoke is exposed, which is kept in the home. (See also alarm system.)

residual value. The value of a product at the end of its useful life. Typically used with depreciation and leasing calculations.

resistor. A passive device that measurably opposes the passage of an electric current (e.g., doped silicon). (See also *passive device*.)

respiratory analysis. Equipment used to examine, detect, and analyze the respiratory system.

retail trade. An environment or industry that includes establishments engaged in selling merchandise for personal or household consumption and rendering services incidental to the sale of the goods. In general, retail establishments are classified by kind of business according to the principal lines of commodities sold.

retirement. The number of products that are removed from active, day-to-day use. A product is considered retired from the installed base if it is scrapped, returned to the manufacturer, or placed in storage.

revenue. The amount charged to customers for goods and services sold (equals average selling price times units).

rigid disk. See *rigid disk computer storage media*.

rigid disk computer storage media. A rigid disk has a nonflexible substrate and can be made of aluminum, plastic, glass, or other rigid material.

robot. A reprogrammable multifunctional manipulator designed to move objects through variable motions for the performance of a variety of tasks. Intelligent robots commonly rely on vision systems to control their behavior through their ability to recognize objects.

robotic electronic assembly. Electronic manipulative machines that can perform functions ordinarily ascribed to humans in the assembly of material.

robotic nonelectric assembly. Same as robotic electronic assembly except that robots are mechanically maneuvered rather than through the methods and principles of electronics.

robot programming and simulation. The use of computer-controlled manipulators or arms to

automate a variety of manufacturing processes such as welding, material handling, painting, and assembly.

robot system. Programmable manipulative machines that can perform functions ordinarily ascribed to humans. Included are robotic mechanisms, control hardware and software, and all associated peripheral equipment. These peripherals include end effectors and grippers that are used for the processing of parts, tools, and assemblies within the factory.

route. A software application that includes route planning—software used to schedule the sequence of stops a transport vehicle makes.

S

SFDSP. See *special-function DSP products*.

SIDM. See *serial, impact, dot matrix*.

SIFF. See *serial, impact, fully formed*.

SIO. See *serial input/output*.

SNDT. See *serial, nonimpact, direct thermal*.

SNIJ. See *serial, nonimpact, ink jet*.

SNTT. See *serial, nonimpact, thermal transfer*.

SRAM. See *static random-access memory*.

STTL. See *Schottky TTL*.

safety and convenience. Equipment related to the automobile and truck industry including devices that prevent loss, hurt, or injury, or that lend ease and comfort to passengers. Examples include: climate control, light reminder, keyless entry, heated windshield, sensing wipers, automatic door lock, automatic headlights, dimming, rear window defogger, antiskid braking, window control, and airbags/restraint control.

satellite. 1: A specialized radio transmitter/receiver placed in orbit around the earth to provide transmission channels for information to be transmitted over great distances. 2: A celestial body orbiting another of larger size.

satellite communication equipment. Equipment used for communication by use of an active or passive satellite to extend the range of a radio, or other transmitter, by returning signals to earth from an orbiting satellite.

satellite earth station equipment. The total earth-based equipment used in connection with orbiting, geostationary satellites. This category includes the Very Small Aperture Terminals (VSAT), as well as the antennae and electronic transmitting/receiving terminals.

scheduling. A software application that allows events to be scheduled. It usually is used by an organization that does heavy scheduling, such as a doctor's office.

scholarships and fellowships. College expenditures applying only to money given in the form of outright grants and trainee stipends to individuals enrolled in formal coursework, either for credit or not. Aid to students in the form of tuition or fee remissions is included. College work-study funds are excluded from this category and are reported under the program in which the student is working.

Schottky TTL (STTL). A form of transistor-transistor logic using Schottky diodes as transistor clamps to increase the speed of circuit operation. A high-speed form of bipolar logic.

scientific application. A diverse group of software applications covering varied subject matter and research on the natural sciences when these are concerned with the physical world and its phenomena. Applications are divided into two subcategories: general analysis and scientific research. General analysis is the use of computers to solve various technical problems and to further research on subjects; this use is generally mathematical in nature. Scientific research applications are used specifically in the following fields: thermonuclear chemistry, nuclear physics, general physics, mechanical sciences, electronics research, geophysics, fluid dynamics, thermodynamics, materials research, and genetic engineering.

scientific not elsewhere classified (N.E.C.). Scientific equipment that is not listed above but is tracked by the Department of Commerce (DOC).

scientific research. A software application that pertains to research and development, not to applied science.

scientific visualization. An image computer is used for scientific modeling, technical data analysis, medical imaging, or similar large-volume data analysis.

security. 1: The existence and enforcement of techniques that restrict access to data and the conditions under which data can be obtained. 2: A measure taken by a command to protect a system from espionage, observation, sabotage, annoyance, or surprise. 3: Protection of a system by use of commands and codes.

security/energy management. Safety and power management within industrial equipment and manufacturing.

seismic analysis. 1: Seismic analysis helps support exploration activities by indicating favorable conditions for finding oil or coal reservoirs. 2: Analysis relating to an earth vibration caused by earthquakes, or other natural phenomena.

semiconductor. 1: A material that is neither a good conductor nor a good insulator and with electrical properties that can be altered by the selective introduction of impurities into its crystalline structure. Its resistivity can sometimes be changed by light, an electric field, or a magnetic field. 2: An electronic device made using semiconductor material.

semiconductor production equipment. Machinery used to produce wafers in the semiconductor industry.

semiconductor tester. Equipment designed to test, check, and monitor the functionality of electronic circuit packages of varying complexity and functionality.

serial, impact, dot matrix (SIDM). A printer that creates a character image by selectively placing individual dots on the substrate using mechanical force.

serial, impact, fully formed (SIFF). A printer that prints one character at a time using type elements to create fully formed character impressions.

serial input/output (SIO). 1: A device that permits data to be transmitted into and out of a computer over a single conductor one bit at a time. 2: Pertaining to time sequential transmission of, storage of, or logical operations on parts of data words. 3: A technique for handling binary data words (which have more than one bit). 4: A device or technique where data is transferred to or from an I/O port in a serial or in-line manner.

serial, nonimpact, direct thermal (SNDT). A printer that creates the desired image a dot at a time using point-specific heat and a heat-sensitive substrate that changes color when exposed to heat.

serial, nonimpact, ink jet (SNIJ). A printer that creates the desired image a character at a time by emitting ink from an array of orifices or nozzles.

serial nonimpact, thermal transfer (SNTT). A printer that creates the desired image a dot at a time using point-specific heat to transfer ink from a ribbon to a receiving substrate.

services. Intangible items of trade, such as education, transportation, banking, and legal and medical care.

sheet feeder. A microprocessor-controlled printer peripheral device. The sheet feeder is mounted on top of the printer and automatically inserts cut sheets into the printer and receives the ejected paper in a hopper. Feeder commands may be embedded in the text, placed on format pages, or issued from the print menu. Sheet feeders may be single or dual tray for the feeding of letterhead and second sheets, or they may incorporate an envelope-feed tray for the printing of letters and envelopes simultaneously. Such a device also may be a dedicated envelope feeder.

shipment. The number of products delivered.

shop floor and cell control. A system for utilizing data from the shop floor as well as data-processing files to maintain and communicate status

information on shop orders and work centers. Provides actual output data for capacity control purposes.

shop floor planning and control. See **shop floor and cell control.**

silicon epitaxy deposition. A process through which vaporized silicon is deposited on a wafer. (See also **deposition.**)

silicon precursor gas. A specialty gas used in semiconductor manufacturing. Gases such as silane, dichlorosilane, trichlorosilane, and silicon tetrachloride are used in epitaxial and chemical vapor deposition (CVD) processes to deposit layers of silicon or silicon components onto silicon substrates.

silicon wafer. A nonmetallic element that is the most widely used semiconductor material today. Silicon is used in its crystalline form as the substrate of semiconductor devices.

simulation. The use of representative or artificial data to reproduce various conditions in a model that are likely to occur in the actual performance of a system. Simulation frequently is used to test the behavior of a system under different operating policies.

simulation and training equipment. Equipment used to augment the acting out of real-life maneuvers/exercises as training in preparation for real-life situations. Equipment includes aircraft, flight and situation simulators, equipment operation, and maintenance systems.

single-strike ribbon. A film ribbon. Each time a character strikes the ribbon, the ribbon advances far enough so that the next character has a completely new ribbon area to strike. The ink formulation is such that the ink on the ribbon is depleted from the area where the print element strikes the ribbon. These ribbons produce the highest print quality, but ribbon life is low compared with that of fabric and multistrike ribbons.

single-user enhanced system. See **workstation computer.**

single-user system. A computer system inherently designed for a single user.

size. 1: A relative aggregate amount or number. One of a series of graduated measures conventionally identified by numbers or letters. 2: Physical magnitude, extent, or bulk; relative or proportionate dimensions.

slow SRAM. A random-access memory (RAM) integrated circuit (IC) that runs between 70 and 120 nanoseconds. (See also static random-access memory.)

small department computer system. An information system with prices ranging from \$25,001 to \$75,000. Main memory capacity ranges from 1MB to 16MB, disk capacity from 30MB to 2GB. CPU bit width ranges from 16 to 32 bits. System requires no special environmental controls and typically is supported entirely by nontechnical end users, with no intervention by either local or remote computer systems support professionals. Number of concurrent users ranges from 11 to 20. Examples of models are the IBM System/36 models 5360 and 5362, DEC Micro VAX II, and the HP series 3000 model 37.

small format pen plotter. A computer plotter that uses engineering-size A (8.5 x 11 inches) or B (11 x 17 inches), architectural-size 1 (9 x 12 inches) or 2 (12 x 18 inches), or metric-size A4 (21 x 29.7 centimeters) or A3 (29.7 x 42.0 centimeters) media. (See also plotter.)

small-signal diode. A diode with a forward current of less than 100 milliamperes (0.1 amperes). The sides of the silicon chip are metallized and encapsulated in a tubular glass package.

small-signal transistor. A transistor that dissipates power of less than 1 watt.

smart card. A credit card or credit-card-size device that contains one or more integrated circuits. These devices usually are carried by an individual. Common applications include financial transactions, record keeping, and user identification.

smart interactive terminal. See intelligent terminal.

smart power. An integrated circuit (IC) that contains both control logic circuits and power control elements.

smoke alarm. A detector that is activated automatically when exposed to smoke.

socket. An opening that supports and electrically connects to vacuum tubes, bulbs, or other devices or components when they are inserted into it.

software. 1: Any set of explicit procedures constituting a computer program. 2: Programs, procedures, rules, and any associated documentation pertaining to computer operations.

software support service. Activities that assist the customer in use and implementation of software products. Software support includes bug fixing, updates, and documentation, as well as support of ongoing operating problems including product-specific consulting, programming services, and training.

solar cell. A pn junction device that converts the radiant energy of sunlight directly and efficiently into electrical energy.

solid modeling. Representation of all the external and internal geometry of a part, allowing the solid nature of an object to be represented in a computer. Solid models are constructed in two ways: using primitive building blocks (constructive solid geometry) and/or using boundary definitions (boundary representation).

solid state. Pertaining to circuits and components using semiconductors. (See also semiconductor.)

solid-state subsystem. Computer memory products that comprise a block of semiconductor memory, a controller/formatter for it, a power source or access to power, a host bus interface, hardware, and software. These include modules external to the computer and kits for installation inside computers.

sonar. A device used to detect submerged objects by sonar waves reflected off the object. Also can be used to measure depth or distance. Includes search, detection, tracking, guidance, navigation, communication, sonabuys, and associated test systems.

space military equipment. Military equipment used beyond the earth's atmosphere. Includes satellites with accompanying communication and reconnaissance equipment, various other space platforms, launch vehicles, and ground control.

special-function DSP products (SFDSP). Products built using DSP techniques and architectures but are designed for specific functions. Examples include: modems, codecs, speech processors, digital television circuits, digital filters, and fast Fourier transform (FFT) chips. Generally, these devices cannot be programmed by users to perform operations other than their defined function.

special-purpose computer system. A computer system designed for a specific purpose. For example: a banking computer system, word processor, or cash register.

specialty gas. A gas supplied in gas cylinders rather than in discrete deliveries, because smaller volumes are used.

splice. A joint used to connect two lengths of conductor with good mechanical strength and good conductivity. (See also passive device.)

spot-welding robot system. A robot carries a resistance welding gun to produce welds.

spreadsheet. A software application with the principal function of organizing data into columns and rows to allow the user to perform numerical analysis.

standard cell. An integrated circuit designed to a customer's specifications using precharacterized cells as building blocks.

standard logic. Off-the-shelf integrated circuits belonging to "families." Bipolar digital families include AS, FAST, LS, and ALS. MOS digital families include HC, HCT, and FACT. Standard logic is available from a number of suppliers and may be used in many different applications. Sometimes referred to as glue logic.

start-stop tape drive. A tape drive that starts and stops on reading or writing a data record.

state government. One of the constituent units of a nation having a federal government.

static random-access memory (SRAM). A RAM that maintains memory as long as power is applied and does not require refreshing. Seam densities can range from 1K, with approximately 1,000 bits, to 4Mb, with approximately 4 million bits.

statistic. A quantity that is computed from a sample; estimate.

statistical multiplexer. An electronic device that consolidates several data streams onto a single high-speed bit stream for transmission over a telephone line.

stepper. A device that uses a step-and-repeat process to transform the pattern image of the reticle or mask onto the surface of the wafer.

stereo headphone. A device worn on the head that permits the transmission of sound through two earphones connected by a band.

stereo (hi-fi) component. Equipment that produces high-fidelity reproduction of sound.

storage controller board. 1: A board containing input data or parameters for an application of a general routine. 2: Those parts mounted on a board that carry out the instructions in proper sequence, interpret each instruction, and apply the proper signal.

storage management. Functions that manage the storage of information in which information can later be retrieved. Includes storage protection, storage temperature, storage print, and storage allocation.

storage subsystem. Computer memory product that comprises a storage device(s), a controller/formatter for it, a power source or access to power, a host bus interface, hardware, and software. These include modules external to the computer and kits for installation inside computers.

streamer tape drive. A tape drive that uses a continuously moving tape; one that does not start and stop on each data record.

streaming tape drive. Tape drives (1/4-inch and 1/2-inch width) where the data streams over the head without stopping (continuous flow).

structural modeling/analysis. A software application for modeling and analysis of the integrity of a structure.

studio transmitter link. Equipment used to generate and amplify a radio signal.

subsidiary. In finance, a company wholly controlled by another.

supercomputer. A high-performance computer designed for numerically intensive applications. The current price ranges from approximately \$100,000 to \$20 million.

superminicomputer. An information system with price ranging typically from \$100,000 to \$1 million, with a minority below \$100,000. CPU bit width ranges from 32 to 48 bits, with emphasis on 32. Environment is almost exclusively an ordinary office with no special environmental controls. Equipment typically is supported full-time by a professional computer systems support staff of fewer than 10 members. It usually is built around proprietary processor and typically supports from 32 to 350 concurrent users. Examples of models are the HP 3000/930 and 950, DEC VAX 8700 and Micro VAX 3500, and IBM 9370.

superworkstation. A superworkstation has higher graphics performance than a traditional workstation. It also has a higher processing performance rating to support graphic computations. The average price is \$40,000 to \$80,000 with performance ratings of 8 to 20 mips and 2 to 16 mflops.

surgical support. Equipment relating to, or having connection with, surgery.

surveying and drafting instrument. An instrument used to detect, access, and measure radiation. The instrument is used in the drawing of objects, structures, or systems by engineers and scientists.

switch. 1: A mechanical or electrical device that competes with or breaks the pattern of a current or sends it over a different path. 2: A device that connects, disconnects, or transfers one or more circuits and is not designated as a controller, relay, or control valve. (See also passive device.)

system management. The administration and operation of a computer system including staffing, scheduling, equipment, and service contract administration, equipment utilization practices, and time-sharing.

systems integration service. The implementation phase of tying together dissimilar devices. Services are coordinated by a single contractor who manages the procurement, installation, integration, and support of all software, hardware, and communications devices.

system software. Software that provides support structure in which applications may operate. This includes operating systems, operating environments, and utilities.

systems planning and design. "Front-end" consulting services that are required to determine the nature of a customer's needs and the actions necessary to meet those requirements.

system subroutine library. An organized collection of computer programs that is maintained on-line with a computer system by being held on a secondary storage device and is managed by the operating system.

system support peripheral. An integrated circuit (IC) considered a traditional peripheral, where each processor has a set of six to eight dedicated peripherals that provide rudimentary functions necessary to construct a microprocessor (MPU)-based system. (See also traditional peripheral.)

system utilities. Products that aid in the maintenance and/or repair of computer hardware, operating systems, or data recovery.

T

T-1 multiplexer. An electronic device that consolidates or pools multiple digital streams representing voice or data signals onto a single high-speed T-1 data line. A T-1 line operates at 1.544 Mbits/second and allows multiplexing of twenty-four 64-Kbit/second channels on a single line.

TDM. See time-division multiplexer.

TELEX. See TELEprinter EXchange.

TLX. See TELEprinter EXchange.

TTL. See transistor-transistor logic.

tape drive. A class of computer backup device that uses reel-to-reel, cartridge, or cassette tapes as media.

tape recorder. A device that records and plays sound from magnetic tape.

tax accounting. A software application concerned with keeping records for tax purposes, setting up accounts for paying taxes, making tax computations, and preparing tax returns.

teaching machine and aid. Equipment designed to assist in the training, educating, and instructing of persons to acquire knowledge or skill in a particular field(s) of interest.

technical data analysis. A software application used to analyze technical or experimental data in the most expedient, accurate way. These data may have been generated from instruments, captured from other electronic measuring devices (such as thermocouples or strain gauges), or generated by other analysis programs.

technical productivity. A software application that enhances the productivity of technical disciplines and is specialized for the engineering, scientific, or manufacturing fields.

technical publishing. A system with the main purpose/use of printing user manuals or guides; manuals that explain the operation of a product to the user.

telecom integrated circuit (IC). An analog IC used with telecommunications equipment. Equipment ranges from telephone switching systems in small private automatic branch exchange (PABX) systems to huge public network facilities serving thousands of subscriber lines.

telecommunications. Products and services that provide or manage the flow of information from person to person, person to machine, machine to person, or machine to machine. The telecommunications market is segmented into a combination of the premises and public telecommunications market segments.

telecom services. Includes that portion of telecommunications charges related to access and use of the public network. These charges typically are seen as a monthly usage charge for local, long distance, and private line access/utilization.

telemarketing. A sales method that employs a sales force to move a product through the distribution channel by contacting the consumer via the telephone. Also referred to as inside sales.

telemetering system. See **telemetry**.

telemetry. Transmission of data from remote measuring instruments by electrical or, usually, radio means.

telephone. Nonelectronic terminal or handset used for voice and data transmission and communications. It functions as an interface between a user and a telephone switching system.

TELEprinter EXchange (TELEX). An automatic exchange service provided by Western Union in the United States.

tension arm tape drive. A 1/2-inch reel-to-reel tape drive that uses mechanical tension arms to provide tape tension and buffing.

terminal equipment. 1: A device at a node of a network through which information can be entered, extracted, or monitored. 2: Any device capable of sending and/or receiving information over a communications channel. Includes a keyboard and display that cannot stand alone because it lacks processing capability. Terminals are usually simple ASCII text-entry devices. 3: Equipment essential for controlling the transmission and/or reception of messages.

terms and conditions. A contract regarding provisions that are stated or offered for acceptance that determine the nature and scope of the agreement.

test and measurement. The process of determining the magnitude of the response of an object to a given stimulus. Also the degree to which an object may be characterized along a dimension (quantification of an entity). Computer-based inspection and test systems used for quality and/or process control data analysis; data may be collected by manual input or sensory devices.

test equipment. Equipment designed to test, check, monitor, and identify varying degrees of device functionality and complexity that may include quality, speed, and performance. Automated test systems and equipment such as IC

testers and PC-board testers, as well as general test equipment (such as oscilloscopes, spectrum analyzers, and digital multimeters).

text capture. Process whereby words or groups are controlled.

therapeutic. Medical applications involved in treating specific medical conditions.

thermal. See **direct thermal printer**.

thermal plotter. 1: A process that produces a visible image by heat-induced chemical reactions or chemically reactive media. 2: A thermally induced phase change process of a pigment-binder mixture, which is transferred from a donor sheet to the media.

thermal transfer printer. An imaging process using heated printing elements to produce prints or copies; can be either dye diffusion (coated paper) or wax based (plain paper). This process currently is used in electronic printing, facsimile machines, and full-color copiers.

thimble. A thimble-shaped print element that floats freely across the platen of a character printer, working in a similar fashion to a daisy-print element.

thyristor. A type of diode that consists of a four-layer slice of silicon. The device is characterized by continuous switching. Once a thyristor has been triggered into conducting current, it will continue to conduct current until the main current falls to zero.

ticketing. A software application that supports the sale and management of tickets. The application may be as simple as ticketing a single event or as complex as ticketing airline reservations.

tie ratio. A mathematical factor that forms a relationship between two or more product units.

time and materials service. Remedial repair services on a per-call basis. Pricing is based on the actual length of time-to-repair, travel charges, and specific parts or materials required to complete repairs.

time-division multiplexer (TDM). A process for transmitting two or more signals over a common path by using successive time intervals for different signals.

toner. A wide variety of materials used to form black (or colored) images on a photoconductive surface, which are transferred onto paper to form a print. All toners must use a carrier that transports the charged toner particles to the photoconductor; additionally, the carrier helps remove toner from nonimage areas. Also known as developer. Types of toner include dry, dual component, dry monocomponent, and liquid.

tools. A software program that is used by application developers or sophisticated end users to create applications. Examples are spreadsheets, word processors, editors, macro languages, screen painters, and report generators. Tools are higher-level products than languages; a tool is written in a language. Unlike languages, most tools are non-procedural, i.e., they do not require users to create code that is sequentially executed. A good example of this is a spreadsheet, where the developer/user navigates up, down, and sideways with the arrow keys or mouse and can add or delete rows and columns at any time. Examples of tools include LOTUS 1-2-3 (spreadsheet); Multimate (word processor); EDLIN (line editor); and Oobjectworks (graphical editing and object manipulation environment.)

tower personal computer. A personal computer designed to stand vertically for placement underneath the user's desk. The primary design distinguishes a tower computer from a desktop computer with sideways orientation and would include drivebays remaining horizontal with the desktop or floor.

toy. Electronic objects that a child or adult can play with.

traditional peripheral. An integrated circuit that has an intermediary control device, which links a peripheral unit to the control processors.

traditional workstation. A midrange workstation priced between \$15,000 to \$50,000. Its performance ratings are 4 to 15 mips and 0.5 to 2 mflops.

traffic control. A real-time software application, mechanism, and system used to monitor and control, exert control over and/or enforce the movement of vehicles.

transducer. Any device or element that converts an input signal into an output signal of a different form. (See also *passive device*.)

transistor. Can be manufactured in bipolar or MOS technology process. A bipolar transistor consists of a sandwich of doped silicon layers. The transistor has three electrical connections: base, emitter, and collector. Each of these areas provides access to one of the doped regions. The transistor can act as a current-amplifying device or switch, as follows: 1: Current amplifying—a small change in a small current flows between the collector and the emitter. 2: Switch—a sufficiently large voltage applied to the base causes the maximum amount of collective current to flow.

transistor-transistor logic (TTL). A logic circuit design with the diode inputs replaced by a multiple-emitter transistor.

translator. The process performed by an assembler, compiler, or other routine that accepts statements in one language and converts them to another language. 2: A device that transforms signals from one form to another form. 3: A system that has a number of inputs and outputs and is connected so that input signals representing information expressed in a certain code result in output signals that represent the input information in a different code.

transmitter. 1: A device for transmitting a coded signal. 2: The carbon device in the telephone handset used to convert speech to electrical energy.

transparency. The property of being insensitive to the meaning of a code being manipulated. An example is a paper-tape transmitter capable of transmitting any code submitted to it. If a device interprets and reacts to coded information that it is handling, it is said to be code sensitive (not transparent).

transportable personal computer. The transportable case style is not conducive for operation on the user's lap and is designed primarily for

transportability. It is designed to be moved easily from place to place. The computer is completely self-contained and can be carried as a single unit that includes the keyboard, display, mass storage, and main system unit.

transportation. An environment or industry that includes establishments providing, to the general public or the other business enterprises, passenger and freight transportation.

transportation electronic equipment. Electronic equipment used in the automotive railway and airline industry.

transportation management. The planning, analysis, and control of activities for transporting or being transported.

two-year college. A postsecondary school that offers general or liberal arts education usually leading to an associate degree or courses that are creditable toward a baccalaureate degree.

two-year institution. An institution legally authorized to offer and offering at least a two-year program of college-level studies that terminates in an associate degree or is principally creditable toward a baccalaureate degree.

typewriter. A machine for writing in characters by means of a keyboard operated by striking through an inked ribbon. Usually refers to the standard office typewriter (mechanical, electrical, or electronic).

U

UART/USART. See *universal asynchronous receiver/transmitter/universal synchronous asynchronous receiver/transmitter*.

UNIX. See *UNIX*.

UV EPROM. See *ultraviolet electrically programmable ROM*.

ultrasonic cleaners, drills. 1: An instrument used to clean debris and swarf from surfaces by immersion in a solvent in which ultrasonic vibrations are excited. 2: A drill in which ultrasonic vibrations are generated by the compression and extension of a core electrostrictive or magnetostrictive material.

ultrasonic generator. A generator consisting of an oscillator driving an electracoustic transducer used to produce acoustic waves.

ultrasonic scanner, medical. A device that produces a picture display of ultrasonic frequency waves sent through the sample to be inspected or examined.

ultraviolet electrically programmable ROM (UV EPROM). An EPROM that is erasable with an ultraviolet light source.

unit. A single quantity.

universal asynchronous receiver/transmitter/universal synchronous asynchronous receiver/transmitter (UART/USART). An electronic circuit that converts data between the parallel format and the serial format transmitted sequentially over a communication line.

UNIX. An operating system designed to be used with microprocessors and with the C programming language.

useful life. The economic life of a product. Typically used to determine depreciation and leasing schedules.

user interface. 1: The point at which a user interacts with a computer. 2: An interactive computer program that sends messages to and receives instructions from a terminal user.

users per system. The typical number of simultaneous users that a computer system will support.

utilities. An environment or industry that includes establishments providing electricity, gas, steam, water, or sanitary services to the general public or to other business enterprises.

V

VAR. See value-added reseller systems integrator.

VAX/VMS. A Digital Equipment Corporation standard multiuser operating system.

VCR. See videocassette recorder and player.

VTR. See videocassette recorder and player.

vacuum column tape drive. A 1/2-inch reel-to-reel tape drive with start-stop capability that uses vacuum columns to provide tape tension and buffering.

value-added reseller (VAR) systems integrator. A product reseller that integrates hardware, software, and/or services; it does not apply its label to the product. Systems integrators are a type of VAR and may or may not own the hardware or software.

vending machine. A coin-operated machine for purchasing merchandise.

vertical-turning programmable machine tool. The tool of a machine that holds a workpiece along the vertical axis for a certain function to be performed such as boring, drilling, and cutting.

video. 1: Relates to the bandwidth (megahertz) and spectrum position of the signal arising from television scanning. 2: The reception or recording of electronic signals that create images on a screen or display.

video camera. A camera that records visual images and sounds on magnetic tape.

videocassette recorder and player (VCRs or VTRs). A complete system that has a tape format such as beta, VHS, or 8mm.

videodisk player. A complete video system that has a disk format.

video equipment. Equipment includes amplifiers, television cameras, and other equipment such as synchronization equipment, live cameras, and control consoles.

video home system (VHS) helical scan tape drive. A 13mm helical scan tape drive commonly used for recording television broadcasts.

video teleconferencing. Equipment and services related to one-way and two-way video communications that use specialized video equipment and/or transmission networks. These communications enable conferencing between locations.

videotex. An information delivery system that uses information from a database that allows the user to interact with the service, selecting information to be displayed on the user's CRT providing financial services, electronic mail, and teleshopping.

voice-messaging system. A computer-based system that enables flexible, nonsimultaneous voice communications. This definition does not include personal-computer-board-level products.

voice-recognition computer device. The capability of a computer to recognize spoken commands. Each user must first "train" the computer by speaking a series of words that the computer can analyze and match with stored information.

voice synthesizer. A device that simulates speech by assembling a language's elements under digital control.

voltage regulator and reference IC. 1: A device that provides power to other circuits at a specified DC voltage. 2: A device that provides a specified constant DC voltage to a load over a wide range of variations in input voltage and output current.

W

WORM. See write-once, read many.

WP. See word processor.

wafer. A thin (10 to 20 mils) disk of semiconductor material from which semiconductors are fabricated.

wafer fab. The integrated circuit production process—from raw wafers through a series of diffusion, etching, photolithographic, and other steps to finished wafers.

wafer inspection. Inspection of patterned wafers for process defects by visual and image-processing techniques.

washer and dryer. Machines used to wash and dry clothes.

watch. A device that measures the movement of time through electronic pulses.

water quality and sewage control. A real-time software application that monitors and controls water quality and sewage.

web ribbon. Web or towel ribbons are wide ribbons used on line, dot matrix, and line, fully formed printers. They are as wide as the print line is long—usually approximately 15 inches.

wet etch. Immersing method for wafers in an etching solution. Chemical removal of a material by bathing the wafer in acid.

white-collar worker. A person working in an occupation classified by the Bureau of Labor Statistics under the following category headings: managerial and professional specialty and technical, sales, and administrative support.

wholesale trade. An environment or industry that includes establishments or places of business primarily engaged in selling merchandise to retailers; to industrial, commercial, institutional, farm, construction contractors, or professional business users; or to other wholesalers; or acting as agents or brokers in buying merchandise for or selling merchandise to such persons or companies.

word processing. 1: A system of trained personnel, specific procedures, and automated equipment that provides more efficient and economical business communications than the "traditional office;" usually involves the transformation of information into readable form. Operations include interactive information retrieval systems, management information systems, text editing, translation, and typesetting. 2: A software application with the principal function of editing, entering, and formatting text.

word processor (WP). A standalone word processor capable of functioning independently from a central controller or storage device, although they may communicate with each other. These products generally have removable magnetic media. Products that have evolved from electronic typewriters generally are not included in this category. The ability to share a printer among workstations does not disqualify a product from being a standalone word processor; shared-system word processors are connected to an external file server or controller; word-processor file servers are centralized data storage devices that are accessible and dedicated to shared word processing units.

work force. All persons of either sex who furnish the supply of labor for the production of economic goods and services during a specified time period.

work group computer system. An information system with a price range of less than \$25,000. Main memory capacity ranges from 128KB to 4MB, disk capacity from 10MB to 150MB. CPU bit width ranges from 16 to 32 bits. Typically uses industry-standard, multiuser, multitasking operating systems such as UNIX, rather than proprietary control programs. Environment is usually an individual user's work area rather than a common work area. Numbers of concurrent users ranges from 2 to 10. Examples of models are the IBM System/36 PC and 5363, IBM PS/2 model 80, Altos 986, and Unisys B25 and B26.

workstation computer. A single-user computer that is distinguished from a personal computer by its features and by the user's potential migration path within the platform. A technical workstation is a system designed with integrated networking; high-performance graphics; floating point; coprocessor; and a virtual, multiuser/multitasking operating system (DOMAIN, UNIX, VMS). Users reach a migration path floor at the low end of the workstation product line. For example, the Sun 386i represents the technical workstation platform floor; the next move downward is to the personal computer platform.

workstation server. A workstation server is a general-purpose workstation specifically designed to provide high-throughput access to common files on one or several networks. The server fulfills the need for heterogeneous computers to share

resources. Workstation servers pertain to workstations only. This definition does not include multiuser systems configured to resemble servers.

write-once, read many (WORM). 1: The WORM optical disk market includes drives that can read and write data using various optical diskette media. 2: A data storage device using laser technology that uses a removable disk ranging in size from 3.5 to 14 inches.

X

X-ray lithography. A process that uses an X ray for generating a mask plate of direct image transfer to a wafer.

X ray, medical. Equipment used to detect, examine, treat, or analyze body systems through photographic X rays.

Y

year-average population. The installed base of a product computed at the midpoint between the beginning installed base and the ending installed base.

Z

zener diode. 1: A diode that has a controlled, reverse-voltage/current relationship. 2: A two-layer device that has a sudden rise in current above a certain reverse voltage.

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