

WINTERGREEN RESEARCH, INC.

**PBX Market Opportunities, Strategies,
and Forecasts,
2003 to 2008**

PBX



Picture by Susie Eustis

MOUNTAINS OF OPPORTUNITY

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

www.wintergreenresearch.com

REPORT # SH29821294

333 PAGES

105 TABLES AND FIGURES

2003

\$2,800

CHECK OUT THESE KEY TOPICS

PBX MARKET DEFINITION

PBX Worldwide Market Shares
Worldwide PBX System Forecasts
PBX Competition

Converged PBX Applications
PBX Small And Medium Business Solutions

PBX CONVERGED NETWORK SOLUTIONS

SESSION INITIATION PROTOCOL (SIP)

PBX ENTERPRISE APPLICATIONS

VOICE OVER IP (VoIP)

IP TECHNOLOGY PROVIDES PERSONAL MOBILITY

SWITCHING SHIFT TO PACKETS

NETWORK MANAGEMENT

PBX ENTERPRISE BUSINESS SOLUTIONS

IP PBX

STRUCTURED CABLING SYSTEMS

OPPORTUNITY ABOUND

WinterGreen Research, Inc.

Lexington, Massachusetts

www.wintergreenresearch.com

PBX Market Opportunities, Strategies, and Forecasts, 2003 to 2008

A PBX is primarily a software offering that runs on a server. A very advanced feature set is implemented as software. PBX software has highly evolved voice feature systems that implement over 1,000 different functions for the desktop. No router can duplicate this set of functions.

Primary offerings for this segment include converged voice and data networks. Traditional voice communications systems, customer relationship management offerings and unified communications solutions. A critical component of strategy is a focus on the migration of customer circuit-switched voice communications systems. Traditional voice communications systems are being changed in favor of a converged packet-based network.

PBX Internet protocol systems architecture promises to drive market growth. The convergence of voice and data combined on a single network infrastructure means the elimination of voice networks. Voice over IP revolution in transmission has brought the collapse of telecommunications markets. A major area for PBX market growth is in applications. Value added services are implemented using software applications. Increasingly, revenue growth is moving from the core switch into other areas such as call centers, unified messaging systems, and computer telephony integration or CTI.

Growth in the converged PBX industry is occurring in two major areas related to overall solutions—customer premise switching platforms and applications. The lowering of federal regulatory barriers to competition across traditionally distinct sectors of the telecommunications industry has opened new markets for and increased competitive pressures on PBX telecommunications companies.

The industry growth rate for PBX systems is tracking general economic trends. Economic downturns are accompanied by decreased demand for PBX equipment. This is accompanied by uncertainty about the particular architecture evolution. Growth, when it returns will be driven by business expansion.

The PBX market at \$13.2 billion in 2002 is forecast to reach \$17.9 billion by 2008 during the forecast period. Integration of the voice communication network with a range of data and video applications promises improved productivity of the enterprise.

Companies Profiled

Market Leaders

**Siemens
Nortel Networks
Avaya
Alcatel
Toshiba Corporation
NEC Corporation
Mitel Networks
Royal Philips Electronics
Ericsson**

Other Market Participants

**3Com
Cisco
EADS
Hewlett-Packard
IBM Corporation
Inter-Tel
Matsushita Electric/Panasonic**

PBX Market Strategies and Forecasts, 2003-2008

REPORT METHODOLOGY

THIS IS THE HUNDRED AND THIRTIETH 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. INSTALLED BASE ANALYSIS AND UNIT ANALYSIS IS BASED ON INTERVIEWS AND AN INFORMATION SEARCH. MARKET SHARE ANALYSIS INCLUDES CONVERSATIONS WITH KEY CUSTOMERS OF PRODUCTS, INDUSTRY SEGMENT LEADERS, MARKETING DIRECTORS, DISTRIBUTORS, LEADING MARKET PARTICIPANTS, OPINION LEADERS, 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 INDUSTRY LEADERS IN THE MARKET SEGMENT.

YOU MUST HAVE THIS STUDY

PBX Market Opportunities, Strategies, and Forecasts, 2003 to 2008

Table of Contents

PBX EXECUTIVE SUMMARY

PBX MARKET EXECUTIVE SUMMARY	ES-1
Shift to PBX As A Software Offering	ES-1
PBX Worldwide Market Shares	ES-4
Worldwide PBX System Forecasts	ES-6

PBX MARKET DESCRIPTION

1. PBX DESCRIPTION AND MARKET DYNAMICS	1-1
1.1 PBX Market Definition	1-1
1.1.1 Convergence of Voice and Data	1-2
1.1.2 IP Convergence	1-3
1.1.3 Converged IP Services	1-4
1.1.4 Impact Of Technology On Converged IP Services	1-6
1.2 Convergence Lowers Cost Of Remote Working	1-8
1.3 Converged PBX Applications	1-13
1.3.1 PBX Applications Market Impact	1-14
1.4 Voice Over IP (VoIP)	1-18
1.4.1 Interoperability	1-19
1.4.2 Product Categories	1-20
1.5 Internet Opportunities	1-21
1.6 Data And Mixed Media Communications Systems	1-21
1.7 Call Centers	1-25
1.8 Video Conferencing	1-25
1.9 IP Technology Provides Personal Mobility	1-27
1.9.1 Internet Impact	1-27
1.10 Market Directions	1-30
1.11 Principal Factors Of Competition	1-35
1.12 IP PBX	1-37
1.12.1 IP-PBX Design Components	1-37

PBX MARKET FORECASTS

2. PBX MARKET SHARES AND MARKET FORECASTS	2-1
2.1 PBX Competition	2-1
2.2 PBX Worldwide and Regional Market Shares	2-3
2.2.1 U.S. PBX Market Shares	2-5
2.2.2 Canadian PBX Market Shares	2-7
2.2.3 European PBX Market Shares	2-9
2.2.4 Asia / Pacific And Japanese PBX Market Shares	2-11

2.2.5	PBX Regional Market Share Analysis	2-13
2.3	PBX Market Forecasts	2-18
2.3.1	Worldwide PBX System Forecasts	2-18
2.3.2	U.S. PBX Forecasts	2-20
2.3.3	European PBX Forecasts	2-22
2.3.4	Asia / Pacific / Japanese PBX Forecasts	2-24
2.3.5	Worldwide PBX System Forecasts By Region	2-26
2.3.6	PBX Forecasts By Line Size	2-27
2.3.7	PBX Market Analysis By Line Size	2-28
2.3.8	Number Of PBX Systems Shipped By Line Size	2-32
2.4	Local Area Networks (LANs)	2-35
2.5	PBX Sever / Softswitch / Router Segments	2-42
2.5.1	Cabling And Handsets	2-48
2.6	PBX Enterprise Applications	2-48
2.6.1	Open Systems	2-50
2.6.2	Global Market Opportunities Via The Internet	2-50
2.6.3	CTI	2-52
2.6.4	IP PBXs	2-54
2.6.5	Converged Systems and Applications	2-55
2.6.6	IVR Systems	2-57
2.6.7	Customer Relationship Management	2-58
2.6.8	Unified Communication	2-59

PBX PRODUCTS

3. PBX PRODUCT DESCRIPTION	3-1
3.1 PBX Converged Network Solutions	3-1
3.1.1 Siemens HiPath Architecture	3-3
3.1.2 Siemens HiPath Product Suite and Customer Care Centers	3-5
3.1.3 Avaya Next Generation Enterprise Class Internet Protocol Solutions	3-9
3.1.4 Avaya Portfolio Supports Converged Network	3-11
3.1.5 Nortel Enterprise Networks	3-13
3.1.6 Nortel Circuit And Packet Voice Solutions	3-13
3.1.7 Cisco IP Communications System	3-14
3.1.8 NEC PBX Positioning	3-15
3.1.9 NEC Call Center Environment	3-16
3.1.10 Philips SOPHO iS3000 series	3-16
3.2 PBX Enterprise Business Solutions	3-17
3.2.1 Siemens HiPath	3-18
3.2.2 HiPath Siemens Enterprise Convergence Architecture	3-18
3.2.3 HiPath 4000	3-22
3.2.4 Siemens Real Time IP System	3-22
3.2.5 HiPath 4000 Features	3-25
3.2.6 HiPath User Access	3-26
3.2.7 HiPath HG 3530	3-27
3.2.8 HiPath RG 2500	3-28
3.2.9 Siemens HiPath 5000 System Family Enterprise Softswitch	3-28
3.2.10 Avaya Enterprise Business IP Enabled Solutions	3-28
3.2.11 Nortel Enterprise Succession Solutions	3-34
3.2.12 Nortel Meridian SL-100	3-35
3.2.13 Nortel Customer Contact And Voice Portal Solutions	3-36
3.2.14 Nortel Data Networking And Security Solutions	3-37

3.2.15	Nortel Web Products	3-38
3.2.16	Alcatel OmniPCX Enterprise	3-39
3.2.17	Alcatel OmniPCX Enterprise Interactive Communication	3-43
3.2.18	Alcatel OmniMessage 4645	3-46
3.2.19	Alcatel Intelligent Call Routing	3-46
3.2.20	Alcatel's OmniPCX Soft Phone Technology	3-48
3.2.21	Alcatel OmniPCX Solution	3-49
3.2.22	Cisco Enterprise IP Telephony Solution	3-49
3.2.23	Cisco Call Manager Software	3-50
3.2.24	Cisco High Availability Telephony	3-51
3.2.25	Cisco IOS Survivable Remote Site Telephony	3-51
3.2.26	Cisco Enterprise Voice	3-52
3.2.27	Cisco Enterprise IP Telephony Solution Components	3-53
3.2.28	Cisco Voice Networking	3-54
3.2.29	Cisco Catalyst Switches	3-55
3.2.30	Cisco Voice Gateways	3-56
3.2.31	NEC NEAX 2400 IPX	3-56
3.2.32	NEC NEAX IPXDM	3-60
3.2.33	Mitel IP-PBX	3-64
3.2.34	Mitel IP-Enabled Scenario	3-66
3.2.35	Mitel Networks 3300 ICP	3-68
3.2.36	Mitel 3300 ICP Controller	3-69
3.2.37	EADS Telecom PointSpan™M6500	3-74
3.2.38	PointSpan™M6501 IP-PBX	3-77
3.2.39	PointSpan™Media Gateway	3-78
3.2.40	Philips SOPHO	3-78
3.2.41	Philips SOPHO iS3000	3-78
3.3	PBX Small And Medium Business Solutions	3-80
3.3.1	Siemens HiPath 3000 System Family	3-80
3.3.2	Siemens HiPath 5000 System Family	3-82
3.3.3	Avaya Small and Medium Business Key And Hybrid IP Enabled Solutions	3-83
3.3.4	Nortel Meridian	3-84
3.3.5	Cisco SMB PBX Strategy	3-84
3.3.6	NEC Aspire	3-85
3.3.7	NEC Aspire Reduction In The Cost Of Business	3-85
3.3.8	NEC Electra Elite IPK	3-89
3.3.9	Mitel Networks 3340 Branch Office Solution	3-92
3.3.10	Philips SOPHO 2000 IPS	3-92
3.3.11	Panasonic KX-Series	3-93
3.3.12	Samsung NX-Series	3-93
3.3.13	Toshiba Strata CTX100 and CTX670	3-94
3.3.14	Toshiba Strata IP-Enabling Existing Systems	3-94
3.3.15	Artisoft TeleVantage	3-96
3.3.16	Zultys Technologies	3-98
3.4	Network Management	3-99
3.4.1	Cisco Network-Management Software Functions	3-99
3.4.2	Siemens Enterprise Systems Management	3-100
3.4.3	Mitel Network Services Units	3-101
3.4.4	Mitel PBX Management Systems	3-103
3.5	Structured Cabling Systems	3-103
3.5.1	Avaya Structured Cabling Systems	3-104

PBX TECHNOLOGY

4. CONVERGED PBX VENDOR STRATEGY AND TECHNOLOGY	4-1
4.1 Cisco IP Telephony Strategy	4-1
4.2 Siemens HiPath Strategic Objectives	4-2
4.2.1 Siemens eCRM Solutions Strategy	4-3
4.2.2 Siemens HiPath Trading	4-5
4.2.3 Siemens HiPath Hotel	4-5
4.2.4 Siemens ATM Networking	4-6
4.2.5 Siemens Call Detail Records	4-7
4.2.6 Siemens Skyport	4-7
4.3 Nortel PBX Product Development	4-10
4.4 Cisco Architecture For Voice, Video, And Integrated Data (AVVID)	4-12
4.5 Alcatel Support for Emerging Technologies	4-13
4.6 NEC	4-15
4.6.1 NEC Aspire Peer-To-Peer IP Switching	4-15
4.6.2 NEC Fusion Call Control Signaling	4-16
4.6.3 NEC Enterprise Communications Strategy	4-17
4.7 Philips SOPHO iS3000 Series Central Processor Modules	4-19
4.7.1 Philips Switching Network Module	4-20
4.7.2 Philips Peripheral Module	4-22
4.7.3 Toshiba IP Vision	4-23
4.8 Alcatel PBX Protocol Positioning	4-24
4.8.1 Alcatel Voice Protocols Integration	4-25
4.9 Voice Over IP Network	4-26
4.9.1 Converged IP-PBX Migration Scenario	4-27
4.9.2 Value of IP Technology	4-27
4.9.3 Different Forms of IP Technology	4-28
4.9.4 Nortel Succession Voice Over IP Network	4-29
4.10 Session Initiation Protocol (SIP)	4-29
4.10.1 Egress Filtering	4-30
4.10.2 SIP Vendors	4-31
4.11 PBX System Features And Move To Open Systems	4-34
4.12 PBX Converged Voice And Data Technology Protocol Proliferation	4-35
4.12.1 ITU-T's H.323	4-36
4.12.2 MGCP	4-36
4.12.3 H.248/Megaco	4-38
4.13 IP Traffic Volumes	4-40
4.14 Softswitch Definition	4-41
4.14.1 Soft Switch Opportunity	4-41
4.14.2 Soft Switch Positioning	4-43
4.15 Fault-Tolerant Server As Core Platform For Soft Switch Technology	4-44
4.16 Voice Over IP	4-45
4.17 Switching Shift To Packets	4-46
4.17.1 Simplified Message Desk Interface	4-50

PBX COMPANY PROFILES

5. CONVERGED IP AND TRADITIONAL PBX COMPANY PROFILES	5-1
5.1 3Com	5-1
5.1.1 3 Com Enterprise Networking	5-2
5.2 Alcatel	5-4

WINTERGREEN RESEARCH, INC.

5.2.1	Alcatel First Quarter 2003 Revenue	5-5
5.2.2	Alcatel Fixed Communications	5-6
5.2.3	Alcatel Mobile Communications	5-7
5.2.4	Alcatel Enterprise and Space Communications	5-7
5.2.5	Alcatel Strategic Alliances	5-11
5.2.6	Alcatel OmniFamily	5-12
5.2.7	Alcatel Application Partner Program	5-13
5.3	Avaya	5-13
5.3.1	Avaya Operating Segments	5-14
5.3.2	Avaya Converged Systems And Applications Segment	5-15
5.3.3	Avaya Small And Medium Business Solutions Segment	5-15
5.3.4	Avaya Revenue	5-17
5.3.5	Avaya Converged Systems and Applications	5-19
5.3.6	Avaya Small and Medium Business Solutions	5-20
5.3.7	Avaya Services	5-20
5.3.8	Avaya Connectivity Solutions	5-21
5.3.9	Avaya Geographic Information	5-22
5.3.10	Avaya Enterprise Connect Solutions	5-22
5.4	Cisco	5-23
5.4.1	Cisco Systems IP Communications Customers	5-24
5.4.2	Cisco IP Communications System Target Industries	5-26
5.4.3	Cisco Systems Second Quarter 2003 Revenue	5-26
5.4.4	Cisco Strategic Partners	5-26
5.4.5	Cisco Acquisitions	5-27
5.5	EADS	5-28
5.5.1	EADS Telecom	5-29
5.6	Ericsson	5-30
5.6.1	Ericsson Revenue	5-31
5.7	Hewlett Packard	5-31
5.7.1	HP Services	5-32
5.8	IBM Corporation	5-32
5.8.1	IBM Revenue	5-34
5.8.2	IBM Manufacturing Outsourcing	5-39
5.8.3	IBM On-Demand Supply Chain	5-40
5.8.4	IBM Acquires Holosofx	5-41
5.8.5	IBM / PricewaterhouseCoopers Consulting	5-42
5.8.6	IBM Acquires Rational Software	5-42
5.8.7	IBM Global Services	5-45
5.9	Inter-Tel	5-45
5.9.1	Inter-Tel First Quarter 2003 Revenue	5-47
5.10	Matsushita Electric / Panasonic	5-48
5.10.1	Panasonic Digital PBX System	5-48
5.10.2	Panasonic Digital PBX Non-Blocking Architecture	5-49
5.10.3	Panasonic Digital PBX Automatic Route Selection	5-49
5.10.4	Panasonic Digital PBX Station Message Detail Recording	5-50
5.10.5	Panasonic Digital PBX Phantom Extensions	5-50
5.10.6	Panasonic Digital PBX Uniform Call Distribution	5-50
5.10.7	Panasonic PBX Positioning	5-51
5.11	Mitel Networks	5-52
5.11.1	Mitel Networks Corporation	5-52
5.11.2	Private Company Status	5-53
5.11.3	Mitel Networks Revenue	5-53

WINTERGREEN RESEARCH, INC.

5.11.4	Mitel Networks and SIP	5-54
5.12	NEC Corporation	5-54
5.12.1	NEC PBX	5-55
5.13	Nortel Networks	5-55
5.13.1	Nortel Organization	5-56
5.13.2	Nortel Enterprise Networks Revenue	5-59
5.14	Royal Philips Electronics	5-63
5.15	Siemens	5-67
5.16	Toshiba Corporation	5-70
5.16.1	Toshiba Revenue	5-70
5.16.2	Toshiba Telecommunication Systems Division TSD	5-72

List of Tables and Figures**PBX EXECUTIVE SUMMARY**

Table ES-1	ES-3
Principal Global Factors Of PBX Competition	
Figure ES-2	ES-4
Worldwide PBX Market Shares, 2002	
Table ES-3	ES-5
Traditional and Packet Based PBX Market Shares, Worldwide, 2002	
Figure ES-4	ES-7
PBX Market Forecasts, 2003-2008	

PBX MARKET DESCRIPTION

Table 1-1	1-7
Impact Of Technology On Converged IP Services	
Table 1-2	1-9
Benefits Of Migration To A Converged Infrastructure	
Table 1-3	1-12
Reasons To Build Converged Network	
Table 1-4	1-15
Converged Voice/Data PBX Applications	
Table 1-5	1-22
Network Configurations That Intersect PBX Systems	
Table 1-6	1-28
Converged PBX Market Growth Factors	
Table 1-7	1-29
Converged PBX Market Change Factors	
Table 1-8	1-31
Growth Factors In The Converged PBX Industry	
Table 1-9	1-32
Converged PBX Sales Strategy	
Table 1-10	1-33
Small And Medium PBX Business Sectors	
Table 1-11	1-34
Key Converged PBX Network Functions	
Table 1-12	1-36
Converged PBX Market Positions	

PBX MARKET FORECASTS

Table 2-1	2-2
Principal Global Factors Of PBX Competition	
Figure 2-2	2-3
Worldwide PBX Market Shares, 2002	
Table 2-3	2-4
Traditional and Packet Based PBX Market Shares, Worldwide, 2002	
Figure 2-4	2-6
PBX Market Shares, US, 2002	

Table 2-5	2-7
Traditional and Packet Based PBX Market Shares, US, 2002	
Figure 2-6	2-8
PBX Market Shares, Canada, 2002	
Table 2-7	2-9
Traditional and Packet Based PBX Market Shares, Canada, 2002	
Figure 2-8	2-10
PBX Market Shares, Europe, 2002	
Table 2-9	2-11
Traditional and Packet Based PBX Market Shares, Europe, 2002	
Figure 2-10	2-12
PBX Market Shares, Asia Pacific, Japan, Oceania, 2002	
Table 2-11	2-13
Traditional and Packet Based PBX Market Shares, Japan and Asia Pacific, 2002	
Table 2-12	2-14
PBX Regional Market Analysis, Worldwide, Percent, 2002	
Table 2-13	2-15
Traditional and Packet Based PBX Regional Market Analysis, Worldwide, Dollars, 2002	
Figure 2-14	2-16
PBX Market Segment US, Europe, Asia Pacific and Japan, 2002	
Figure 2-15	2-17
PBX Market Segment US, Europe, Asia Pacific and Japan, 2008	
Figure 2-16	2-19
PBX Market Forecasts, 2003-2008	
Table 2-17	2-20
Worldwide Traditional and Packet Based PBX Equipment Market Forecasts, 2003-2008	
Figure 2-18	2-21
Traditional and Packet Based PBX Market Forecasts, US, 2003-2008	
Table 2-19	2-22
Traditional and Packet Based PBX Market Forecasts, US, 2003-2008	
Figure 2-20	2-23
Traditional and Packet Based PBX Market Forecasts, Europe, 2003-2008	
Table 2-21	2-24
Traditional and Packet Based PBX Market Forecasts, Europe, 2003-2008	
Table 2-22	2-25
Traditional and Packet Based PBX Market Forecasts, Asia Pacific and Japan, 2003-2008	
Table 2-23	2-26
Traditional and Packet Based PBX Market Forecasts, Asia Pacific and Japan, 2003-2008	
Table 2-24	2-26
Traditional and Packet Based PBX Equipment Market Forecasts, Dollars, By Region, 2003-2008	
Table 2-25	2-27
Global PBX Market Installed Based, By Line Size, Percent 1997-2002	
Table 2-26	2-28
Global Traditional and Packet Based PBX Market Forecasts, By Line Size, Percent 2002-2008	
Table 2-27	2-29
Global Traditional and Packet Based PBX Market Size, By Line Size, Dollars, 1997-2002	
Table 2-28	2-30
Global Traditional and Packet Based PBX Market Size, By Line Size, Dollars, 2002-2008	
Table 2-29	2-31
Global Traditional and Packet Based PBX Market Size, By Line Size, Port Prices, 2002-2008	
Table 2-30	2-31
Global Traditional and Packet Based PBX Market Size, By Line Size, System Prices, 2002-2008	

Figure 2-31	2-32
Worldwide PBX Equipment Market Forecasts, Total Port Units, 2003-2008	
Figure 2-32	2-33
Worldwide PBX Equipment Market Forecasts, Total System Units, 2003-2008	
Table 2-33	2-34
Global PBX Voice Communication Softswitch, Router, By Line Size, Ports and System Units, 2002-2008	
Figure 2-34	2-36
Worldwide PCs On LANs Market Forecasts, 2003-2008	
Figure 2-35	2-37
US PCs On LANs, Market Forecasts, 2003-2008	
Table 2-36	2-38
PCs On LANs, Shipments, 2002-2008	
Table 2-37	2-39
Worldwide LAN Ports, Installed Based, Market Forecast, 2002-2008	
Table 2-38	2-39
US LAN Ports, Installed Based, Market Forecast, 2002-2008	
Figure 2-39	2-40
Worldwide Number Of LANs, Market Forecasts, 2003-2008	
Figure 2-40	2-41
US Number Of LANs, Market Forecasts, 2003-2008	
Figure 2-41	2-43
PBX Voice Server, Router, and Softswitch Market Segments, 2002	
Figure 2-42	2-44
PBX Voice Server, Router, and Softswitch Market Segments, 2008	
Table 2-43	2-45
Global PBX Voice Communication Softswitch, Router, Server, By Line Size, Systems, Dollars, 2002-2008	
Table 2-44	2-46
Global PBX Voice Communication Softswitch, Router, Server, By Line Size Systems, Price Per Port, 2002-2008	
Table 2-45	2-49
PBX Applications	
Table 2-46	2-51
Key Business Benefits Of Multimedia Communications	
Table 2-47	2-52
Aspects Of CTI Systems	
Table 2-48	2-54
Selected Vendors Of IP PBXs	
Table 2-49	2-55
IP Voice Factors Impacting LAN Markets	
Table 2-50	2-61
Unified Communication Features	

PBX PRODUCT DESCRIPTION

Table 3-1	3-4
Siemens HiPath Applications	
Table 3-2	3-6
Siemens HiPath Product Suite	
Table 3-3	3-10
Avaya Next Generation Enterprise Internet Protocol Solutions	

Table 3-4	3-14
Nortel Circuit And Packet Voice Solutions	
Table 3-5	3-20
HiPath 4000 User Configurations	
Table 3-6	3-23
Siemens HiPath Applications Positioning	
Table 3-7	3-24
Siemens HiPath Applications Benefits	
Table 3-8	3-26
HiPath User Access Enhanced Telephone Features	
Table 3-9	3-30
Avaya Enterprise Definity Server Positioning	
Table 3-10	3-33
Avaya Definity Communications Servers	
Table 3-11	3-37
Nortel Packet Data Networking And Security Solutions	
Table 3-12	3-40
Alcatel OmniPCX Enterprise Positioning	
Table 3-13	3-42
Alcatel OmniPCX Enterprise Architectural Flexibility Functions	
Table 3-14	3-47
Alcatel Agile Workplace Positioning	
Table 3-15	3-54
Cisco Voice Networking Infrastructure Components	
Table 3-16	3-57
NEC NEAX 2400 Functions	
Table 3-17	3-58
NEC NEAX 2400 Features	
Table 3-18	3-61
NEC IPX (Internet Protocol Exchange-Distributed Model)	
Table 3-19	3-63
NEC NEAX IPX DM Standards-Based Architecture	
Table 3-20	3-70
Mitel 3300 ICP Architecture Design	
Table 3-21	3-71
Mitel 3300 ICP Feature Capabilities	
Table 3-22	3-73
Mitel Networks 3300 ICP Functions	
Table 3-23	3-74
EADS Telecom PointSpan™6880 Phone Models	
Table 3-24	3-76
EADS Telecom PointSpan™6880 Features	
Table 3-25	3-79
Philips SOPHO iS3000 Series Ports	
Table 3-26	3-81
HiPath Key Set User Access Features	
Table 3-27	3-86
NEC Aspire Reduction In The Cost Of Business	
Table 3-28	3-90
NEC Electra Elite IPK System Telephone Functions	
Table 3-29	3-102
Mitel Networks Systems Functions	

PBX TECHNOLOGY

Table 4-1	4-6
Siemens HiPath Hotel Features	
Table 4-2	4-9
Siemens Industries and Market Segments Targeted with PBX Systems	
Table 4-3	4-16
Peer-to-Peer IP Connectivity Benefits	
Table 4-4	4-17
NEC Enterprise Communications Strategy	
Table 4-5	4-23
Philips Peripheral Module Functions	
Table 4-6	4-24
Alcatel Universal Connectivity	
Table 4-7	4-25
Alcatel Voice Protocols Integration	
Table 4-8	4-31
SIP Vendors	
Table 4-9	4-37
Vendors Supporting MGCP	
Table 4-10	4-39
Vendors That Support H.248/Megaco	
Table 4-11	4-42
Soft Switch Market Advantages	
Table 4-12	4-47
IP-Based Interprocess Communication Modules	
Table 4-13	4-49
Attributes of Soft Switches	

PBX COMPANY PROFILES

Table 5-1	5-33
IBM Strengths and Challenges	

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, THE TOP TEN INTERNET EQUIPMENT COMPANIES, THE TOP TEN CONTRACT MANUFACTURING COMPANIES, 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 HAS THE ORIGINAL PATENTS IN ELECTRONIC VOTING MACHINES. SHE HAS NEW PATENT APPLICATIONS IN FORMAT VARYING, MULTIPROCESSING, AND ELECTRONIC VOTING. SHE IS THE AUTHOR OF RECENT STUDIES OF THE REGIONAL BELL OPERATING COMPANIES' MARKETING STRATEGIES, INTERNET EQUIPMENT, BIOMETRICS, A STUDY OF INTERNET EQUIPMENT, WORLDWIDE TELECOMMUNICATIONS EQUIPMENT, TOP TEN TELECOMMUNICATIONS, DIGITAL LOOP CARRIER, WEB HOSTING, WEB SERVICES, AND APPLICATION INTEGRATION MARKETS. MS. EUSTIS IS A GRADUATE OF BARNARD COLLEGE.

WINTERGREEN RESEARCH, INC.

ORDER FORM

Return To: WinterGreen Research, Inc.
6 Raymond Street
Lexington, MA 02421 USA
Phone: (781) 863-5078 --- Fax: (781) 863-1235 or (781) 860-0897

PLEASE ENTER MY ORDER FOR:

**PBX Market Opportunities, Strategies, and
Forecasts
2003-2008**

-ALL REPORTS ARE AVAILABLE IN EITHER PRINT OR PDF-

PDF

PRINT

___ ENCLOSED IS MY CHECK FOR \$2,800 FOR SINGLE COPY, \$3,800 FOR WEB SITE POSTING

___ PLEASE BILL MY COMPANY USING P.O. NUMBER _____

___ PLEASE CHARGE MY MASTERCARD/VISA/AMERICAN EXPRESS___

CARD NUMBER _____ EXP. DATE _____

If charging to a Credit card you may e-mail the order form, but not the card information

Fax or Call with credit card information - Do not send card number as e-mail - You may send the order as e-mail

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

NAME _____ TITLE _____

SIGNATURE _____

COMPANY _____ DIVISION _____

-

ADDRESS _____

CITY _____ STATE /

ZIP _____

TELEPHONE _____

FAX _____

EMAIL _____

PLEASE NOTE: RESIDENTS OF MASSACHUSETTS AND CONNECTICUT MUST INCLUDE APPROPRIATE SALES TAX

SUBSCRIBERS OUTSIDE THE UNITED STATES MUST PROVIDE PREPAYMENT IN U.S. FUNDS

REPORT # SH29821294

333 PAGES

105 TABLES AND FIGURES

2003

\$2,800