

# Technology Forecast: 2001–2003

Mobile Internet: Unleashing the Power of Wireless



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**TECHNOLOGY FORECAST: 2001-2003**

April 2001

PricewaterhouseCoopers Technology Centre  
68 Willow Road  
Menlo Park, California 94025  
U.S.A.

Technology Forecast Information: +1-650-470-6730  
General Office Phone: +1-650-322-0606  
Fax: +1-650-321-5543

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## ■ Acknowledgments

**Contributors** Veronica Adams, Todd Allen, Deborah Barley, Nathan Brookwood, Ken Cioffi, Mark Creamer, Gary Delooze, Brian Dooley, Paul Harmon, Lauren John, Barbara Jurin, Eugene Eric Kim, Paul Korzeniowski, Paola Lopez, Catalina Ortiz, Jim Reed, Sarah Roberts-Witt, Paula Rooney, Karen Scarpelli, Jeff Schwartz, Lisa Stapleton, Larry Tashbook, Peter Vigil, Sal Visca, Loring Wirbel

**Reviewers** Ben Armstrong, Bernhard Borges, Bob Brick, Linda Clark, Andres Gonzalez, Krista Jacobsen, Tatsuya Kamoi, Martin Kuster, Kobus Liebenberg, Chris A. Martin, Yuka Miura, Ekow Nelson, Malcolm Oliphant, Kenny Ozoude, Deepan Patel, Chris Pearson, Thomas Peck, Olof Pripp, Katrina Pugh, Thomas Röttig, Khwaja Shaik, Keith Shaw, Hans-Christian Sidow, John Trego, Johan Van den Brande, Lode Vandermeulen, Brandon Weber, Rod Whitsett

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## ■ How to Use This Book

Welcome to *Technology Forecast: 2001–2003*.

*Technology Forecast* is a publication of the PricewaterhouseCoopers Technology Centre. It is prepared with the assistance of a variety of subject-matter experts. Working from authors' drafts, PricewaterhouseCoopers practice units worldwide collaborate in an extensive editorial review process to produce the final text. Our contributors are recognized in the Acknowledgments section.

156

TECHNOLOGY FORECAST 2001

COPPER CABLE

Copper cable consists of insulated copper wires bundled together and maintained by a sheath. Most cable entering homes consists of two pairs of wires to accommodate two voice circuits. Within the telephone distribution network, cables of 100 pairs or more are used.

Copper is an excellent conductor, and copper cabling used in telecommunications, a cable for communications, power, and residential markets is divided into two major types: twisted-pair and coaxial cable.

**Twisted-pair.** A twisted pair consists of a pair of copper wires, with diameters of 0.4 to 0.6 mm, twisted together and wrapped with a plastic coating. The twisting increases the electrical noise immunity and reduces the loss rate (attenuation) of the data transmission. A twisted-pair cable contains from 2 to 4,200 twisted pairs. Twisted pair is a very flexible, low-cost media and can be used for either voice or data communications. Its greatest disadvantage is limited bandwidth, which restricts long-distance transmission with low error rates.

FIGURE 5. WORLDWIDE DISK DRIVE SHIPMENTS BY VENDOR

Vendor	1999	2000	2001
Toshiba	1.2%	1.2%	1.2%
Hitachi	16.9%	16.9%	16.9%
Maxtor	16.9%	16.9%	16.9%
BNE	1.4%	1.4%	1.4%
Quantum	1.4%	1.4%	1.4%
Sony	1.4%	1.4%	1.4%
Seagate	1.4%	1.4%	1.4%
Western Digital	1.4%	1.4%	1.4%
Other	1.4%	1.4%	1.4%

Source: San Jose, California, 1999

For more information on the telecommunications industry, see page 452.

Section name

Page number

Chapter name

← Cross-reference icon

✳ Explanatory icon

Text highlight

Caption relating to figure

Source of information

Unshielded Twisted Pair (UTP)

UTP cable consists of twisted pairs of copper wires, with diameters of 0.4 to 0.6 mm, twisted together and wrapped with a plastic coating. The twisting increases the electrical noise immunity and reduces the loss rate (attenuation) of the data transmission. A twisted-pair cable contains from 2 to 4,200 twisted pairs. Twisted pair is a very flexible, low-cost media and can be used for either voice or data communications. Its greatest disadvantage is limited bandwidth, which restricts long-distance transmission with low error rates.

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The content of each of the technology chapters is organized into the following sections:

- **Executive Summary**—A brief overview of the chapter's contents.
- **Technology**—Basic background information covering how the technology evolved, how it works, and basic terminology. Recent major events and trends are also discussed.
- **Market Overview**—A summary of market growth, including projections for the forecast period, and of key vendors and their market shares.
- **Forecast**—Forecasts for the progress of the technology over the next one to three years (the "forecast period").

As an additional reference aid, the index makes it easy to locate discussions of specific topics, products, and companies. It also defines all the acronyms used in the text. Comprehensive lists of all figures, tables, and sidebars in the book follow the opening table of contents.

In addition, each of the four sections of the *Forecast* begins with a table of contents for the chapters in that section. These can easily be identified by the color stripe along the edge of the page.

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We have chosen the following usage for the *Technology Forecast*:

- All monetary amounts are expressed in U.S. dollars (\$).
- Units of measure are expressed in either the metric or the U.S. Customary system, depending upon common industry usage.
- A billion is 1,000 million (1,000,000,000 or  $10^9$ ).

### ■ Commentary and Questions

The editors and authors of *Technology Forecast: 2001–2003* welcome your comments. We also want to hear how you are using the *Technology Forecast* in your work, and how you might use it in the future. A self-addressed reader survey card is included at the back of the *Forecast*. You can also complete an online version of the survey card on our Web site [www.pwcglobal.com/tech-forecast](http://www.pwcglobal.com/tech-forecast).

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### ■ About the Cover

Ulli Michel describes his photograph, *Lightning over Johannesburg*, taken in July 1989, in these words:

Southern Africa experiences some of the most violent thunderstorms in the world, and it was one of these storms I witnessed from my house in Johannesburg.

While sitting in my garden late on a Sunday afternoon, I could see dark clouds gathering over the city's Hillbrow district. I quickly got out my camera and started to take long exposure pictures of this breathtaking natural display....I could not believe my luck when I discovered this frame, with the fork of lightning cutting across the Hillbrow skyline and hitting the big TV tower.

Michel is Reuters' global news picture editor. His photograph was included in *The Art of Seeing: The Best of Reuters Photography*, published by Pearson Education (London) in 2000. The tower shown is Hillbrow Tower, also known as Post Office Tower. With a height of 269 meters, it is the tallest building in Johannesburg.



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The CD-ROM enclosed with this book contains the text in Adobe Acrobat format and includes an index for full-text search. It is licensed for use by a single user only. Multiuser licenses for the electronic version of *Technology Forecast: 2001–2003* are also available; organizations that are interested should call the *Technology Forecast* information line at +1-650-470-6730.

*E-Business Technology Forecast: 2002–2004* (document #TC-04-02) will be available in late 2001 by calling the phone numbers listed above or accessing our Web site. The latest information about the availability of new *Technology Forecast* publications can be obtained by calling the *Technology Forecast* information line at +1-650-470-6730.

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The PricewaterhouseCoopers Technology Centre, located in Menlo Park, California, provides PricewaterhouseCoopers engagement teams and their clients with analysis and evaluation of current and emerging information technologies.

The Centre has a staff of researchers, technology analysts, and consultants with extensive experience in advanced applications of existing technologies and knowledge of the potential uses of emerging technologies.





Using the *Technology Forecast* and other original thought-leadership publications as references, Technology Centre staff deliver on-site presentations on technology trends to PricewaterhouseCoopers clients around the world. These presentations supplement our general consulting services, which focus on information technology and business strategy issues.

The Centre also provides fee-based custom research, technology due diligence, and competitive analysis of information, computer, and communications technologies and industry trends. This research is used to give the firm and its clients a competitive edge in the marketplace.

The Technology Centre engages in research and software development designed to maintain PricewaterhouseCoopers' leadership in delivering professional services. For example, Technology Centre knowledge management initiatives are incorporated into a wide range of audit, business advisory, tax, and consulting services.

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## CONTENTS

	v	ACKNOWLEDGMENTS	
	vi	HOW TO USE THIS BOOK	
	xi	LIST OF FIGURES	
	xv	LIST OF TABLES	
	xvii	LIST OF SIDEBARS	
<b>PERSPECTIVES</b>	<b>1</b>		
	3	INTRODUCTION	
	23	APPLICATIONS FOR THE MOBILE INTERNET	
	61	ALAN HARPER	
	71	KURT HELLSTRÖM	
	81	DON LISTWIN	
	91	KEIJI TACHIKAWA	
	101	PAUL WAHL	
<b>PROCESSORS &amp; PLATFORMS</b>	<b>111</b>		
	113	SEMICONDUCTORS	
	165	TRADITIONAL PLATFORMS	
	259	STORAGE TECHNOLOGIES	
	309	EMERGING PLATFORMS	
<b>COMMUNICATIONS</b>	<b>399</b>		
	401	TELECOMMUNICATIONS SERVICES	
	477	WIRELESS COMMUNICATIONS	
	561	WIRELINE COMMUNICATIONS	
	617	INTERNET & WEB TECHNOLOGIES	
<b>APPLICATIONS</b>	<b>699</b>		
	701	MIDDLEWARE & COMPONENT SOFTWARE	
	777	ENABLING TECHNOLOGIES FOR THE MOBILE INTERNET	
	855	KNOWLEDGE MANAGEMENT	
	<b>885</b>	<b>INDEX</b>	

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## ■ Technology Forecast Staff

**Director, Technology Forecast Publications** Eric M. Berg

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**Senior Editors** Robert D. Allen, Terri L. Karaoglan, Alan Morrison

**Staff Editors** Dennis Briskin, Sarah Hietpas

**Copy Editors** Ellen Clements, Gary Pfitzer

**Contributing Editors** Ken Amann, Vinod Baya, Dan Gordon, Michael Katz, David R. King, Ann Mueller, Mark J. Oldfield, Bo Parker, Terry Retter, Ray Seddigh

**Staff Researcher** Glorianne Wong

**Illustrator** Richard D. Eberly

**Distribution** Bruce L. Leininger, Susan Mills

**Marketing and Business Development** Lisa Glitzenstein, Catherine Saul, Jodi P. Slomsky

<b>PERSPECTIVES</b>	25	Worldwide Internet Access by Device: 1999–2004
	26	Wearable Watch-Size Concept Mobile Phones
	32	An Automotive Information System
	38	Siemens' WAP-Enabled Devices
	41	i-mode Access by Type of Service
	43	Concept Phones
	46	FOMA Applications
	60	EverSystems' Wireless E-Payment Vending Machine
<b>PROCESSORS &amp; PLATFORMS</b>	115	Transistor Counts for Successive Intel Processors
	121	Silicon on Insulator Technology
	125	Block Architecture of a Typical Microprocessor
	132	System Chip Set Architecture
	158	Worldwide Semiconductor Revenue by Type: 2000–2004
	159	Worldwide Microcomponent Revenue by Type: 2000–2004
	212	Architectures for Scalable Systems
	213	Shared-Bus Symmetric Multiprocessor Architecture
	213	Anatomy of a Simple Four-Node Crossbar Switch
	214	Non-Uniform Memory Access (NUMA)
	234	IBM's Parallel Sysplex Clustering Technology
	242	Worldwide Server Spending: 1999–2005
	244	Worldwide PC Shipments by Form Factor: 2000–2004
	245	Top Worldwide PC Suppliers by Units Shipped: 2000
	247	Worldwide Workstation Shipments by Operating System: 2000–2004
	248	Worldwide Personal Workstation Market: 2000
	249	Worldwide Traditional Workstation Market: 2000
	250	Worldwide Entry-Level Server Revenues by Vendor: 2000
	251	Worldwide Midrange Server Revenues by Vendor: 2000
	252	Worldwide High-End Server Revenues by Vendor: 2000
	253	Worldwide S/390 Shipments and Revenue: 2000–2004
	253	Worldwide Supercomputer Revenues by Vendor: 2000
	260	Magnetic Spots on Disk Platters
	269	Data Striping and Mirroring Using RAID
	278	A Comparison of NAS and SAN Architectures
	298	A Comparison of CD-R and CD-ROM
	300	Advantage of Blue Lasers for Recording
	302	Worldwide Disk Storage System Revenue by Type: 2000–2004
	303	Worldwide Network Attached Storage Revenue by Vendor: 2000
	303	Worldwide Storage Area Network Revenue by Vendor: 2000
	304	Worldwide Direct-Connected Disk Storage Revenue by Vendor: 2000

305	Worldwide Hard Disk Shipments by Supplier: 2000
306	Worldwide Market for Optical and Removable Media: 2000–2004
346	NetTV Solution Layers with Leading Provider Examples
346	NetTV Client Layers with Leading Provider Examples
363	Bluetooth Timeline
364	Bluetooth Protocol Stack
366	Jini Service Discovery and Fulfillment Example
367	Java and Jini Compared
367	UPnP Simple Service Discovery Protocol
368	UPnP in Action—Ad Hoc
368	UPnP in Action—Configured
386	Worldwide Smart Handheld Device Shipments by Type: 2000–2004
387	Worldwide Handheld Companion Shipments by Type: 2000–2004
388	Worldwide Smart Phone Shipments: 2000–2004
389	Smart Phone Shipments by Region: 2000–2004
390	Worldwide Information Appliance Shipments by Type: 2000–2004
391	Worldwide Information Appliance Installed Base by Type: 2004
391	Handheld Companion Worldwide Shipments by OS: 2000–2004
392	Worldwide Smart Phone Shipments by OS: 2000–2004
<b>COMMUNICATIONS</b>	
404	Basic Telephone Service over the Public Switched Telephone Network
408	Enterprise Toll Bypass Using VoIP
408	Long-Distance Telephone Service Using VoIP
409	Competing Local Telephone Service Using VoIP
412	Range of QoS Solutions
422	A Typical ISDN Customer Premises Connection
424	Frame Relay Protocol Stack
430	Remote Access/Remote Office VPN
432	Carrier Protocol Layering Options
447	Telecom Operations Map
478	Cellular Telephone Network
479	Cellular Telephone Technologies Chronology
483	Frequency Division, Time Division, and Code Division Multiple Access
488	GPRS Slot Structure
489	HSCSD versus GPRS
490	GPRS Infrastructure Modification to GSM Network
491	GPRS Protocol Stack
494	The Electromagnetic Spectrum
498	W-CDMA Network Architecture
501	Traditional Dual-Mode Architecture
501	Software-Defined Multimode Radio Architecture
504	Smart Antenna Operation
507	Metricom Network
508	Two-Way Paging System Architecture
519	Short-Range Wireless Network Product Availability

522	Bluetooth Piconet Configuration
525	Satellite Orbital Distances
528	VSAT Star Network
529	Satellite Frequency Bands
540	SnapTrack
542	A Signal-Attenuation System for Locating Mobile Telephones
543	An Angle-of-Arrival System for Locating Mobile Telephones
544	A Time Difference of Arrival System for Locating Mobile Telephones
553	Worldwide Mobile Data Subscribers by Service Type: 1999–2004
565	Hybrid Fiber-Coax Network Architecture
565	Fiber to the Neighborhood Network Architecture
568	ADSL Network Architecture
571	ADSL Digital Loop Carrier Service Architecture
585	SONET Multiplexing
586	SONET Ring Operation
591	Wavelength Division Multiplexing
596	Optical Add-Drop Multiplexery
597	Optical Cross-Connect Using MEMS Technology
628	Internet Browsing and Downloading
637	Dynamic Web Page
639	Server Architecture
653	A Sample XML Document
671	Router Functional Architecture
673	ATM Network with Edge Routing
675	Three Generations of Routers
678	Quality of Service Mechanisms in TCP/IP
680	DS Field in the Type of Service Octet of an IP Packet
682	A High-Level View of an End-to-End QoS Architecture
683	A Directory-Enabled Network
684	Comparison of Conventional and Active Networks
<b>APPLICATIONS</b>	
715	Seven Levels of Application Integration
716	EAI Architecture
726	Middleware for Linking Two Applications from Two Companies
728	Some Different Types of Components
732	A Detailed View of Different Types of Components
733	Client, Server, and Container Components
736	A Generic EJB Application Server
738	The OMG's CORBA Architecture
739	A Layer Diagram of OMG Object Management Architecture
743	An Overview of Microsoft's COM-DNA Approach
745	The COM+ Model that Incorporates MTS
748	An Overview of Microsoft's DNA Architecture
749	An Overview of Sun's J2EE Architecture

752	JavaBeans in Enterprise Applications
754	The Java 2 Platform
754	The Java 2 Platform, Enterprise Edition
755	IBM's San Francisco Project Architecture
765	Worldwide Middleware and Businessware Revenue by Market: 1999–2004
766	Leading MOM Vendors: 1999
767	Leading Transaction Server Middleware Vendors: 1999
767	Leading Object Middleware Vendors: 1999
768	Leading Business Middleware Vendors: 1999
769	Process-Oriented EAI Middleware Market: 1999–2004
770	EAI Middleware Vendor Market Share Estimates: 2000
782	Comparison of WAP and Traditional Internet Protocol Stacks
783	Elements of WAP Service
785	i-mode Architecture
786	i-mode Protocol Stack
787	Web Clipping Proxy Server
790	Subsystems Supporting Applications over Carrier Wireless Networks
791	Architecture for Wireless Application Delivery
793	An Example of a Data Tree
804	2Roam's Transcoder Solution Architecture
805	IBM's Extensible Transcoder Framework
818	Vertical and Horizontal Corporate Applications Compared
834	Exchange and Processing of Information in LBS
834	Architecture for Location-Based Services
835	Location-Based Services Network
837	Sun's Location Information Framework
849	Worldwide Mobile Middleware Revenue by Region: 2000–2005
850	Percent of Total Subscribers with Location-Based Services: 2001–2004
852	U.S. Wireless ASP Revenue: 1999–2004
857	Sources of Content for an Enterprise Information Portal
858	Elements and Processes of an Enterprise Information Portal
862	Visual Maps of Interrelated Concepts
867	SilverStream's ePortal Architecture
870	BroadVision's InfoExchange Portal Framework
874	Collaborative Product Definition Management



<b>PERSPECTIVES</b>	25	Penetration of Mobile Data Users by Region
	44	Popularity of i-mode Content
	44	DoCoMo's i-mode Fee Structure
	45	Sample i-mode Fee Services
	47	Expansion of Mobile Devices in Japan
	50	Fidelity's InstantBroker Technology Capabilities by Platform
<b>PROCESSORS &amp; PLATFORMS</b>	117	Semiconductor Manufacturing Road Map: Key Targets
	124	Leading Workstation Microprocessors
	133	Expected Intel Processor Shipments: 2001–2004
	157	Top 20 Semiconductor Vendors' Worldwide Sales: 2000
	160	Major Intel Acquisitions: 1999–2001
	185	Representative Hardware Defined in the PC 2001 System Design Guide
	233	The Evolution of S/390 CMOS Systems
	240	Worldwide Client Operating System Shipments: 2000
	241	Worldwide Server Operating System Shipments: 2000
	268	RAID Level Definitions
	276	Distinctions Between SAN and NAS
	311	Overview of Smart Emerging Platforms
	353	Microsoft's Embedded Offerings
	384	Product Segmentation of Smart Handheld Devices
<b>COMMUNICATIONS</b>	456	Major Standards Organizations and Industry Groups
	469	Worldwide Internet Traffic
	471	The World's Largest Telecom Companies by Revenue: 2000
	484	CDMA and TDMA Compared
	497	Selected 2.5G and 3G Cellular System Deployment Plans
	503	Basic Digital Modulation Methods
	506	Specifications of Switched Data Networks
	516	Fixed Wireless Service Introductions
	524	A Comparison of GEO, LEO, and MEO Satellites
	531	Mobile Satellite Services
	535	Two-Way Satellite Internet Services
	538	Proposed Broadband Satellite Services
	545	Leading Mobile Handset Vendors Worldwide: 2000 versus 1999
	546	Worldwide Mobile Telephone Connections: 2000 versus 1999
	551	3G Spectrum Licensing Status in Selected Countries
	552	Mobile Data Equipment Vendor Shares of Announced Contracts in 2000
	566	DSL Technologies

	576	VDSL Frequency Plan Data Rate Comparison at 1km Range
	586	SONET and SDH Line Rates
	591	DWDM Capacity of a Given Fiber
	596	MEMS Micromirror Optical Switching and Agilent Bubble Switching Compared
	603	Household Broadband Connections in Asia-Pacific (Selected Countries)
	604	Household Broadband Connections in Europe (Selected Countries)
	609	Deployment Status of Selected DWDM Terrestrial Systems
	610	Deployment Status of Selected DWDM Submarine Systems
	611	Leading Long-Haul Terrestrial DWDM System Vendors Worldwide: 1999–2000
	637	Web Server Software Usage
	686	Web User Population by Regions: 1998–2002
<b>APPLICATIONS</b>	712	Object Technology Definitions
	757	Important Middleware Services
	771	Leading Application Server Vendors: 1999
	771	Leading Component Construction and Assembly Tool Vendors: 1999
	772	Object-Oriented Analysis, Modeling, Design, and Construction Tool Vendors
	772	Component Vendors
	773	Leading 3GL Tool Vendors
	791	Required Middleware of Tiers in Wireless Application Architecture
	795	Options for Connecting Mobile Devices
	800	Solutions to Some Problems of Wireless Networks
	807	Content Formats for Wireless Devices
	822	Types of Wireless Access Requirements for Mobile Workers
	851	U.S. Wireless Instant Messaging Subscribers by Network: 2000–2004