

# IT Services Market Definitions Guide

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Gartner Dataquest Guide

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# Chapter 1

## Market Statistics Overview and Methodology

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Each year, Gartner Dataquest surveys IT services vendors to estimate annual sales and develop market size estimates for the major markets in the world. The survey covers more than 400 vendors active in one or more of the following product segments:

- Hardware maintenance and support
- Software maintenance and support
- IT professional services
  - Consulting services
  - Development and integration services
  - IT management services
  - Education and training services
  - Business process and transaction IT management services
- Education and training services

The information gathered from this survey enables Gartner Dataquest to maintain its dynamic database of vendor revenue data for each industry segment. The categories for which IT services revenue are reported are comprehensively defined for the purpose of providing clarity and guidance to survey participants as well as those who use Gartner Dataquest's IT services market data. These definitions are revised, altered, or expanded each year to reflect changes in the IT services market place.

Not all Gartner Dataquest services have the entire scope of information contained in this document. Some may have a greater level, and some may have less.

### Market Share Methodology

Gartner Dataquest's market metrics methodology combines primary and secondary sources to produce the Market Statistics documents. Gartner Dataquest surveys all major participants within the IT services industry in the Asia/Pacific, Europe, Japan, North America and Latin America regions. This primary research is supplemented with additional research to verify market size, shipment totals and pricing information. Sources of data used by Gartner Dataquest include, but are not limited to, the following:

- Interviews with manufacturers, distributors and resellers
- Information published by major industry participants
- Estimates made by reliable industry spokespersons
- Government data or trade association data
- Published product literature and price lists
- Relevant economic data
- Articles in both the general and the trade press
- Published company financial reports
- Reports from financial analysts
- Information and data from online and CD-ROM data banks
- End-user surveys

Gartner Dataquest believes its Market Statistics data is the most accurate and meaningful available. Despite the care taken in gathering, analyzing and categorizing the data, careful attention must be paid to the definitions and assumptions. Various companies, government agencies and trade associations may use slightly different definitions of product categories and regional groupings, or they may include different companies in their summaries. These differences should be kept in mind when making comparisons between data and numbers provided by Gartner Dataquest and those provided by other research organizations.

## Forecasting Methodology

We adhere to generic best-practice forecasting methodology guidelines that are supplemented as needed with specific methodology for each industry research area. Gartner Dataquest strongly believes that forecasting is the meeting ground for the qualitative art of intuition and the quantitative science of data analysis. A sound forecasting process incorporates both art and science into a logical and coherent series of steps that if conducted in an organized, management-supported fashion, will ensure forecasting effectiveness, reliability and accuracy in the analyst community will prove a valuable tool for developing sound market strategies.

## Forecasting Goals

Gartner Dataquest aims to provide clients with forecasts that are useful, credible, and as accurate as possible. Thus, it is important to provide clients with details of the assumptions that built the forecast. Gartner Dataquest realizes that clients evaluate the credibility of the forecast by evaluating both the historical accuracy and the quality of written forecast assumptions. Gartner Dataquest uses tools and processes that maximize Gartner's overall presence in the market research industry by sharing processes and time frames, so that a unified, coherent picture of the IT market is built.

For several years the process of developing IT market forecasts has been undergoing continued refinement at Gartner Dataquest. Today, the process draws upon Gartner Dataquest industry experts and client feedback to devise a forecast that is consistent internally and meets client expectations. The process assimilates vast amounts of both disparate and aggregated data that is molded into a forecast that is scrutinized and scrubbed by many seasoned analysts. The completion of a typical long-term forecast takes about three to six weeks depending on the product area, with several major steps.

The amount of time and effort that goes into a forecast varies from period to period and is also heavily dependent on the technology area being forecast. Generally, forecasts produced after the release of annual data are the most time-consuming and require the most attention. Also, unexpected economic changes can affect the complexity and duration of the forecasting process.

## Changes and Additions in Market Segmentation

Every year, Gartner Dataquest's IT services group re-evaluates its definitions and segmentation to keep up with changes in the marketplace. This year, there have been two significant changes to existing segments:

- Combining business process IT management services and transaction process IT management services into one category called business process and transaction management (BPTM). This category captures and encompasses all activities that fall under business management including business process outsourcing (BPO).
- We also eliminated several peripheral categories that were in the former business process management category, including contract manufacturing, R&D, product and service creation, and test and quality control. This new segmentation allows Gartner Dataquest to refocus research on the opportunities most directly available to IT services vendors.



# Chapter 2

## IT Services Segmentation

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Gartner Dataquest's IT services programs segment and forecast the market across several different dimensions. In this manner, the total marketplace can be viewed by the user of these forecasts in whichever manner most closely fits their view of the marketplace. These different dimensions are reviewed in detail below.

### Core Segmentation

The IT services market can be segmented by the type of skills that are employed to deliver the service. This has been the traditional means to segment this market space. The core segmentation includes both product support services and professional services. Product support services are further segmented by either hardware or software product types. Table 2-1 details the components of the various services segments. Definitions for the core segments can be found in Chapter 3.

### Environmental Segmentation

The core services segmentation can be further broken down by environment. All services can be associated with the major platforms for which the work has been rendered. Gartner Dataquest's IT services group has identified three main environments:

- Desktop/client
- Server/host
- Connectivity
  - Local-area network (LAN)
  - Wide-area network (WAN)
  - Corporate premises equipment
  - Public network

The connectivity environment is further segmented into LAN, WAN (networking services), corporate premises equipment, and public network (telecommunication services). Please refer to Chapter 4 for environmental definitions.

### Method of Purchase Segmentation

Another way to view the services market is by how services are delivered to and contracted by customers. Generally, customer contract services for either a project or for a specific type of service (discrete) or for a multiyear relationship that includes multiple service components and management of an IT asset, infrastructure, or business process (outsourced). Further definitions for methods of purchase can be found in Chapter 5. Methods of purchase segmentation include the following:

- Discrete
- Outsourced
- IT outsourcing
  - BPO

**Table 2-1  
Core IT Services Market Segmentation**

Service Level 1	Service Level 2	Service Level 3	Service Level 4
Product Support	Hardware maintenance and Support	Computers Storage Network products Printers Copiers Terminals, memory and other options Operating systems Applications Systems and network management software, tools and utilities	Supercomputers, mainframes, midrange, entry-level servers, workstations and PCs RAID and tape products NICs, hubs, routers, switches, analog modems, WAN access equipment
Education and training services Professional services	Software maintenance and support  Consulting Services	Business consulting services IT Consulting Services	
	Development and integration services	Application development services Deployment services Integration services	
	IT management services	Operational services Application IT management services Help desk IT management services	
	BPTM services		

Source: Gartner Dataquest (April 2002)

# Chapter 3

## Core IT Service's Segmentation Definitions

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### Definition: IT Services

IT services refers to the application of business and technical expertise to enable organizations in the creation, management, optimization or access to information and business processes.

### Product Support Services

#### Hardware Maintenance and Support Services

These are preventive and remedial services that physically repair or optimize hardware, including basic installation, contract maintenance, and per incident repair, both on site or at a centralized repair depot. Hardware support also includes telephone technical troubleshooting and assistance for setup and all fee-based hardware warranty upgrades. Exclusive of parts bundled into maintenance contracts, sales of all parts used to repair high-tech equipment in carry-in, mail-in, or per-incident on-site delivery modes, or purchased by internal staff to perform the repair, are included. This segment includes only external customer spending on these services.

#### Computers

This term covers supercomputers, mainframe computers, midrange computers, workstations and PCs.

#### Supercomputer

A high-performance computer designed for either numerically intensive applications or commercial functions, which require extensive and rapid computational capabilities. These systems include computing technologies such as vector, superscalar symmetrical multiprocessing (SMP) and massively parallel processing. Massively parallel processing systems are defined as a system configured with 32 or more processors. Typically, these systems run in cool rooms (with or without raised floors) or environmentally controlled office habitats and require a dedicated support organization. Applications that lend themselves to the supercomputer platform include atmospheric simulation, pharmacological testing and nuclear development as well as very high-level decision support and on-line analysis.

#### Mainframe

A general-purpose information system with a typical starting price of more than \$100,000. The CPU bit width is typically 64 bits. The physical environment can be either with or without special environmental controls and requires full-time support by professional computer systems support staff. The number of concurrent users exceeds 100.

#### Midrange

The midrange product category includes all multiuser systems that fall between workstations and mainframes. These are multiuser systems that may or may not run proprietary operating systems. With the evolution of client/server computing and the systems that define this market, traditional midrange product categories are becoming obsolete.

## Entry-Level Servers

This category consists of servers whose roots are from the PC/Intel architecture. An entry-level server is a shared computer on a network that can be used for simple tasks such as handling print requests or more complex tasks such as acting as a repository and distributor of data. Examples of this segment include the IBM Netfinity and the HP NetServer.

## Workstation

Workstations typically are based on high-end Intel or RISC architectures with high-performance graphics, operating system, and system architecture. In general, workstations must include integrated floating-point processing, integrated networking, a 32-bit or 64-bit multitasking operating system, high-resolution 2-D graphics capabilities (typically 1-megapixel display), as well as configurations that support high-performance 3-D graphics functionality. The workstation market includes traditional Unix workstations, workstations running Windows NT or proprietary operating systems and other advanced operating systems, such as NextStep and Solaris. Systems shipped with Windows 2000 are generally counted as PCs and not included in the workstation category. Workstations are classified by the primary market for which they are designed. Workstations are further segmented into one of three categories: Entry-level workstation, midrange workstation, and super workstation. Apple Power Macintosh systems are not considered workstations and are included in the PC classification.

## Personal Computers

A personal computer (PC) is general-purpose computer that is distinguished from other computers by its adherence to hardware and software compatibility. This compatibility drives high-unit volumes of commodity-like products that do not require on-site technical support. High-performance features (such as networking, graphics and a virtual multiuser/multitasking operating system) are normally optional and not integral system features. IBM/IBM-compatible and Macintosh personal computers are two platforms in this product segment. A single-user PC's resident operating system is typically DOS, OS/2, or Mac OS. The definition classifies Windows 3.x and Windows 95 as operating environments. However, it is understood that these typically run on DOS or OS/2. PCs have a performance ceiling that is lower in system compute performance, I/O channel speed, and disk speed than advanced workstations. Normally, standard graphics are in the 760x1,280-pixel range, and optional high-end graphics are limited compared with workstations. A PC system is a single unit, which includes a CPU, a monitor, and a keyboard. Furthermore, PC shipment data does not include systems assembled from component parts purchased in electronic stores or other outlets. The definition does not currently include Windows clients, network computers (Java stations), and Internet TVs (Web TV) in the published PC market statistics. The products are being tracked separately and may be included as they evolve.

## Storage

### RAID

This category includes the total of all external Redundant Array of Independent/inexpensive Disks (RAIDs). RAIDs is a set of disk drives (at least three) that input/output (I/O) activity is managed from either host-based software or a controller.

## **Tape Products**

This category includes all segments of tape drives used for computer storage. This forecast includes storage devices that are standalone only. Storage that is enclosed within a computer shipment is included in the computer systems segment. This methodology avoids double-counting. Controllers and subsystems are also factored in.

## **Network Products**

### **Network Interface Cards**

The printed circuit board that plugs into the expansion slots of a PC, workstation, or host terminal to allow connection to a LAN. Network interface cards (NICs) are designed in accordance with either Institute of Electrical and Electronics Engineers (IEEE) or American National Standards Institute (ANSI) protocol standards, the most common being Ethernet, token ring and fiber-distributed data interface (FDDI). No differentiation is made among PC, workstation and host NICs.

### **Hubs**

This includes LAN device that connects multiple PCs through a single node on the network, allowing centralized control for different optional functionality such as WAN connectivity, multiple media support, multiple technology support and network management functions, among others.

### **Routers**

This describes a device that uses the lower three levels of the Objective Systems Integrators (OSI) model to enable interconnection among dissimilar networks.

### **Switches**

LAN device that provides a discrete LAN segment to one or more users on each switched port. For example, on a 12-port Ethernet switch, each port has its own dedicated 10-Mbps bandwidth. Switches are managed in a fashion similar to hubs. Switches that include layer-3 capability can also support routing functionality (see Routers).

### **Analog Modems**

An electronic device that provides modulation and demodulation functions for data signals transmitted over telephone lines. It converts digital data to analog data for transmission over leased lines or the analog public switched telephone network. The category includes internal card modems, external modems, PC card modems and fax cards.

### **WAN Access Equipment**

This describes access equipment including time division multiplexers (TDMs), frame relay, assemblers/disassemblers (FRADs), and ATM multiplexers.

### **Frame Relay Assemblers/Disassemblers**

Frame relay assemblers/disassemblers (FRADs) have the same function as packet assembler/disassemblers (PADs). They connect user terminals or computers from their native protocol to an aggregate trunk complying with the frame relay interface protocol and act as an entry/exit point for private frame relay networks. A large number of FRADs are based on existing PADs enhanced with a frame relay software.

### **Packet Assemblers/Disassemblers**

A packet assembler/disassembler (PAD) connects user terminals or computers from native mode, such as asynchronous or synchronous data link control (SDLC), to an aggregate trunk complying with the X.25 protocol. A PAD conforms to ITU-T X.3, X.28, and X.29 recommendations on user channels (the "triple-X" standard). It commonly serves as a network entry/exit point; it assembles packets from the data waiting to be transmitted from the terminal and disassembles packets that have been received from the X.25 link.

### **Time-Division Multiplexers**

Time-division multiplexers (TDMs) combine a number of low-speed channels onto one or more aggregate trunk. Each user port is allocated fixed time slots on the aggregate link. TDMs can also combine digital voice and other isochronous signals onto the aggregate trunks, providing additional network savings and allowing the creation of networks supporting mixed voice and data transport.

### **Asynchronous Transfer Mode Multiplexers**

Asynchronous transfer mode (ATM) access multiplexers are generally customer-premises equipment (CPE) used to access ATM networks or carrier-based equipment used to convert legacy user traffic into native ATM format. These devices segment frames into cells for transmission across the network and reassemble frames from received cells. ATM multiplexers allow the transport of constant bit rate (CBR), circuit-oriented traffic along with variable bit rate (VBR) data traffic, with some supporting low-speed data, data and voice compression, routing, and multiple network trunk interfaces. High-speed ATM access concentrators typically have about a 1-Gbps backplane.

### **Backbone Equipment**

This includes the following product categories:

- **Backbone ATM Switches:** These employ ATM, a Layer 2 (Data link layer) switching method using fast hardware rather than the software approaches usually found in packet and frame switches. ATM uses fixed-length, 53-byte cells as the unit of transport, with native access via one of several ATM user-to-network interfaces (UNIs). ATM backbone switches typically support trunk speeds ranging from T1/E1 to OC-12, have backplane speeds ranging from 1 Gbps to 20 Gbps, support sophisticated traffic management software and serve the primary function of switching ATM traffic within a mesh network.
- **Backbone TDMs** combine a number of low-speed channels onto multiple high-speed trunks and are typically used in mesh network configurations. Backbone TDM products support application-specific feature modules which provide support for direct LAN connection, frame relay, digital and analog voice, and low- and high-speed data.

### **Premise Switching Equipment**

This refers basically to private branch exchange (PBX) and key telephone equipment.

### **Private Branch Exchange**

A private branch exchange (PBX) telephone switching system on the customer premises allows telephones to interface to the public telephone central exchange or office when the user dials an access code. A special purpose attendant/operator console can be provided on a standard or optional basis.

### **Key Telephone Systems**

A customer premises telephone-switching system that allows telephones to interface to the public telephone central exchange or office only via key access without using an access code. This category includes electromechanical IA2 and electronic segments; KTS requires the use of station equipment designed for the system.

### **Call-Routing Systems**

Gartner Dataquest defines call-routing systems as computer-based systems that provide call routing for high-volume call transactions, with specialist answering "agent" stations and a sophisticated real-time call management system. The definition includes all call center systems that provide call handling capabilities and automatic call distribution, combined with a high degree of sophistication, in terms of dynamic call traffic management.

### **Voice Messaging Systems**

Voice messaging systems are computer-based system that enables flexible, nonsimultaneous voice communications. This definition does not include individual PC boards but does include PC-based systems.

### **Interactive Voice Response Systems**

Interactive voice response (IVR) systems use telecommunications technology to allow a user to access a host computer or resident database through the use of a keypad of a touch-tone telephone or through voice recognition technology. Once the database is accessed, the user can input data, extract data, or manipulate data found in that computer database.

### **Public Network Transmission Equipment**

Gartner Dataquest addresses only the electronics or opto-electronic equipment associated with transmission facilities and does not track the physical media (open wire, cable pairs, coaxial cable, radio, satellite and optical fibers). Transmission refers to the means of translating analog or digital messages (voice, data, image and video) into electrical and, sometimes, optical signals that are combined (multiplexed) with other signals and sent over some physical media. The process is reversed at the far end to recover the original message (demultiplexed).

### **Public Network Switching Equipment/Central Office Equipment**

Public network switching equipment is equipment that interconnects local telephone lines, long-distance trunk lines, mobile lines, and landlines. It is typically sold by manufacturers to phone companies. Switch upgrades, services and miscellaneous are not included. Transit lines are assumed to be included in vendors' shipments

### **Public Network Network Access/Local Loop**

Gartner Dataquest addresses only the electronics or opto-electronic equipment associated with connecting end users to the local central office switch or to the core transmission network. It does not track either the physical media (copper twisted pairs, coaxial cable and optical fibers), or the hard-wired mechanical components of the access network, or the enclosures or the cable ducting/poles. The electronic access systems may be fiber-, copper- or radio-based.

## Printers

A printer is the peripheral output device of a computer system for producing computer-generated images on paper using a number of different marking technologies. In order to be classified in this segmentation, the device needs to be capable of using plain or coated papers with a minimum size of International Standards Organization (ISO) A4, U.S. size A (letter), or continuous forms with an 8-inch print width or greater, but excludes products that support paper widths above A2 or U.S. size C (17x22 inches). The definition also excludes other classes of application-specific printers, such as point-of-sale printers, video printers and dedicated photo printers.

## Copiers

Includes both analog (optical technology) and digital (digital scanning and printing technology) copiers including the following:

- Analog copiers — Image capture and transfer using optical or "light lens" technology in which the image is flash illuminated on the platen, then transferred to the photoconductor through a series of lenses and mirrors. The latent image is then transferred from the photoconductor to paper through the electrophotographic process.
- Digital copiers — Image capture using digital scanning and image transfer using electronic impulse in which the image is scanned from the platen and digitized into electronic data. The electronic data is processed to enable the image to be transferred to the photoconductor. The electronic image data is then transferred to the photoconductor through the light impulses of a laser or LED to "write" the image to the photoconductor material. The latent image is then transferred from the photoconductor to paper through the electrophotographic process, as with an analog copier.

Also included are consumables since they are frequently bundled in maintenance contracts.

## Terminals, Memory, Other Options

This category includes several categories of products that are associated to the computer platforms so as to represent a more complete representation of products for which vendors receive maintenance revenue. Computer terminals, include X terminals, IBM 3270 and 5250, AACII/ANSI/PC, and all asynchronous and synchronous terminals. Memory includes the range of technologies and capacities. Other options include such products as multimedia cards, accelerators, and so forth.

## Software Maintenance and Support Services

These services include revenue derived from long-term and pay-as-you-go support contracts. Technical support contracts include telephone and on-line troubleshooting, installation assistance and basic usability assistance. Software maintenance includes support contracts and custom software updates. Software products and technologies covered under this category include operating systems, application software and systems, application software, and systems and network management software, tools and utilities. The different types of software covered in the software maintenance and support services include the following:

- Operating systems
  - Microsoft
  - Unix
  - Others

- Applications
  - Back-Office ERP
  - Collaborative and Personal
  - Engineering
  - Front-Office CRM
  - Other Applications
- Systems and Network Management Software, Tools and Utilities
  - Application Development and Middleware
  - Information Management
  - Security
  - Storage Management
  - Systems and Network Management

## Professional Services

### Consulting Services

Consulting services are advisory services to help companies analyze and improve the efficacy of business operations and technology strategies. Consulting services include two subsegments: business and IT consulting.

#### Business Consulting Services

Business consulting services are advisory services that influence the adoption of information technology. These business consulting services are intended to improve business operational efficiencies, transform existing businesses or create new businesses via IT. Business consulting activities include corporate strategy planning, review of business plans, business process analysis or re-engineering, and business requirements analysis, as well as change management and organizational consulting pertaining to the adoption of IT solutions. Some service examples include product/market portfolio consulting, corporate development, R&D, sales and marketing consulting, operations strategy, organization management and reorganization, operational effectiveness management, strategic sourcing, and supply chain management (SCM). Business consulting services typically preface the design of IT solutions.

#### IT Consulting Services

IT consulting services are advisory services that help clients assess different technology strategies and in doing so, align their technology strategy with their business or process strategy. These services support customers' IT initiatives by providing strategic, architectural, operational and implementation planning. Strategic planning includes advisory services that help clients assess their information technology needs and formulate system implementation plans. Architecture planning includes advisory services that combine strategic plans and knowledge of emerging technologies to create the logical design of the system and the supporting infrastructure to meet customer requirements. Operational assessment/benchmarking includes services that assess the operating efficiency and capacity of a client's IT environment. Implementation planning includes services aimed at advising customers on the rollout and testing of new solutions deployment.

## **Development and Integration Services**

Development and integration services customize or develop IT solutions, assets, and processes and then integrate these solutions, assets, and processes with existing infrastructure and processes. Development and integration services implement solution designs. Development and integration services include three subsegments, application development services, integration services and deployment services.

### **Application Development Services**

Services that create new functionality for customers' developed or packaged applications. Application development frequently serves to integrate or link internal or external business processes. These services may include conversion applications to run on different platforms or architectures.

### **Integration Services**

Detailed design, implementation, and IT management services to link applications (custom or prepackaged) to each other or with the existing or planned information technology infrastructure. Specific activities might include project planning, project management, detailed design, and implementation of application programming interfaces.

### **Deployment Services**

Deployment services support the implementation and rollout of new applications and/or infrastructure. Activities may include: hardware and software procurement; configuration; tuning; staging; installation; and interoperability testing.

## **Training and Educational Services**

Educational services related to information systems or infrastructure deployed as part of a professional services engagement. These services include the on-site or remote transfer of knowledge regarding the usage, best practices, concept skills and change management of the information system. These services do not include training and certification education.

## **IT Management Services**

IT management services provide day to day management and operation of IT assets and processes. As such, they represent the core value components of IT outsourcing. IT management services include three subsegments: operational services, applications IT management services, and help desk IT management services.

### **Operational Services**

Transfer of all or part of the day-to-day system management responsibility for a customer's IT infrastructure (host/data center, client/desktop, or connectivity/network), and in some cases the transfer of ownership of the technology or personnel assets to an outside vendor. Services may include systems operation or support, administration, security, performance monitoring, technical diagnostics/troubleshooting, configuration management, system repair management, and generation of management reports. Also included are services to manage and implement business continuation processes. Also included is the management of technology assets.

### **Applications IT Management Services**

This includes a wide variety of services, processes and methodologies for maintaining, enhancing and managing both custom and packaged software applications.

## **Help Desk IT Management Services**

Services to provide centralized information and support management service to handle a company's internal queries and operational problems about IT-related processes, policies, systems and usage. Services include hardware and software support, logging of problems, dispatch of service technicians and parts, training coordination and other IT-related issues.

## **Business Processing and Transaction IT Management Services**

Business process and transaction IT management services (BPTM) are a component of business process outsourcing (BPO). BPTM includes transaction processing services that provide IT operational support for specific types of transactions, such as for credit/debit cards, payroll, check/bank, and health-care. BPTM also includes business process IT Management Services that provide business transformation knowledge and expertise applied as a part of a BPO contract. Examples of business processes that are outsourced to an external service provider (ESP) include logistics, procurement, human resources, finance/accounting, customer relationship management or other administrative or customer-facing business functions.



## Chapter 4

# IT Service's Environmental Definitions

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All product support and professional services are performed for the following computing environments:

- Desktop/client (including PC servers) — Mobile, desktop PCs, PC servers and workstation products
- Server/host — Midrange servers, mainframes and supercomputers
- Connectivity — Network interface cards, hubs, bridges, routers, switches, multiplexers, frame relay, cell relays, PBXs, automatic call directors, key systems, voice messaging systems, public network switching, transmission equipment and servers dedicated or primarily used for networking

Within Connectivity there are four subplatforms:

- Local-area network (LAN) — The hardware, software, and peripherals that enable connection of a device to a cable based or wireless network system that serves a building or a campus environment. Excluded are point-to-point connections (half-duplex transmissions) or connections that use a PBX or data PBX as a medium. Devices within the LAN subplatform are network interface cards (NICs), hubs, bridges, routers and switches.
- Wide-area network (WAN) — A data network that extends the reach of the local LAN to other geographically separate LAN's through the use of the public network, typically, common carrier lines. Devices within the WAN subplatform are data service unit (DSU)/channel service unit (CSU), modems, multiplexors, frame relay and cell relay devices. This definition includes services to integrate and support business use of the Internet, private intranets and community extranets
- Corporate customer premises equipment (CPE) — The telecommunications equipment that resides on customer premises that primarily transmits voice traffic although some portion may transmit data traffic to the WAN. Devices within the Corporate CPE sub-platform are PBX, key systems, voice mail and messaging systems and IVR/automatic call distributor (ACD) systems.
- Public network — The network operated by public telephone operators and other common carriers which provides circuit switched, packet switched, and leased lines to the public, and which may be used to transmit voice or data packets between points. Devices within the public network include public network switching equipment (central office switches) and public network transmission equipment (synchronous digital hierarchy [SDH] multiplexers, non-SDH multiplexers, cross connects, digital loop carriers, broadband loops, high-speed digital subscriber line [HDSL], asymmetric digital subscriber line [ADSL]). Also included in this category is equipment that uses wireless technology to form part of the public network. Examples include mobile network infrastructure and microwave equipment and satellite systems.



# Chapter 5

## Method of Purchase Definitions

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The IT services market can be divided by the primary methods of purchase used by end-users and service providers:

- **Discrete** — Project-specific contractual arrangement, with a predetermined scope of work to be completed within a given time period. Discrete projects may last a few weeks to several years, depending on the project. Typical projects can include, but are not limited to, Euro-related conversions, customer application development, legacy transition services and enterprise application integration and deployment.
- **Outsourcing** — Annuity-based contractual arrangement that details how an organization will provision services on an ongoing basis at a specified level of competency. Outsourcing arrangements usually last between two and five years, but may be either shorter or longer. Outsourcing includes both IT infrastructure and business processes. Outsourcing agreements always include services from the management category, transaction processing, or business management segments and may include services from the product support, consulting, development and integration, or education and training. As part of an outsourcing agreement, the external service provider may either take over the physical assets and infrastructure of a client or may provide access to existing infrastructure owned by the outsourcer.

### Outsourcing

Outsourcing services can be viewed as a portfolios of product support and professional services that are brought together to provide the client with the IT infrastructure, applications, capabilities, and business processes to help ensure the successful mission of the organization. Outsourcing is divided into IT outsourcing and BPO (which in part is composed of IT services and therefore overlaps with IT outsourcing).

### Business Process Outsourcing

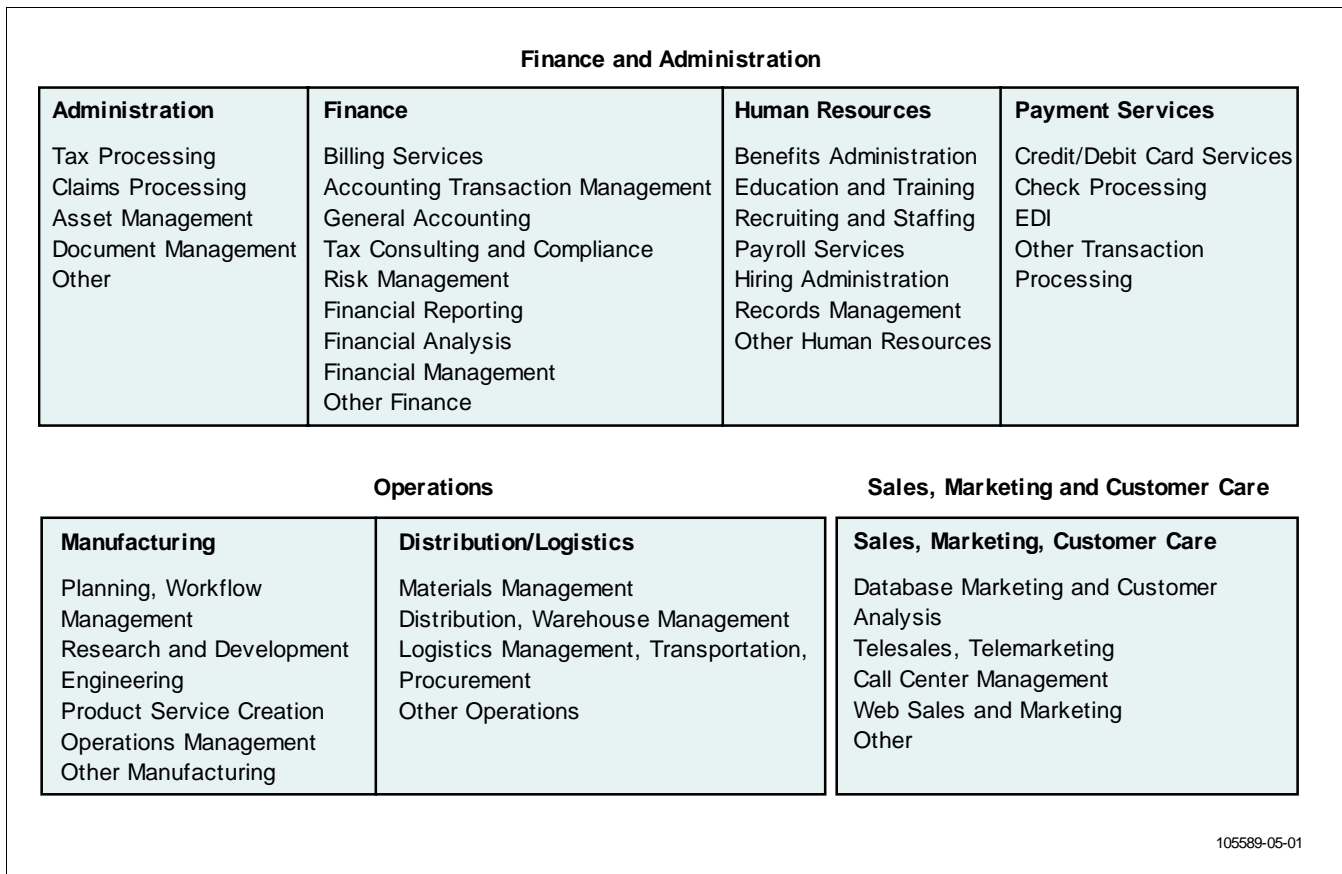
Gartner Dataquest defines business process outsourcing (BPO) as the delegation of one or more IT-intensive business processes to an external provider who, in turn, owns, administrates and manages the selected process(es), based upon defined and measurable performance metrics.

Gartner Dataquest segments BPO into the following three categories and seven process areas:

- **Finance and administration**
  - Administration services
  - Finance services
  - Human resources
  - Payment services
- **Operations**
  - Manufacturing services
  - Logistics/distribution
- **Sales, marketing and customer care**
- **Within these categories, Gartner Dataquest tracks 41 business processes, represented in the market model of Figure 5-1.**

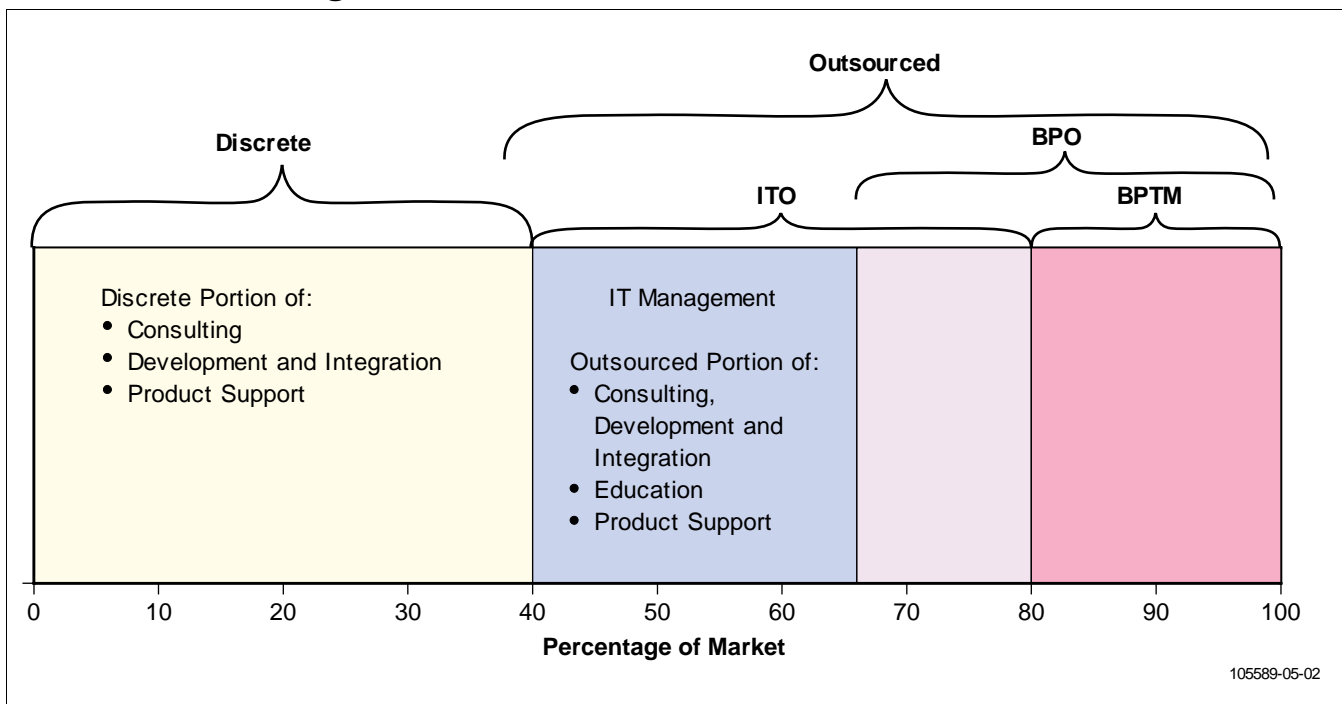
The mapping between method of purchase and the core segmentation in Chapter 5 is shown in Figure 5-2.

**Figure 5-1**  
**BPO Market Model**



Source: Gartner Dataquest (April 2002)

**Figure 5-2**  
**IT Services Market Segments**



Source: Gartner Dataquest (April 2002)

## Chapter 6

# E-Business Services Definitions

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The boundaries between e-business services and mainstream IT services are not always clear-cut. E-business is not founded on a single technology architecture, such as client/server, but rather on a constellation of technologies that include n-tier distributed computing, Internet Protocol (IP) and related standards, a browser-based user interface (usually for a thin client), and linked applications and documents.

- The key processes found within e-business include the following:
- E-commerce — Solutions that support any for-value transaction of goods, services or information via an intranet, extranet or the Internet. This process can take place in either a business to customer (B2C) or business to business (B2B) format and typically includes the implementation of catalog/search, shopping cart and transaction technologies.
- Customer relationship management (CRM) — Solutions that support the capture, access, distribution and use of customer data across the enterprise via multiple channels (for example, Web, call center or kiosk.) This process typically includes the implementation and integration of Web-enabled sales force automation, data warehousing/ knowledge management, and/or customer care technologies supported by intranet/extranet/Internet infrastructure.
- Web-enabled operations — The implementation of a Web browser as a user interface to a new or legacy, terminal-based application supporting corporate administration. This process typically focuses on an enterprise's basic business functions such as human resources, finance and accounting and so on.
- Extended enterprise — Solutions that support the Web-based relationship between an enterprise and its business partners, including resellers, distributors, suppliers, manufacturers or original equipment manufacturers (OEMs). This process typically includes the integration of SCM, external resource provider (ERP) and fulfillment technologies between multiple organizations.

Some of the key service lines within e-business are listed below:

- Business Consulting (strategy/operational) — From a strategic aspect this service line would include core business validation, business strategy and positioning, and development of organizational architecture. Operationally this offering would include process audits and business process re-engineering.
- IT consulting — IT operations assessment, IT migration strategies, the definition of enterprise IT architectures and product and technology evaluation.
- Interactive marketing — Professional services to assist a client in the identification, development and management of a branding and marketing strategy. Solutions in this area focus on Web-site personalization, audience trafficking and measurement, advertising and promotion management around a client's product rollout or market entry and advertising strategy, including media planning, buying and ad production.
- Creative services — Production and development services supporting the aesthetics and visual details of a client's Web presence. Solutions in this area focus on design and typically require the use a digital or object-oriented tool. Creative services are tightly linked to a client's interactive marketing strategy.

- **Web enablement** — The implementation of a Web browser as a user interface to a legacy terminal-based applications, utilizing one of four major techniques; Web terminal emulators and screen scrapers, enterprise middleware extensions, host Web servers and Web integration servers.
- **Application development** — Application and systems design, typically based on the IT blueprint created during the IT consulting phase. This offering would include specifications for hardware, software, and applications. The provider can create enhanced functionality by developing new custom applications, or modifying or enhancing customized or packaged applications.
- **Systems integration** — This service line encompasses application integration, systems engineering and systems delivery. Key aspects of the engineering process include network and database integration and hardware and software solution procurement. Systems delivery includes systems file conversion, installation and testing and acceptance.
- **Web hosting** — Services that provide an Internet presence, including installation and maintenance of both the telecommunications access and equipment and the computing systems that comprise Web sites.
- **Applications hosting** — This service addresses the life-cycle needs of the application from the initial IT infrastructure development to maintenance of a complete set of IT business applications. The provider offers software maintenance, conversion, enhancement and support in a hosted environment.
- **Trading community management** — The application and infrastructure management of a vertical/horizontal e-marketplace (also known as a portal/metamediary). This service can include some type of equity or revenue stake.
- **BPO** — This offering entails the ownership (that is, responsibility and liability), administration, operations, and management of a customer's business process(es). IT intensive business processes typically outsourced in BPO contracts include finance and administration, operations, and sales and marketing.

## Chapter 7

# Vertical Market Definitions

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Vertical segments for Gartner Dataquest's IT services group have been defined as outlined in Table 7-1. The International Standard Industry Code (ISIC), the U.S. Standard Industry Code (US SIC) and the emerging North American Industry Classifications Systems (NAICS) are shown.

**Table 7-1  
Vertical Market Segmentation**

Primary Segment	Secondary Segment	Additional Description	ISIC	US SIC	NAICS
Agriculture, Mining and Construction	Agriculture	Agriculture, forestry and fishing	1 to 9	1 to 9	11
	Mining	Mining of coal, petroleum, gas, metal and minerals	10 to 14	10 to 14	12
	Construction	Construction and contractors	45	15-17	23
Process Manufacturing	Pharmaceutical and medicine	Pharmaceuticals, medicinal chemicals and botanical products	2423	2833-2835	3254
	Chemical, plastics and rubber	Chemicals, plastics, rubber and minerals	2421, 2422, 2424, 2429, 25	30: 2812-2824, 2836-2899	3251, 3252, 3253, 3255, 3256, 3259, 326, 327
	Petroleum and coal	-	23	29	324
	Textiles and apparel	Textiles, apparel and leather	17, 18, 19	22, 23, 31	313, 314, 315, 316
	Metal, wood, minerals, paper, printing and publishing	Newspaper, book, periodical publishers; paper and printing; wood; minerals, stone, clay, glass and primary metals	20, 23, 22, 26, 27	24, 25, 27, 32, 33	51111-3, 51119, 322, 323, 331, 332
	Consumables	Food, beverages and tobacco	15-16	20-21	311, 312
Discrete Manufacturing	Transportation equipment	Transportation equipment (motor vehicles, aerospace, rail and ships)	34, 37	37	336
	Computer and electronic products	Computers, office, electronic and communication equipment and semiconductors	30, 31, 32.	36	334
	Industrial and electrical equipment	Industrial and commercial machinery	29	35	333, 335
	Medical equipment and supplies	Medical, optical, industrial measuring and controlling, and scientific equipment and instruments; photographic, watches and clocks;	33	38	3391
	Other discrete manufacturing	Fabricated metal, furniture, recycling and miscellaneous manufacturing	28, 36, 37	25, 34, 39	332, 337
Utilities	Electric and gas	Electric, gas and steam	40	4911-4939, 4961	2211
	Water	Water and sewer systems	41	4941-4959	2213
Wholesale Retail	Wholesale durable and nondurable goods	-	51	50-51	42
	General retailers	Nonspecialized stores	521	53	452
	Specialty retailers	Specialty stores include building materials, hardware, automotive, fuel, apparel, furniture, miscellaneous and nonstore	50, 523, 524, 525:	52, 55, 56, 57, 59	441-444, 446-451, 453, 454
	Grocery	Food, beverage and tobacco stores	522	54	445
	Restaurants and hotels	-	551, 552	58, 70	72

**Table 7-1 (Continued)  
Vertical Market Segmentation**

Primary Segment	Secondary Segment	Additional Description	ISIC	US SIC	NAICS
Transportation	Rail and water	-	601, 61	40, 44	482, 483
	Motor freight	Truck, transit and sightseeing	602	41, 42	484, 485, 487
	Air transport	-	62	45	481
	Pipelines	Pipelines except natural gas	603	46	486
Communications	Warehousing, couriers and support services	Transportation support activities, postal, couriers and warehousing	63, 641	47, 4221-4226, 43, 4513, 4215	488, 491, 492, 493
	Wireless	-	642	4812	51332
	Wireline	-	642	4813, 4822	51331
	Satellite and other communications	-	642	4988	51333
Financial Services	Broadcasting and cable	Radio, TV, Cable broadcasting and distribution	642	4832, 4833, 4842	51, 315, 132
	Banking	Monetary authorities: central banks and credit intermediation	65	60, 61, 67	521-522
	Securities	Security and commodity brokers	67	62	523, 525
	Insurance (other than health)	Insurance carriers and agents	66	63, 64 Insurance	524
Healthcare	Health insurance (payer)	Insurance carriers and agents	66	63, 64	524
	Healthcare provider	Doctor, nursing, dental and clinical offices; medical and dental laboratories; hospitals and other health and allied services	851, 852	80	621-623
	Software publishers	Supplier in ISIC software consultancy and supply segment	723	7372	5112
	IT Service providers	IT service providers except software publishers	72	7371, 7373-7379, 8742	541
Services	Professional, scientific and technical services except IT	Legal, accounting, design, engineering, management, scientific, advertising and technical services except IT	73, 741-743	7311, 81, 83, 87 except 8742	541
	Real estate	Real estate, rental and leasing	70	65	53
	Business and consumer services	Motion picture, video, audio recording; Information services & data processing; holding companies; business and building support; employment, travel, security; arts, entertainment, recreation (performances, sports, museums); personal and repair services; religious, civic and membership organizations	90-93, 71, 526, 749, 853	7322-7363, 7381-7389, 75-79, 83-86, 88, 89	624, 512, 514, 55, 56, 71, 81

**Table 7-1 (Continued)  
Vertical Market Segmentation**

Primary Segment	Secondary Segment	Additional Description	ISIC	US SIC	NAICS
Education	Primary and secondary Higher education	Primary and secondary schools Colleges, professional and other	801, 802 803, 809	8211 8221, 8222-8299	6111 61,136,116
National and International Government	Defense and intelligence	National defense and intelligence	7522	90	92
Local and Regional Government	Civil Local and regional government	National government, excluding defense Local, provincial, state and regional government	75 75	90 90	92 92
Home	Home	A home purchase is an item that has been paid for by private funds. It includes all products where the primary use is for personal, edutainment, and home office purposes. It excludes home business use where the cost has been written off against a company's (or charity's) accounts.	-	-	-
	NA	NA	NA		

NA = Not applicable

Source: Gartner Dataquest (April 2002)

# Chapter 8

## Worldwide Geographic Regional Definitions

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The following regional hierarchy and definitions are used for Gartner Dataquest's IT services geographic segmentation.

### Asia/Pacific

The Asia/Pacific region includes Australia, China, Hong Kong, India, Indonesia, New Zealand, South Korea, Malaysia, Singapore, Thailand and Taiwan.

#### Rest of Asia/Pacific

The Rest of Asia/Pacific region includes American Samoa, Ashmore and Cartier Islands, Baker Island, Bangladesh, Bhutan, Bouvet Island, Brunei, Cambodia, Christmas Island, Cocos (Keeling) Islands, Cook Islands, Coral Sea Islands, Federated States of Micronesia, Fiji, French Polynesia, Guam, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Kiribati, Laos, Macau, Maldives, Marshall Islands, Midway Islands, Mongolia, Myanmar (Burma), Nauru, Nepal, New Caledonia, Niue, Norfolk Island, Northern Mariana Islands, North Korea, Pakistan, Palau, Palmyra Atoll, Papua New Guinea, Paracel Islands, Philippines, Pitcairn Islands, Solomon Islands, Spratly Islands, Sri Lanka, Tokelau, Tonga, Tuvalu, Vanuatu, Vietnam, Wake Island, Wallis and Futuna, and Western Samoa.

### Western Europe

The Western Europe region consists of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

#### Rest of Western Europe

The rest of the Western Europe region includes Andorra, Cyprus, Faroe Islands, Gibraltar, Greenland, Guernsey, Iceland, Isle of Man, Jersey, Liechtenstein, Luxembourg, Malta, Monaco, San Marino and Svalbard.

### Eastern Europe

Gartner Dataquest IT services research does not cover specific countries in Eastern Europe. The Eastern Europe region consists of Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakstan, Kyrgyzstan, Latvia, Lithuania, Macedonia, Moldova, Poland, Romania, Russia, Slovakia, Slovenia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan and Yugoslavia (Serbia and Montenegro).

### Japan

Japan is a single-country region.

## Latin America

Gartner Dataquest IT services research does not cover specific countries in Latin America. The Latin America region consists of Anguilla, Antigua and Barbuda, Argentina, Aruba, Bahamas, Barbados, Belize, Bermuda, Bolivia, Brazil, Cayman Islands, Chile, Clipperton Island, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Falkland Islands (Islas Malvinas), French Guiana, Grenada, Guadeloupe, Guatemala, Guyana, Haiti, Honduras, Jamaica, Martinique, Mexico, Montserrat, Navassa Island, Netherlands Antilles, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Tortola (British Virgin Islands), Trinidad and Tobago, Turks and Caicos Islands, Uruguay, Venezuela and Virgin Islands (St. John, St. Croix, and St. Thomas).

## Middle East/Africa

Gartner Dataquest research does not cover specific countries in the Middle East and Africa. The Middle East and Africa region includes Afghanistan, Algeria, Angola, Bahrain, Bassas da India, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, Cote d'Ivoire, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Europa Island, Gabon, Gambia, Ghana, Glorioso Islands, Guinea, Guinea-Bissau, Iran, Iraq, Israel, Jordan, Juan de Nova Island, Kenya, Kuwait, Lebanon, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mayotte, Morocco, Mozambique, Namibia, Niger, Nigeria, Oman, Qatar, Reunion, Rwanda, Saint Helena, Sao Tome and Principe, Saudi Arabia, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Syria, Tanzania, Togo, Tromelin Island, Tunisia, Turkey, Uganda, United Arab Emirates, Western Sahara, Yemen, Zaire, Zambia and Zimbabwe.

## North America

The North America region consists of the United States and Canada.

## Chapter 9

# Research Metrics

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The following describes the research metrics Gartner Dataquest uses for reporting market revenue, market size, and market share:

- **Manufacturer** — A producer of branded or unbranded finished products. A manufacturer could be a contract manufacturer or an original manufacturer, or both.
- **Compound annual growth rate (CAGR)** — The annualized rate of revenue or unit shipment growth between two given years, assuming growth takes place at an exponentially compounded rate. The CAGR between years X and Z, where Z-X = N is the number of years between the two given years, is calculated as follows:

$$\text{CAGR Year X to Year Z} = [(Value\ in\ Year\ Z / Value\ in\ Year\ X) ^ (1/N) - 1]$$

For example, the CAGR for 1999 to 2004 is calculated as follows:

$$\text{CAGR 1999 to 2004} = [(Value\ in\ 2004 / Value\ in\ 1999) ^ (1/5) - 1]$$

- **End user** — The final user of a product or the final purchaser of maintenance or nonmaintenance service for the IT products or technology. The final purchaser may, or may not, be the actual end user, but the outflow of the product stops at the end user.
- **Vendor** — A vendor is the last entity in the chain that brands a product and sells it either directly to end users or through a channel. A vendor may design and manufacture its own products, assemble complete systems from components produced by others, or procure products from an OEM or contract manufacturer. A vendor may also provide services, maintenance, or nonmaintenance for its own products or for other vendors' products and may also provide services for IT technologies.
- **Revenue** — The gross sales generated by a manufacturer or vendor, measured in unit currency
- **Installed base** — The total number of units in active use. The installed base is equal to the total number of cumulative unit shipments minus the total number of cumulative unit retirements, regardless of upgrades.
- **Retirements** — The total number of units that are removed from active use at a specified point in time.
- **Service contract** — A purchase of maintenance or support services for a product. Examples are the annual purchase of maintenance for hardware repair, or an upgrade of warranty or for optional coverage.
- **Service provider** — A company that does not manufacture products. The company provides a Gartner Dataquest IT Services defined service.



# Chapter 10

## Exchange Rates

Once data denominated in foreign currency is collected, Gartner Dataquest uses the average currency exchange rate for the relevant time period to express the data in U.S. dollars. The average exchange rate for a given quarter is calculated by summing the exchange rates for the three months of the quarter and dividing the sum by three. Similarly, the average exchange rate for a year is calculated by summing the exchange rates for the 12 months of the year and dividing the sum by 12.

The exchange rate used is determined by the precise period of time being evaluated. Most of our historical market sizing and market share data is evaluated on a calendar-year or calendar-quarter basis. However, in evaluating the fiscal-year or fiscal-quarter performance of an individual company, an exchange rate must be calculated for the specific fiscal period under review. For example, NEC Corporation's fiscal year ends March 31. Therefore, when evaluating NEC's financial performance in U.S. dollars, the proper exchange rate would be the average yen per dollar exchange rate for the 12 months beginning April 1 of the previous year and ending March 31 of the current year.

When converting a company's local currency sales into U.S. dollars, or vice versa, it is important to use the 2002 exchange rates provided by Gartner Dataquest. This will prevent inconsistencies in the conversion of offshore sales between each company.

**Table 10-1**  
**Prevailing Historical Exchange Rates (Foreign Currency per U.S. Dollar)**

	2000	2001	2002	Foreign Currency Appreciation vs. U.S. Dollar (%) 2000-2001
<b>North America</b>				
Canada (Dollar)	1.49	1.55	1.58	-1.89
<b>Latin America</b>				
Argentina (Peso)	1.00	1.00	1.00	0.00
Brazil (Real)	1.83	2.35	2.36	-0.44
Chile (Peso)	539.56	635.41	666.90	-4.72
Colombia (Peso)	2,090.06	2,300.68	2,304.58	-0.17
Mexico (Peso)	9.46	9.34	9.16	2.01
Peru (New Sole)	3.49	3.51	3.44	2.08
Venezuela (Bolívar)	680.47	724.34	753.64	-3.89
<b>Western Europe</b>				
Austria (Schilling)	14.94	15.38	NA	NA
Belgium (Franc)	43.81	45.08	NA	NA
Denmark (Krone)	8.09	8.33	8.35	-0.28
Economic and Monetary Union (ECU/Euro)	1.09	1.12	1.12	-0.41
Finland (Markka)	6.46	6.64	NA	NA
France (Franc)	7.12	7.33	NA	NA
Germany (Mark)	2.12	2.19	NA	NA
Greece (Drachma)	365.86	380.77	NA	NA
Iceland (Krona)	78.88	97.74	104.48	-6.45
Ireland (Punt)	0.86	0.88	NA	NA
Italy (Lira)	2,102.77	2,163.67	NA	NA
Netherlands (Guilder)	2.39	2.46	NA	NA

**Table 10-1 (Continued)**  
**Prevailing Historical Exchange Rates (Foreign Currency per U.S. Dollar)**

	2000	2001	2002	Foreign Currency Appreciation vs. U.S. Dollar (%) 2000-2001
Norway (Krone)	8.81	8.99	8.97	0.24
Portugal (Escudo)	217.72	224.03	NA	NA
Spain (Peseta)	180.69	185.93	NA	NA
Sweden (Krona)	9.18	10.34	10.58	-2.19
Switzerland (Franc)	1.69	1.69	1.66	1.90
United Kingdom (Pound)	0.66	0.69	0.69	0.11
<b>Central and Eastern Europe</b>				
Bulgaria (Lev)	2.10	2.18	2.18	-0.10
Czech Republic (Koruna)	38.63	38.02	36.34	4.62
Hungary (Forint)	282.16	286.46	276.98	3.42
Poland (Zloty)	4.34	4.09	4.02	1.88
Romania (Lev)	21,422.64	28,900.57	31,319.68	-7.72
Russia (Ruble)	27.97	29.09	30.20	-3.66
Slovakia (Koruna)	46.21	48.33	48.29	0.09
Ukraine (Hryvna)	5.48	5.38	5.36	0.41
<b>Japan</b>				
Japan (Yen)	107.82	121.52	127.59	-4.76
<b>Asia/Pacific</b>				
Australia (Dollar)	1.73	1.94	1.95	-0.53
China (Yuan)	8.28	8.28	8.28	0.01
Hong Kong (Dollar)	7.79	7.80	7.80	0.01
India (Rupee)	45.00	47.23	47.93	-1.47
Indonesia (Rupiah)	8,373.70	10,189.44	10,273.11	-0.81
Malaysia (Ringgit)	3.80	3.80	3.80	0.00
New Zealand (Dollar)	2.20	2.38	2.41	-1.00
Philippines (Peso)	44.26	51.01	51.77	-1.49
Singapore (Dollar)	1.72	1.79	1.84	-2.48
South Korea (Won)	1,131.38	1,291.67	1,292.29	-0.05
Sri Lanka (Rupee)	76.98	89.62	93.19	-3.84
Taiwan (Dollar)	31.27	33.83	34.68	-2.46
Thailand (Baht)	40.22	44.51	43.95	1.26
<b>Rest of World</b>				
Egypt (Pound)	3.53	4.04	4.42	-8.76
Israel (New Shekel)	4.08	4.21	4.28	-1.61
South Africa (Rand)	6.95	8.63	11.68	-26.13
Turkey (Lira)	624,177.48	1,204,238.09	1,455,568.42	-17.27

Notes: Effective 1 January 2002, euro became common currency of Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, and Spain. ECU converted to euro on 1 January 1999 at parity. Exchange rates for reported euro participants fixed as follows: Austria, 13.7603 schillings/euro; Belgium, 40.3399 francs/euro; Finland, 5.94573 markka/euro; France, 6.55957 francs/euro; Germany, 1.95583 marks/euro; Ireland, 0.787564 pints/euro; Italy, 1,936.27 lire/euro; Netherlands, 2.20371 guilder/euro; Portugal, 200.482 escudos/euro; and Spain, 166.386 pesetas/euro. Greece converted to euro on 1 January 2001 at 340.75 drachmas/euro. Bulgarian lev revalued in July 1999; 1 revalued lev equal to 1,000 original leva.

Source: Gartner Dataquest (January 2002)