

**Worldwide Telecommunications  
Market Opportunities, Forecasts, And Strategies,  
2002-2007**



*Picture by Susie Eustis*

**Worldwide Telecommunications Market  
Strategies, Opportunities and Forecasts,  
2002-2007**

**MOUNTAINS OF OPPORTUNITY**

**WinterGreen Research, Inc.  
Lexington, Massachusetts**

[www.wintergreenresearch.com](http://www.wintergreenresearch.com)

**Worldwide Communication MARKETS,**

**Positioning TO PARTICIPATE IN HIGH**

**GROWTH Internet Business to Business**

**Exchange SEGMENTS**

**MARKET STRATEGIES FORECASTS TO**

**2007**

**CHECK OUT THESE KEY TOPICS**

*VOICE AND DATA COMMUNICATION DRIVES PRIVATE AND PUBLIC  
COMMUNICATIONS INDUSTRY CONVERGENCE*

**Worldwide Telecommunication Market Strategies**

**Worldwide Telecommunication Market Positioning**

**Worldwide Telecommunication Market Growth Opportunities**

**End to End Solutions**

**Rules Engines Positioned As Primary Systems**

*WORLDWIDE TELECOMMUNICATION MARKET FORECASTS*

*WORLDWIDE MARKET SHARES*

*MISSION CRITICAL MIDDLEWARE MESSAGING*

*RULE ENGINES*

*VENDOR PRODUCTS OVER THE PUBLIC TELEPHONE*

*NETWORK AND INTERNET, PRIVATE VOICE*

*COMMUNICATIONS NETWORKS, AND DATA*

*COMMUNICATIONS NETWORKS*

*TRANSFORMATION ENGINES, PUBLISH SUBSCRIBE*

*Worldwide Telecommunication Broker Markets Shares*

*Telecommunication Cross Platform Market Shares*

## **REPORT METHODOLOGY**

THIS IS THE FORTY FIRST REPORT IN A SERIES OF MARKET RESEARCH REPORTS THAT PROVIDE FORECASTS IN COMMUNICATIONS, TELECOMMUNICATIONS, THE INTERNET, COMPUTER, SOFTWARE, AND TELEPHONE EQUIPMENT. THE PROJECT LEADERS TAKE DIRECT RESPONSIBILITY FOR WRITING AND PREPARING EACH REPORT. THEY HAVE SIGNIFICANT EXPERIENCE PREPARING INDUSTRY STUDIES. FORECASTS ARE BASED ON PRIMARY RESEARCH AND PROPRIETARY DATA BASES. FORECASTS REFLECT ANALYSIS OF THE MARKET TRENDS IN THE SEGMENT AND RELATED SEGMENTS. UNIT AND DOLLAR SHIPMENTS ARE ANALYZED THROUGH CONSIDERATION OF DOLLAR VOLUME OF EACH MARKET PARTICIPATION IN THE SEGMENT. MARKET SHARE ANALYSIS INCLUDES CONVERSATIONS WITH MARKETING DIRECTORS, DISTRIBUTORS, LEADING MARKET PARTICIPANTS, AND COMPANIES SEEKING TO DEVELOP MEASURABLE MARKET SHARE. OVER 200 IN DEPTH INTERVIEWS ARE CONDUCTED FOR EACH REPORT WITH A BROAD RANGE OF KEY PARTICIPANTS AND OPINION LEADERS IN THE MARKET SEGMENT.

**APPLICATION INTEGRATION IS CENTRAL TO  
IMPLEMENTATION OF BUSINESS EXCHANGES**

**YOU MUST HAVE THIS STUDY**

## **Companies Profiled**

<b>3Com Corporation</b>	<b>Comverse Technology</b>
<b>ADC Telecommunications</b>	<b>CopperCom</b>
<b>Advanced Fibre</b>	<b>Cysive</b>
<b>Communications</b>	<b>ECI Telecom-NGTS, Ltd.</b>
<b>Agere Systems</b>	<b>Ericsson</b>
<b>Agility Communications</b>	<b>Fujitsu</b>
<b>Alcatel</b>	<b>Intel</b>
<b>Avaya</b>	<b>Juniper Networks</b>
<b>Avanex / Oplink</b>	<b>Kyocera</b>
<b>Blue Sky Research</b>	<b>LG Electronics</b>
<b>Ciena</b>	<b>Lucent Technologies</b>
<b>Cisco Systems</b>	<b>Marconi</b>
<b>Comdial Corporation</b>	<b>Marconi DWDM</b>

Motorola  
 NEC  
 Netrix Corporation  
 NexVerse  
 Nokia

Nortel  
 Nuera  
 Openwave Systems

## Companies Profiled (Continued)

Princeton Optronics  
 Sagem  
 Siemens  
 SR Telecom  
 Sonus Networks  
 Sun Microsystems

Tekelec  
 Telcordia Technologies  
 Telica  
 Texas Instruments  
 VocalTec  
 Zhone Technologies

### WORLDWIDE TELECOMMUNICATIONS MARKET EXECUTIVE SUMMARY

Market Outlook	Summary Telecommunications Market Forecasts
Telecommunications / IP Convergence	Next Generation Networks
Telecommunication Product Analysis	

### WORLDWIDE TELECOMMUNICATIONS MARKET DESCRIPTION

Worldwide Telecommunications Markets	Lowering Service Provider Costs
Principal Competitive Factors In Telecommunication Markets	IP Telephony For Long Distance
Market Driving Forces	Long Haul Optical Systems
Market Growth Forces	Hybrid ISPs: Emergent Channel Of Application Service Providers
Fast Pace Of Adoption Of Internet Commerce	Enterprise Market Characteristics
Teleconferencing And Video Telephony	Large Enterprise Businesses .....
Global Communications Networking Industry In 2001	Small And Medium-Sized Businesses
Telecommunications Industry Adjustment In 2001	Global Enterprise Market
Restructuring Telecommunications	IP Telephony For Enterprise Networks
Economic Implications	End to End Voice Over IP
Networking Business Acquisitions	Voice Infrastructure Market
Telecommunications Equipment Vendor Consolidation	E-Commerce And Web Marketing
Service Provider Market Characteristics	Change In Telecommunication Network Architecture
Competitive Structure Of The Carrier Market	Foundations For Telecommunications Network Change
	Converged Network Revolution

### WORLDWIDE TELECOMMUNICATION MARKET FORECASTS

Worldwide Telecommunications Market Trends	Communications Opportunity
Worldwide Telecommunications Market Driving Forces	Service Providers
Go To Market Strategy	Service Provider Diversity
Impact of Voice Packet Architecture	Marketing Globally
Change In Telecommunication Markets	Service Provider Revenue Shifts
	Network Traffic

Communications Traffic Profile	Telecommunications Market Regional Analysis
Internet Traffic	Index Of Company Sales
Marketing Globally	Wireless Telecommunications Market Forecasts
Market Driving Forces	Wireless Infrastructure
Market Outlook	Wireless Infrastructure Regional Analysis
Market Growth Factors	Driving Forces Of Wireless Infrastructure Market
Time To Market	Base Stations
Pursue Performance Excellence	Wireless Infrastructure Market Shares
Telecommunications Summary Market Share Analysis	Wireless Infrastructure Market Forecasts
Telecommunications Summary Segment Analysis	Wireless Handset Market Shares
Summary Telecommunications Market Forecasts	

**WORLDWIDE TELECOMMUNICATIONS MARKET FORECASTS (CONTINUED)**

Wireless Handset Market Forecasts	Routers
Wireless LAN Market Forecasts	Enterprise Telecommunications Markets
Broadband Fixed Wireless Market Forecasts	PBX Forecasts By Line Size
Mobile Subscribers	PBX Market Analysis By Line Size
Telecommunication Switch Markets	Number Of PBX Systems Shipped By Line Size
Circuit Switches	Enterprise IP PBX Systems Market Shares
Multiservice Switches	Enterprise IP PBX Systems Market Forecasts
Cabling And Assemblies	Frame Relay Systems
Softswitch Market Forces .....	Call Centers.....
Open Systems Hardware Platforms	Interactive Voice Response
Sonet	Enterprise Hybrid / Key Systems
Sonet Market Shares	Enterprise Hybrid / Key Systems Market Shares
Sonet Market Forecasts .....	Enterprise Hybrid / Key Systems Market.....
DWDM Systems Market Shares	Forecasts
DWDM Systems Market Forecasts	Unified Messaging Market
Digital Subscriber Line (DSL)	Unified Messaging Enterprise Systems Market
DSL Market Shares	Forecasts
DSL Market Forecasts	Unified Messaging Enterprise Systems Market
Digital Loop Carriers (DLCs)	Shares
DLC Market Shares	Voice Messaging Systems Market Forecasts
DLC Market Forecasts	

**WORLDWIDE TELECOMMUNICATIONS EQUIPMENT PRODUCT DESCRIPTION**

3.1	Confusing Marketplace.....	3.3.8	Siemens Surpass Services On Any
3.2	Core Networking.....	Network.....	3-18..... 3-2
3.2.1	Cisco End-To-End Networking	3.3.9	Alcatel 5000 Softswitch Platform.....
Solutions	3-2	3.3.10	Nortel Class 5 Small To Medium
3.2.2	Lucent Network Architecture .....	Applications Strategy.....	3-20..... 3-3
3.2.3	Nortel Network Unified Networks	3.3.11	Ericsson AXE.....
Architecture	3-5	3.4	Voice Packet Switching .....
3.2.4	Ericsson IP Architecture .....	3.4.1	Packet Switching Advantages.....
		3.4.2	Packet Switching Disadvantages .....
3.3	Service Provider Switching Products .....	3.4.3	Lucent 7R/E Switch.....
3.3.1	Class 5 Switching.....	3.4.4	Nortel Evolutionary Platforms.....
3.3.2	Lucent Class 5 Switches .....	3.4.5	Siemens Surpass® Solution.....
3.3.3	Lucent 5ESS Switch.....	3.4.6	Products Targeted To Internet.....
3.3.4	Lucent SoftSwitch .....	Service Providers.....	3-25..... 3-10
3.3.5	Siemens EWSD .....	3.4.7	Cisco IP + ATM Switches.....
3.3.6	Siemens Surpass hiQ.....	3.4.8	Ericsson IP Telephony 2.1 Switch.....
3.3.7	Siemens hiQ 9200 Softswitch.....	3.4.9	Ericsson IPT 2.1 Platform.....
			3-16.....

3.4.10	Siemens Unisphere Networks .....	3.6	Access Products .....	3-37
		3.6.1	Broadband Access .....	
		3.6.2	Broadband Infrastructure And Access Products	3-44
		3.6.3	Nortel Shasta Broadband Service Node Aggregation	3-45
3.5	Multiservice Switches .....	3.6.4	DSL .....	3-38
3.5.1	Cisco IP + ATM Switches .....	3.6.5	ADSL .....	3-38
3.5.2	Cisco IP+ATM Products .....	3.6.6	Alcatel DSL .....	3-39
3.5.3	Cisco IP+ATM Solution .....	3.6.7	Alcatel 7310 Loop Voice Gateway ADSL	3-49
3.5.4	Lucent Next Generation Core Multiservice Switch	3.6.8	Alcatel VoDSL .....	3-40
	3-40	3.6.9	Lucent Access Products .....	
3.5.5	Nortel Passport .....	3.6.10	Lucent MAX TNT Edge Access Product	3-51
3.5.6	Nortel CVX 600 Multi-Service Access Switch	3.6.11	Lucent Stinger DSL .....	
	3-41			
	3.5.7			
	Ericsson Single- Domain Multi-Service Network Telephony Server			3-42

**WORLDWIDE TELECOMMUNICATIONS EQUIPMENT PRODUCT DESCRIPTION (CONTINUED)**

3.6.12	Lucent Broadband Access .....	3.9.5	Alcatel 7770 Routing Core .....	3-52
3.6.13	Siemens Access .....	Platform	3-75	3-53
3.6.14	Ericsson ADSL .....	3.10	Telecommunications .....	3-54
3.6.15	Ericsson Digital Residential Gateways		Applications And Services Delivery	
	3-54	Products	3-76	3-55
3.6.16	ADC's Avidia® System .....	3.10.1	Lucent Wireless Applications And Service Delivery Products	3-57
3.7	Digital Loop Carriers .....	3.10.2	Nortel Applications And Services Delivery Products	3-59
3.7.1	Advanced Fibre Communications .....			3-61
3.7.2	NEC FA-1201 .....			
3.7.3	Alcatel DLC .....			
3.7.4	Alcatel Starspan Electrically-Fed Network Unit			3-62
3.8	Next-Generation Optical And Photonic Switches			3-62
3.8.1	Lucent Optical Networking Products	3.11	Value Added Services .....	
	3-63	3.11.1	Avaya Contact Centers .....	
3.8.2	Lucent LambdaUnite .....	3.11.2	Cisco Value Added Services Support	3-64
3.8.3	Lucent LambdaRouter™ All Optical Switch	3.11.3	Avaya Value Added Services .....	
	3-65	3.11.4	Avaya Unified Communication Manager	3-68
3.8.4	Alcatel 1674 Lambda Gate .....	3.11.5	Audio, Video And Data Conferencing	3-85
3.8.5	Alcatel 1680 Optical Gateway Manager	3.11.6	Hosted Solutions .....	3-68
	3-68	3.12	Interactive Multimedia Server .....	3-69
3.8.6	Nortel OPTera Connect .....	3.12.1	Nortel Interactive Multimedia Server	3-70
3.8.7	Nortel Succession .....			
3.9	Service Provider Routers .....	3.13	Integrated Management .....	
3.9.1	Cisco Service Provider Packet Switching And Routing	3.14	Network Management Products .....	
	3-70	3.14.1	Lucent Network Management Products	3-74
3.9.2	Cisco Next Generation Internet Routing			
	3-74	3.14.2	Nortel Preside Optical Long-Haul Network Management	
3.9.3	Cisco 12000 Series .....			
3.9.4	Nortel Packet Switching and Routing			3-75

	Software	3-88	3.19.1	Planar Technology .....	
3.14.3	Nortel Network Management		3.19.2	Alcatel Planar Devices .....	
	Software	3-88	3.19.3	Modules	3-104
3.15	DWDM	3-89	3.19.4	Alcatel Discrete Modules, High	
3.15.1	Network Transport .....		Speed Devices.....	3-104	3-90
3.15.2	Metro Optical Networking		3.19.5	Corning Optical Amplifiers.....	
Systems	3-91		3.19.6	JDSU / SDL Raman Chips And	
3.15.3	Nortel DWDM .....		Amplifiers.....	3-107	3-91
3.15.4	Nortel DWDM Optical Long-Haul		3.19.7	JDS Uniphase High-Power, 14xx	
Networks	3-91		Raman Pump Module	3-107	
3.15.5	Ciena Long-Distance Optical		3.19.8	Sumitomo Tiny Bits .....	
Transport	3-92		3.19.9	Sumitomo Electric Transceivers .....	
3.15.6	Cisco Optical Networking.....	3.20	Wireless.....	3-110	3-93
3.15.7	NEC DWDM SpectralWave.....	3.20.1	Wireless Core Network Equipment.....	3-93	
3.15.8	Siemens DWDM .....		3-110		3-94
3.15.9	Fujitsu Flashwave 7600.....	3.20.2	Base Station Products.....		3-94
		3.20.3	Wireless Smart Antenna		
			Technology	3-111	
3.16	SONET	3-96	3.20.4	Nokia Handsets .....	
3.16.1	Fujitsu SONET .....		3.20.5	Nokia Server Products.....	3-97
3.16.2	Alcatel SONET .....		3.20.6	Ericsson Jambala™ Mobility.....	3-98
3.16.3	Nortel SONET .....		Gateway.....	3-117	3-98
3.16.4	Siemens Sonet .....		3.20.7	Ericsson Mobile Platforms .....	3-99
3.17	Optical Components .....		3.20.8	Juniper / Ericsson.....	3-99
3.17.1	Nortel Optical Networking		3.20.9	NEC 3G W-CDMA .....	
Components	3-99		3.20.10	NEC W-CDMA .....	
3.18	New Optical Component Products .....				3-100
3.19	Active And Passive Optical Component				
Products	3-101				

**WORLDWIDE TELECOMMUNICATIONS EQUIPMENT PRODUCT DESCRIPTION (CONTINUED)**

3.20.11	Nortel Multiservice Switch For	3.20.22	Evolium SAS Alcatel / Fujitsu	
Wireless	3-120	Company	3-128	
3.20.12	Nortel Wireless .....	3.20.23	Kyocera And Arraycomm Mobile	
3.20.13	Nortel GPRS Gateway Support	And Satellite	3-129	
Node	3-122	3.20.24	Motorola Personal	
3.20.14	Nortel Wireless Networking	Communications Segment	3-130	
Products	3-122	3.20.25	Motorola Global Telecom	
	3.20.15	Nortel Networks	Solutions Segment	3-130
		Wireless	3.20.26	Siemens Wireless.....
		GSM/GPRS	3.20.27	Siemens Handsets .....
		Infrastructure	3.20.28	Siemens TD-SCDMA Video.....
	Upgrades	3-123	3.20.29	Siemens Wireless Modules.....
3.20.16	Nortel Networks CDMA Smart	3.20.30	Siemens Mobile Phones .....	
Antenna Solution	3-124			
3.20.17	Lucent Mobility Products .....			3-125
3.20.18	Lucent Base Station Products .....			3-126
3.20.19	Lucent Wireless Core Network	3.21	Enterprise Products.....	
Equipment	3-126	3.21.1	Siemens Enterprise .....	
3.20.20	Lucent Softswitch-Based 3-G	3.21.2	Nortel Enterprise Circuit To Packet	
MSC	3-127	Voice Networks	3-136	
3.20.21	Alcatel 3G/UMTS .....	3.21.3	Nortel Enterprise VoIP.....	3-127
		3.21.4	Nortel Enterprise.....	

3.21.5	Ericsson Enterprise Systems .....	3.21.8	Cisco AVVID.....	3-138
3.21.6	Cisco Enterprise / Cisco AS5300/ AS5800/Voice Gateway 3-138	3.21.9	Cisco IOS Software .....	
3.21.7	Cisco AS5350 ISP Universal Gateway 3-143	3.21.10	Avaya PBX 3-146	
		3.21.11	Comdial 3-148	
		3.22	Remote Office Telephone Sets .....	

**WORLDWIDE TELECOMMUNICATIONS TECHNOLOGY**

4.1	Rapid Technological Change .....	4.18	Interoperability Of Systems.....	4-1
4.2	Packet / Cell Voice Systems .....	4.18.1	Prioritization.....	4-2
4.3	Voice-Enabling The Data Network .....	4.18.2	Fragmentation.....	4-3
4.4	Transition From Circuit Switch Network To IP Architecture 4-5	4.18.3	Variable Delay .....	
4.5	IP Network Delay And Congestion .....	4.18.4	Interoperability Standards.For.IP.....	4-6
4.6	New Network Architecture .....		ATM, And.Frame... 4-7	
4.7	Network Layer Architecture Evolution .....		Relay.....	4-8
4.8	Carrier Router Architecture .....		Voice.Transmission.....	4-10
4.9	Lucent Bell Labs .....	4.18.5	Interworking.....	4-11
4.9.1	Impact Of Lucent Reorganization On Bell Labs 4-12	4.19	SONET 4-35	
4.10	Voice Over The Internet (VoIP) Technology 4-13	4.20	SNMP Vulnerability .....	
4.11	Carrier Class VoIP Features .....	4.21	World Bank and ITU Stimulation Of Infrastructure 4-36	
4.12	Voice Packet System Technology .....	4.22	ITU.....	4-37
4.13	Next Generation Internet Routing.....	4.23	Wireless.Protocols.....	4-15
4.14	Optical IP Networking Architectures .....			4-16
4.14.1	Optical MSPPs .....			4-18
4.14.2	Issues Relating To MSPP Solutions 4-19			
4.14.3	Benefits Of MSPP Solutions .....			4-20
4.14.4	Multiplatform IP And Optical Interworking 4-21			
4.14.5	Benefits Of Multiplatform Solutions 4-22			
4.15	ATM Prioritization .....			4-23
4.16	Unified IP / Optical Networks .....			4-24
4.16.1	Optical Storage Connectivity Solutions 4-27			
4.17	Solution Density Technical Barriers.....			4-27

**TOP TEN TELECOMMUNICATION EQUIPMENT COMPANY PROFILES**

<b>5. TOP TEN TELECOMMUNICATION EQUIPMENT COMPANY PROFILES</b>	5.1.10	Alcatel Optics .....	
5.1	Alcatel 5-1	5.1.11	Alcatel e-Business.....
5.1.1	Alcatel Acquisition Of Astral Point Communications 5-2	5.1.12	Alcatel Optronics 4th Quarter And Full Year 2001 Results 5-9
5.1.2	Alcatel Customers .....	5.1.13	Alcatel Optronics.....
5.1.3	Digitel (Philippines) / Alcatel.....	5.1.14	Alcatel Softswitches.....
5.1.4	Sichuan Unicom (China) / Alcatel.....	5.1.15	Alcatel Integration.....
5.1.5	Alcatel Fourth Quarter And Full Year 2001 Results 5-3	5.2	Avaya.....
5.1.6	Response To Economic Decline.....	5.2.1	Avaya Revenue .....
5.1.7	Alcatel Geographical Distribution Of Sales 2001 5-6	5.2.2	Avaya / Quintus .....
5.1.8	Alcatel Segment Analysis 2001 .....	5.2.3	Avaya Outsourcing.....
5.1.9	Alcatel Business Analysis Carrier Networking 5-7	5.2.4	Avaya Positioning Strategy.....
		5.2.5	Avaya Organizational Strategy .....
		5.2.6	Avaya Reorganization.....
		5.2.7	Avaya Products .....

5.2.8	Avaya Eclips Portfolio .....	5.8.3	Commercial, Government. And	5-20
5.2.9	Avaya Customers .....		Industrial Solutions Segment.....	5-21
5.3	Cisco Systems .....	5.8.4	Broadband Communications..	5-22
5.3.1	Cisco Net Sales / Revenue .....		Segment .....	5-23
5.3.2	Cisco Routers .....	5.8.5	Semiconductor Products Segment	5-24
5.3.3	Cisco Switches .....	5.8.6	Motorola Revenue.....	5-25
5.3.4	Cisco Access.....	5.8.7	Motorola 2001 Acquisitions.....	5-25
5.3.5	Cisco Service Provider Packet	5.9	NEC	5-59
	Switching And Routing 5-26	5.9.1	NEC Handsets .....	
5.3.6	Cisco IOS Software .....	5.9.2	NEC Handset Customers.....	5-27
5.3.7	Cisco Softswitch .....	5.9.3	NEC Third Quarter .....	5-28
5.3.8	Cisco Systems / Vida Networks.....		Revenue Of The First	5-28
5.4	Ericsson		Year	
5.4.1	Ericsson Customers .....		Ending March 31, 2002 .....	5-30
5.4.2	Ericsson And Samsung .....	5.9.4	NEC Networks.....	5-31
5.4.3	Cingular Wireless / Ericsson.....	5.9.5	NEC Solutions (America).....	5-32
5.4.4	Ericsson CDMA Systems .....	5.10	Nokia .....	5-32
5.4.5	WLAN From Ericsson.....	5.10.1	Nokia Networks.....	5-33
5.4.6	Ericsson / Juniper EJM Mobile IP .....	5.10.2	Nokia Customers .....	5-34
5.4.7	Ericsson PBX.....	5.10.3	Nokia Mobile Phones .....	5-34
5.4.8	Ericsson Revenue 2001 .....	5.10.4	Open Mobile Architecture.....	5-35
5.4.9	Multi-Service Networks .....		Initiative .....	5-37
5.4.10	Internet Applications .....	5.10.5	Nokia Networks.....	5-38
5.5	Fujitsu	5.10.6	Nokia Ventures Organization .....	
5.5.1	Fujitsu Network Communications .....	5.10.7	Nokia Revenue .....	5-39
5.5.2	Fujitsu Sonet .....	5.10.8	Nokia Broadband DSL .....	5-39
5.5.3	Fujitsu DWDM .....	5.10.9	Nokia / Proximus .....	5-40
5.5.4	Fujitsu Network Communications	5.10.10	Smart Communications	
	Optical Transport Solutions .....		(Philippines) / Nokia.....	5-41
5.5.5	Fujitsu Network Communications	5.10.11	Orange(UK) / Nokia .....	
	Revenue	5.10.12	Nokia Provider Partnerships .....	5-42
5.5.6	Fujitsu FY2001 Third Quarter	5.10.13	Nokia Revenue .....	
	Financial Results	5.10.14	Nokia Acquisitions.....	5-43
5.5.7	Services & Software .....	5.10.15	Nokia Joint Initiatives.....	5-44
5.5.8	Information Processing.....			5-44
5.5.9	Telecommunications .....			5-45
5.5.10	Electronic Devices .....			5-45
5.5.11	Fujitsu Telecommunications			
	Europe Limited	5.11	Nortel	5-79
5.6	Lucent Technologies .....	5.11.1	Strategies.....	5-79
5.6.1	Service Provider Networks .....	5.11.2	Lines Of Business.....	5-46
5.7	Lucent Technologies .....	5.11.3	Nortel Enterprise Solutions.....	5-47
5.7.1	Lucent Sale Of Optical Fiber	5.11.4	Nortel Networks Realignment Plan .....	
	Business	5.11.5	Nortel Reorganization .....	5-49
5.7.2	Lucent Sale Of Manufacturing	5.11.6	Nortel Networks Optical Networks .....	
	Operations	5.11.7	Nortel Networks Customers .....	5-51
5.7.3	Agere	5.11.8	Nortel Networks	5-52
5.7.4	Lucent Softswitch / Level 3.....		Open.....	5-53
5.8	Motorola		Optical	
5.8.1	Motorola Cost Reduction Actions .....		Dense.....	5-54
5.8.2	Motorola Customers .....			5-55

	Wavelength Division		Communicat ion
	Multiplexing (DWDM) System.....	Networks Group.....	5-86
5.11.9	IP-Ready Open Optical Interfaces .....	5.12.4 Siemens Strategic Partnership.....	5-86
5.11.10	Nortel Networks Optical Packet Network Solution 5-87	5.12.5 With Quintus Corporation.....	
5.11.11	IP Data Services .....	5.12.6 HiPath Procenter Strategy .....	5-89
5.11.12	Sonet/SDH 5-89	5.12.7 HiPath Enterprise Convergence.....	5-98
5.11.13	Optical IP Network Backbones .....	5.12.8 Siemens Surpass.....	5-90
5.11.14	Acquisitions 5-90	5.12.9 Siemens Customers .....	
5.11.15	Focus On Solutions.....	5.12.10 Siemens Information And.....	5-90
5.11.16	Nortel Revenues .....	5.12.11 Communication Networks.....	5-91
5.11.17	Motorola / Nortel In Wireless Merger Talks 5-92	5.12.12 Siemens U.S. 5-101	
5.11.18	Nortel Networks / Sprint .....	5.12.13 Siemens Global Leadership Positions.....	5-102
5.11.19	Nortel Networks / Cingular.....	5.12.14 Information And Communication.....	5-94
5.12	Siemens 5-95	5.12.15 Networks (ICN) 5-104	
5.12.1	Siemens Information And Communication Networks .....	5.12.16 Siemens / Unisphere Solutions.....	
5.12.2	Siemens Corporate.....	5.12.17 Siemens ICN Positioning.....	5-95
	5.12.3 Reorganization Of Siemens Information And	5.12.18 Mobile (ICM) 5-108	
		5.12.19 Motorola And Siemens.....	
		5.12.20 Siemens Revenue Fiscal 2000 And 2001 5-111	

**SELECTED WORLDWIDE COMMUNICATIONS COMPANY PROFILES**

<b>6. SELECTED WORLDWIDE COMMUNICATIONS COMPANY PROFILES</b>		6.5.1	Agility 3040 Widely Tunable Laser 6-11
6.1	3Com Corporation .....	6.6	Avanex / Oplink..... 6-1
6.1.1	3Com / CommWorks .....	6.6.1	Avanex 6-13..... 6-1
6.2	ADC Telecommunications.....	6.6.2	Oplink 6-13..... 6-2
6.2.1	Broadband Infrastructure And Access 6-3	6.7	Blue Sky Research.....
		6.8	Ciena 6-14
		6.8.1	Ciena / ONI Systems .....
6.3	Advanced Fibre Communications .....	6.8.2	Ciena Customers..... 6-5
6.3.1	AFC Customers.....	6.8.3	Ciena Revenue..... 6-6
6.3.2	AFC's Next-Generation Network .....	6.9	Comdial Corporation..... 6-6
6.3.3	Advanced Fibre To Acquire AccessLan Communications.....	6.9.1	Comdial Restructuring .....
6.3.4	AFC / AccessLan .....	6.9.2	Comdial Voice Switching Systems.....
	6.3.5 Advanced Fibre Communications Multiservice Edge Switching Platform 6-9	6.9.3	Comdial Voice Messaging..... 6-8
		6.9.4	Comdial Computer Telephony Integration Solutions 6-23
		6.9.5	Comdial Revenue.....
6.3.6	Advanced Fibre Communications Revenue 6-10	6.10	Comverse Technology .....
		6.11	CopperCom.....
		6.12	Cysive 6-26
		6.12.1	Cysive Customers.....
		6.12.2	Cysive Revenue.....
6.4	Agere Systems .....	6.13	ECI Telecom-NGTS, Ltd.....
6.5	Agility Communications.....	6.14	Intel 6-28..... 6-10
		6.14.1	Intel Revenue..... 6-11

6.14.2	Intel Acquisitions .....	6.23	Openwave Systems.....	6-30
6.15	Juniper Networks .....	6.24	Princeton Optronics.....	6-30
6.16	Kyocera 6-32	6.25	Sagem 6-46	
6.17	LG Electronics .....	6.26	SR Telecom.....	6-32
6.18	Marconi 6-33	6.27	Sonus Networks .....	
6.18.1	Marconi Communications Networks 6-34	6.27.2	Sonus Softswitch.....	
6.19	Marconi DWDM .....	6.28	Sun Microsystems .....	
6.19.1	Marconi Access Systems .....	6.29	Tekelec 6-48.....	6-35
6.19.2	Marconi / Telecom Italia Wireline .....	6.30	Telcordia Technologies.....	6-35
6.20	Netrix Corporation .....	6.31	Telica 6-49.....	6-36
6.20.1	Products 6-39	6.31.1	Telica / Penn Telecom.....	6-36
6.21	NexVerse 6-40	6.31.2	Telica GR-303 DLC.....	
6.21.1	Nexverse Partners With Pactolus.....	6.31.3	Telica's Plexus 9000 .....	
6.21.2	NexVerse Softswitch .....	6.31.4	Tekelec Revenue.....	6-40
6.21.3	NexVerse Networks And ECI Telecom 6-43	6.32	Texas Instruments.....	6-42
6.22	Nuera 6-44	6.33	VocalTec 6-53	
6.22.1	Nuera Communications Customers 6-45	6.33.1	Vocaltec Softswitch.....	
6.22.2	Nuera Communications Softswitch 6-45	6.34	Zhone Technologies.....	

***MANY OF THESE KEY TOPICS HAVE PHENOMENAL SUBCATEGORIES***

## LIST OF TABLES AND FIGURES

### Market Forecasts 2002-2007      Market Shares 2001

TABLE ES -1.....	ES -1
TELECOMMUNICATIONS INFRASTRUCTURE MARKET OUTLOOK	
TABLE ES -2.....	ES -5
WORLDWIDE TELECOMMUNICATIONS EQUIPMENT MARKET FORECASTS, DOLLARS, 2002-2007	
TABLE ES -3.....	ES -6
TOP TEN TELECOMMUNICATIONS EQUIPMENT PROVIDER SHIPMENTS, 1998, 1999, 2000, AND 2001	
TABLE ES -4.....	ES -7
REASONS FOR TELECOMMUNICATIONS MARKET DECLINES IN 2001	

## LIST OF TABLES AND FIGURES (CONTINUED)

### Market Forecasts 2002-2007      Market Shares 2001

TABLE 1-1.....	1-3
CHANGING TELECOMMUNICATION MARKET CONDITIONS	
TABLE 1-2.....	1-4
PRINCIPAL COMPETITIVE FACTORS IN TELECOMMUNICATION MARKETS	
TABLE 1-3.....	1-7
CUSTOMIZATION OF TELECOMMUNICATIONS INFRASTRUCTURE EQUIPMENT	
TABLE 1-4.....	1-14
ISSUES RELATING TO CHANGE BROUGHT BY BROADBAND COMMUNICATIONS	

TABLE 1-5..... 1-16  
ASPECTS OF NETWORKING BUSINESS ACQUISITIONS  
TABLE 1-6..... 1-19  
SERVICE PROVIDER MARKET CHARACTERISTICS  
  
TABLE 1-7..... 1-28  
INFRASTRUCTURE MARKET FACTORS  
TABLE 1-8..... 1-32  
SHIFT FROM SEPARATE VOICE AND DATA CORE TRANSMISSION SYSTEMS

**LIST OF TABLES AND FIGURES (CONTINUED)**

**Market Forecasts 2002-2007      Market Shares 2001**

TABLE 2-1..... 2-2  
TELECOMMUNICATIONS INDUSTRY TRENDS  
TABLE 2-2..... 2-4  
FACTORS THAT IMPACT LOWER DEMAND FOR TELECOMMUNICATIONS EQUIPMENT  
TABLE 2-3..... 2-5  
PRINCIPAL COMPETITIVE FACTORS IN TELECOMMUNICATIONS MARKETS  
TABLE 2-4..... 2-8  
CHANGE IN TELECOMMUNICATIONS MARKETS  
TABLE 2-5..... 2-12  
TELECOMMUNICATIONS MARKET GROWTH ISSUES  
TABLE 2-6..... 2-13  
COMMUNICATIONS NETWORK MARKET OPPORTUNITIES  
TABLE 2-7..... 2-15  
NUMBER OF CARRIERS WORLDWIDE, 2001 AND 2003  
TABLE 2-8..... 2-17  
SERVICE PROVIDER DIVERSITY  
TABLE 2-9..... 2-18  
MEANS FOR ADAPTING TO SERVICE PROVIDER DIVERSITY  
TABLE 2-10..... 2-19  
MARKETING GLOBALLY  
TABLE 2-11..... 2-21  
SERVICE PROVIDER NEEDS  
TABLE 2-12..... 2-23  
U.S. BACKBONE INTERNET AND VOICE TRAFFIC GROWTH, 1998-2003  
TABLE 2-13..... 2-24  
WORLDWIDE BACKBONE INTERNET AND VOICE TRAFFIC GROWTH, 1998-2005  
TABLE 2-14..... 2-25  
MEANS TO ACHIEVE A GLOBAL PRESENCE  
TABLE 2-15..... 2-27  
TELECOMMUNICATIONS MARKET DRIVING FORCES  
TABLE 2-16..... 2-28  
TELECOMMUNICATIONS INFRASTRUCTURE MARKET OUTLOOK  
TABLE 2-17..... 2-30  
TELECOMMUNICATIONS INFRASTRUCTURE BENEFITS  
  
TABLE 2-18..... 2-32  
TELECOMMUNICATIONS EQUIPMENT MARKET GROWTH FACTORS  
FIGURE 2-19..... 2-36  
TOP TEN TELECOMMUNICATIONS PUBLIC EQUIPMENT SHIPMENTS BY COMPANY, 2001

**TABLE 2-20..... 2-37**  
**TOP TEN TELECOMMUNICATIONS EQUIPMENT PROVIDER SHIPMENTS, 2001**  
**FIGURE 2-21..... 2-38**  
**TOP 10 TELECOMMUNICATIONS PROVIDER SHIPMENTS, 1998-2001**  
**TABLE 2-22..... 2-39**  
**TOP TEN TELECOMMUNICATIONS EQUIPMENT PROVIDER SHIPMENTS, 1998, 1999, 2000, AND 2001**  
**FIGURE 2-23..... 2-40**  
**WORLDWIDE TELECOMMUNICATIONS EQUIPMENT SHIPMENTS BY SEGMENT, 2001**  
**TABLE 2-24..... 2-41**  
**GLOBAL TELECOMMUNICATIONS EQUIPMENT PROVIDER SHIPMENTS BY SEGMENT, DOLLARS, 2001**  
**FIGURE 2-25..... 2-42**  
**WORLDWIDE TELECOMMUNICATIONS EQUIPMENT SHIPMENTS BY SEGMENT, 2007**  
**TABLE 2-26..... 2-43**  
**GLOBAL TELECOMMUNICATIONS EQUIPMENT PROVIDER SHIPMENTS BY SEGMENT, DOLLARS, 2007**  
**FIGURE 2-27..... 2-44**  
**WORLDWIDE TELECOMMUNICATIONS EQUIPMENT MARKET FORECASTS, DOLLARS, 2002-2007**  
**TABLE 2-28..... 2-45**  
**GLOBAL TELECOMMUNICATIONS EQUIPMENT SHIPMENT FORECAST BY SEGMENT, DOLLARS, 2002-2007**

**TABLE 2-29..... 2-46**  
**REASONS FOR TELECOMMUNICATIONS MARKET DECLINES IN 2001**  
**FIGURE 2-30..... 2-47**  
**WORLDWIDE TELECOMMUNICATIONS EQUIPMENT SHIPMENTS BY REGION, 2001**  
**TABLE 2-31..... 2-48**  
**WORLDWIDE TELECOMMUNICATIONS EQUIPMENT PROVIDER SHIPMENTS BY REGION, DOLLARS, 2001**  
**FIGURE 2-32..... 2-49**  
**INDEXED SALES OF SELECTED LEADING TELECOMMUNICATIONS EQUIPMENT SUPPLIERS, 1993-2001**  
**TABLE 2-33..... 2-50**  
**INDEX OF COMPANY SALES (1993-2001)**  
**FIGURE 2-34..... 2-52**  
**WORLDWIDE WIRELESS TELECOMMUNICATIONS EQUIPMENT MARKET FORECASTS, DOLLARS, 2002-2007**  
**TABLE 2-35..... 2-53**  
**GLOBAL TELECOMMUNICATIONS WIRELESS EQUIPMENT SHIPMENT FORECAST BY SEGMENT, DOLLARS, 2002-2007**  
**TABLE 2-36..... 2-55**  
**FACTORS CONTRIBUTING TO MOBILE SYSTEMS INFRASTRUCTURE GROWTH**  
**FIGURE 2-37..... 2-62**  
**WORLDWIDE WIRELESS BASE STATION TELECOMMUNICATIONS EQUIPMENT MARKET FORECASTS, DOLLARS, 2002-2007**  
**FIGURE 2-38..... 2-65**  
**WORLDWIDE WIRELESS SWITCH INFRASTRUCTURE TELECOMMUNICATIONS EQUIPMENT MARKET FORECASTS, DOLLARS, 2002-2007**  
**FIGURE 2-39..... 2-70**  
**WORLDWIDE WIRELESS HANDSET MARKET FORECASTS, DOLLARS, 2002-2007**

**FIGURE 2-40..... 2-75**

WORLDWIDE CENTRAL OFFICE TELECOMMUNICATIONS EQUIPMENT MARKET FORECASTS,  
DOLLARS, 2002-2007  
TABLE 2-41..... 2-76

GLOBAL TELECOMMUNICATIONS CENTRAL OFFICE EQUIPMENT SHIPMENT FORECAST BY  
SEGMENT, DOLLARS, 2002-2007  
FIGURE 2-42..... 2-78

CIRCUIT SWITCH MARKET FORECASTS, 2002-2007  
FIGURE 2-43..... 2-80

MULTISERVICE ATM / IP WIDE AREA NETWORK SWITCH MARKET FORECASTS, DOLLARS, 2002-2007  
FIGURE 2-44..... 2-81

WORLDWIDE CENTRAL OFFICE CABLE AND ASSEMBLY MARKET FORECASTS, DOLLARS, 2002-2007  
FIGURE 2-45..... 2-82

WORLDWIDE SOFTSWITCH MARKET FORECASTS, DOLLARS, 2002-2007  
TABLE 2-46..... 2-83

SOFTSWITCH MARKET IS SUES  
FIGURE 2-47..... 2-85

WORLDWIDE OPEN SYSTEMS COMPUTER HARDWARE TELECOMMUNICATIONS PLATFORM  
MARKET FORECASTS, DOLLARS, 2002-2007  
FIGURE 2-48..... 2-87

WORLDWIDE SONET / SDH MARKET FORECASTS, DOLLARS, 2002-2007  
FIGURE 2-49..... 2-90

DWDM MARKET FORECASTS, DOLLARS, 2002-2007  
TABLE 2-50..... 2-93

TARGET MARKETS FOR DSL GROWTH  
FIGURE 2-51..... 2-94

WORLDWIDE CENTRAL OFFICE DSL DSLAM / BROADBAND MARKET FORECASTS, DOLLARS, 2002-  
2007  
FIGURE 2-52..... 2-97

CENTRAL OFFICE CORE ROUTER MARKET FORECASTS, DOLLARS, 2002-2007  
FIGURE 2-53..... 2-98

WORLDWIDE ENTERPRISE TELECOMMUNICATIONS EQUIPMENT MARKET FORECASTS, DOLLARS,  
2002-2007  
TABLE 2-54..... 2-99

GLOBAL TELECOMMUNICATIONS ENTERPRISE EQUIPMENT SHIPMENT FORECAST BY SEGMENT,  
DOLLARS, 2002-2007  
TABLE 2-55..... 2-101

GLOBAL PBX PRICE FORECASTS, BY LINE SIZE, SYSTEMS, 2002-2007  
FIGURE 2-56..... 2-102

PBX MARKET FORECASTS, 2002-2007  
FIGURE 2-57..... 2-103

WORLDWIDE PBX EQUIPMENT MARKET FORECASTS, TOTAL UNITS, 2002-2007  
FIGURE 2-58..... 2-105

WORLDWIDE IP PBX MARKET FORECASTS, DOLLARS, 2002-2007  
FIGURE 2-59..... 2-106

WORLDWIDE ENTERPRISEFRAME RELAY MARKET FORECASTS, DOLLARS, 2002-2007  
TABLE 2-60..... 2-110

UNIFIED MESSAGING FUNCTIONS

## LIST OF TABLES AND FIGURES (CONTINUED)

Market Forecasts 2002-2007

Market Shares 2001

TABLE 3-1.....	3-4
<b>LUCENT SERVICE INTELLIGENT NETWORK ARCHITECTURE KEY ELEMENTS</b>	
TABLE 3-2.....	3-6
<b>NORTEL NETWORKING SOLUTION POSITIONING</b>	
TABLE 3-3.....	3-13
<b>FEATURES OF SIEMENS SURPASS HIQ</b>	
TABLE 3-4.....	3-14
<b>BENEFITS OF SIEMENS SURPASS HIQ</b>	
TABLE 3-5.....	3-16
<b>FUNCTIONS OF SURPASS HIG</b>	
TABLE 3-6.....	3-19
<b>ALCATEL 5000 SOFTSWITCH KEY FEATURES</b>	
TABLE 3-7.....	3-20
<b>ALCATEL 5000 SOFTSWITCH KEY BENEFITS</b>	
TABLE 3-8.....	3-26
<b>IP TELEPHONY 2.1 SWITCH FUNCTIONS</b>	
TABLE 3-9.....	3-28
<b>ERICSSON IP TELEPHONY 2.1 SYSTEM ARCHITECTURE</b>	
TABLE 3-10.....	3-29
<b>ERICSSON IP TELEPHONY 2.1 SYSTEM ACCESS AGENTS</b>	
TABLE 3-11.....	3-31
<b>KEY BENEFITS OF ERICSSON IPT 2.1</b>	
TABLE 3-12.....	3-32
<b>IPT 2.1 SPECTRUM OF TELEPHONY SERVICES</b>	
TABLE 3-13.....	3-34
<b>IPT 2.1 SMES SOFT PBX FUNCTIONALITY</b>	
TABLE 3-14.....	3-34
<b>IPT 2.1 SMES SOFT PBX FEATURES</b>	
TABLE 3-15.....	3-36
<b>IPT 2.1 SMES SOFT PBX CONFIGURATIONS</b>	
TABLE 3-16.....	3-56
<b>ADC'S AVIDIA® SYSTEM KEY FEATURES</b>	
TABLE 3-17.....	3-60
<b>SERVICES PROVIDED BY THE NEC FA-1201 DLC SYSTEM</b>	
TABLE 3-18.....	3-65
<b>LUCENT LAMBDAUNITE NETWORK FUNCTIONS</b>	
TABLE 3-19.....	3-66
<b>LUCENT LAMBDAROUTER ALL OPTICAL SWITCH FEATURES</b>	
TABLE 3-20.....	3-72
<b>CISCO 12400 INTERNET ROUTER PRODUCTS</b>	
TABLE 3-21.....	3-73
<b>CISCO SERVICE PROVIDER PRODUCTS POSITIONING</b>	
TABLE 3-22.....	3-78
<b>NORTEL INTERACTIVE VOICE RESPONSE APPLICATIONS</b>	
TABLE 3-23.....	3-81
<b>CISCO INTELLIGENT NETWORK SERVICES</b>	
TABLE 3-24.....	3-81
<b>CISCO INTELLIGENT SERVICE ADVANTAGES</b>	
TABLE 3-25.....	3-82
<b>CISCO INTELLIGENT SERVICE APPLICATIONS</b>	
TABLE 3-26.....	3-82
<b>AVAYA VALUE ADDED SERVICES</b>	
TABLE 3-27.....	3-84

<b>AVAYA CUSTOMER RELATIONSHIP MANAGEMENT SOLUTIONS</b>	
TABLE 3-28.....	3-96
<b>SYNCHRONOUS OPTICAL TRANSMISSION SYSTEMS</b>	
TABLE 3-29.....	3-100
<b>NEW OPTICAL COMPONENT PRODUCTS</b>	
TABLE 3-30.....	3-104
<b>ALCATEL DISCRETE MODULES, HIGH SPEED DEVICES</b>	
TABLE 3-31.....	3-106
<b>CORNING OPTICAL AMPLIFIER PRODUCTS</b>	
TABLE 3-32.....	3-112
<b>NOKIA HANDSET MODELS</b>	
TABLE 3-33.....	3-113
<b>NOKIA 9000 HANDSET FEATURES</b>	
TABLE 3-34.....	3-114
<b>NOKIA 8300 HANDSET FEATURES</b>	
TABLE 3-35.....	3-115
<b>NOKIA 6300 HANDSET FEATURES</b>	
TABLE 3-36.....	3-139
<b>CISCO AS5300 VOICE GATEWAY APPLICATIONS</b>	
TABLE 3-37.....	3-140
<b>CISCO AS5300/VOICE GATEWAY FEATURES</b>	
TABLE 3-38.....	3-141
<b>CISCO AS5300 / VOICE GATEWAY KEY FUNCTIONS</b>	
TABLE 3-39.....	3-142
<b>CISCO AS5300 GATEWAY CAPABILITY</b>	
TABLE 3-40.....	3-144
<b>CISCO AS5350 FEATURES</b>	

## LIST OF TABLES AND FIGURES (CONTINUED)

### Market Forecasts 2002-2007      Market Shares 2001

TABLE 4-1.....	4-2
<b>PACKET/CELL TECHNOLOGIES USED FOR VOICE</b>	
TABLE 4-2.....	4-4
<b>FACTORS IMPACTING VOICE QUALITY</b>	
TABLE 4-3.....	4-9
<b>NETWORK HORIZONTAL APIS BETWEEN LAYERS</b>	
TABLE 4-4.....	4-14
<b>CARRIER CLASS VOIP FEATURES</b>	
TABLE 4-5.....	4-15
<b>OPTICAL IP NETWORKING SOLUTIONS</b>	
TABLE 4-6.....	4-17
<b>CISCO IP LEVELS OF SERVICE</b>	
TABLE 4-7.....	4-20
<b>BENEFITS OF MSPP SOLUTIONS</b>	
TABLE 4-8.....	4-25
<b>BENEFITS OF UNIFIED IP/OPTICAL SOLUTIONS</b>	
TABLE 4-9.....	4-26
<b>CONCERNS AND ISSUES SURROUNDING UNIFIED/IP OPTICAL SOLUTIONS</b>	
TABLE 4-10.....	4-29

TOLL QUALITY VOICE OVER PACKET EQUIPMENT VOIP SOLUTIONS FEATURES

TABLE 4-11..... 4-36  
 CULTURAL ISSUES

**LIST OF TABLES AND FIGURES (CONTINUED)**

**Market Forecasts 2002-2007      Market Shares 2001**

TABLE 5-1..... 5-11  
 ALCATEL SOFTSWITCH POSITIONING  
 TABLE 5-2..... 5-12  
 ALCATEL DATA NETWORK INFRASTRUCTURE VOICE COMPONENTS  
 TABLE 5-3..... 5-18  
 AVAYA REORGANIZATION MARKET DEFINITION AND RESPONSE  
 TABLE 5-4..... 5-35  
 ERICSSON STRATEGIC POSITIONING FOR PBX MARKETS  
 TABLE 5-5..... 5-53  
 MOTOROLA INTELLIGENCE EVERYWHERE SOLUTIONS  
  
 TABLE 5-6..... 5-76  
 NOKIA PROVIDER PARTNERSHIPS  
 TABLE 5-7..... 5-83  
 NORTEL NETWORKS ACQUISITIONS  
 TABLE 5-8..... 5-84  
 NORTEL NETWORKS CUSTOMERS  
 TABLE 6-1..... 6-7  
 ADVANCED FIBRE COMMUNICATIONS LEVERAGES ADVANTAGES OF ALL-IP-BASED NETWORK  
 TABLE 6-2..... 6-16  
 CIENA CUSTOMERS  
 TABLE 6-3..... 6-53  
 VOCALTEC PRODUCTS

**ABOUT THE COMPANY**

WinterGreen Research, founded in 1985, provides strategic market assessments in telecommunications, communications equipment, health care, and advanced computer technology. Industry reports focus on opportunities that will expand existing markets or develop major new markets. The reports assess new product and service positioning strategies, new and evolving technologies, and technological impact on products, services, and markets. Market shares are provided. Leading market participants are profiled, and their marketing strategies, acquisitions, and strategic alliances are discussed. The principals of WinterGreen Research have been involved in analysis and forecasting of international business opportunities in telecommunications and advanced computer technology markets for over 30 years.

**ABOUT THE PRINCIPAL AUTHORS**

**Ellen T. Curtiss**, Technical Director, co-founder of WinterGreen Research, conducts strategic and market assessments in technology-based industries. Previously she was a member of the staff of Arthur D. Little, Inc., for 23 years, most recently as Vice President of Arthur D. Little Decision Resources, specializing in strategic planning and market development services. She is a graduate of Boston University and the Program for Management Development at Harvard Graduate School of Business Administration. She is the author of recent studies on worldwide telecommunications markets and the Top Ten Telecommunications market analysis and forecasts.

**Susan Eustis**, President, co-founder of WinterGreen Research, has done research in communications and computer markets and applications. She holds several patents in microcomputing and parallel processing. She is the author of recent studies of the Regional Bell Operating Companies' marketing strategies, Internet equipment, a study of Internet Equipment, Worldwide Telecommunications Equipment, Top Ten Telecommunications, Digital Loop Carrier, Web Hosting, and Application Integration markets. Ms. Eustis is a graduate of Barnard College.

ORDER FORM

Return To: WinterGreen Research, Inc.  
6 Raymond Street  
Lexington, MA 02421 USA

Phone: (781) 863-5078 --- Fax: (781) 863-1235

PLEASE ENTER MY ORDER FOR:

**Worldwide Telecommunications Market  
Strategies and Forecasts, 2002-2007**

**-ALL REPORTS ARE AVAILABLE IN EITHER PRINT OR PDF -**

\_\_\_\_ ENCLOSED IS MY CHECK FOR \$2800

\_\_\_\_ PLEASE BILL MY COMPANY USING P.O. NUMBER \_\_\_\_\_

\_\_\_\_ PLEASE CHARGE MY MASTERCARD/VISA/AMERICAN EXPRESS--CARD NUMBER \_\_\_\_\_ EXP. DATE \_\_\_\_\_

\_\_\_\_ ADDITIONAL COPIES, @ \$375 (EXTRA COPY PRICE IN EFFECT ONLY WITH INITIAL ORDER)

SIGNATURE **X** \_\_\_\_\_ DATE \_\_\_\_\_

NAME \_\_\_\_\_ TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_ DIVISION \_\_\_\_\_

ADDRESS \_\_\_\_\_ CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

TELEPHONE \_\_\_\_\_ FAX \_\_\_\_\_

E-MAIL \_\_\_\_\_

PLEASE NOTE: RESIDENTS OF MASSACHUSETTS AND CONNECTICUT MUST INCLUDE APPROPRIATE SALES TAX  
SUBSCRIBERS OUTSIDE THE UNITED STATES MUST PROVIDE PREPAYMENT IN U.S. FUNDS