

WINTERGREEN RESEARCH, INC.

**PBX Market Opportunities, Strategies, and Forecasts,
2004 to 2009**

PBX



Picture by Susie Eustis

MOUNTAINS OF OPPORTUNITY

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

www.wintergreenresearch.com

REPORT # SH29821354

385 PAGES

219 TABLES AND FIGURES

2004

\$2,800

CHECK OUT THESE KEY TOPICS

PBX MARKET SHARES
DRIVING FORCES FOR CHANGE IN THE PBX INDUSTRY
NEW GENERATIONS OF PBXS
PBX Market Definitions

Converged PBX Applications
IP PBX
GLOBAL MARKET OPPORTUNITIES VIA THE INTERNET
VOICE OVER IP NETWORK
SESSION INITIATION PROTOCOL (SIP)
SOFTSWITCH DEFINITION
SWITCHING SHIFT TO PACKETS
IP TRAFFIC VOLUMES
MARKET DIRECTIONS
IP TECHNOLOGY PROVIDES PERSONAL MOBILITY
VIDEO CONFERENCING
CALL CENTERS

OPPORTUNITY ABOUND

WinterGreen Research, Inc.
Lexington, Massachusetts
www.wintergreenresearch.com

PBX Market Opportunities, Strategies, and Forecasts, 2004 to 2009

The new generation of PBXs is moving traditional PBX systems to support packetized voice calls and to run packetized data through the PBX. The IP packet transmission of voice is configured as an end-to-end system.

The new generation of PBXs offers customer service automation (CRM), computer telephone integration (CTI), video conferencing, data streaming, content delivery network support, storage area network support, and voice over IP (VoIP).

IP enabled PBXs answer the need for value added services point by point. New systems are built on open code. These boxes eliminate high equipment, maintenance, and upgrade fees associated with PBX switches. Telecom administrators seek to save on maintenance fees. \$200,000 is the typical maintenance fee savings in a mid size company with 1,000 employees.

Alcatel leads the total PBX worldwide market shares in 2003 with 26% market share. Siemens with 21%, Nortel with 15%, and Avaya with 15% are strong market participants.

The global PBX market is expected to reach over 30 billion dollars in the year 2009. The market grows at a steady positive rate over the years, reaching 25% by 2009. The growth is brought by replacement of digital proprietary voice systems that do not handle the Internet with systems that do manage the Internet.

Change is a driving force in the market as the number of customers and the complexity of the networks they demand increases.

Enterprise networks are becoming increasingly multifunctional, supporting simultaneous wired or wireless access to combined voice, data and video communications services, thus reducing the operating costs associated with separate networks.

Companies Profiled

Market Leaders

Alcatel
Siemens
Nortel
Avaya

Market Participants

Ericsson
NEC
Philips

Mitel
Panasonic

PBX Services Strategies and Forecasts, 2004-2009

REPORT METHODOLOGY

THIS IS THE *TWO-HUNDRED AND TWENTY-SECOND* REPORT IN A SERIES OF MARKET RESEARCH REPORTS THAT PROVIDE FORECASTS IN COMMUNICATIONS, TELECOMMUNICATIONS, THE INTERNET, COMPUTER, SOFTWARE, TELEPHONE EQUIPMENT, AND ENERGY. 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, 2004 to 2009

Table of Contents

PBX EXECUTIVE SUMMARY

PBX EXECUTIVE SUMMARY	ES-1
New Generation Of PBXs	ES-1
PBX Market Shares	ES-1
Siemens	ES-2
Nortel	ES-3
Avaya	ES-3
Alcatel	ES-4
Computer Industry Servers	ES-4
The Market For PBX Systems, Softswitches, And Voice Servers	ES-5
Driving Forces For Change In The PBX Industry	ES-6

PBX DESCRIPTION AND MARKET DYNAMICS

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	1-13
1.1.3 Converged IP Services	1-14
1.1.4 Impact Of Technology On Converged IP Services	1-16
1.2 Convergence Lowers Cost Of Remote Working	1-18
1.3 Converged PBX Applications	1-23
1.3.1 PBX Applications Market Impact	1-24
1.4 Voice Over IP (VoIP)	1-28
1.4.1 Interoperability	1-29
1.4.2 Product Categories	1-30
1.5 Internet Opportunities	1-31
1.6 Data And Mixed Media Communications Systems	1-31
1.7 Call Centers	1-35
1.8 Video Conferencing	1-35
1.9 IP Technology Provides Personal Mobility	1-37
1.9.1 Internet Impact	1-37
1.10 Market Directions	1-40
1.11 Principal Factors Of Competition	1-45
1.12 IP PBX	1-47
1.12.1 IP-PBX Design Components	1-47

PBX MARKET FORECASTS

2. PBX MARKET FORECASTS	2-1
2.1 Converged Voice / Data PBX Applications	2-1
2.2 PBX Worldwide Market Shares	2-6
2.2.1 PBX Cabling and Telephone Sets Worldwide Market Shares	2-9

2.3	Global PBX Forecasts	2-11
2.4	Worldwide PBX Equipment Forecasts	2-13
2.5	Global PBX Ports Forecasts	2-14
2.6	Global PBX Price Forecasts	2-16
2.6.1	Port Price Forecasts	2-18
2.7	Systems Over 1000 Lines	2-20
2.7.1	Ports	2-22
2.7.2	System Price Forecasts	2-24
2.8	Systems Of 401-1000 Lines	2-28
2.8.1	Ports	2-30
2.8.2	Price Forecasts	2-32
2.9	Systems Of 100-400 Lines	2-36
2.9.1	Ports	2-38
2.9.2	Price Forecasts	2-40
2.10	Systems Under 100 Lines	2-44
2.10.1	Ports	2-46
2.10.2	Price Forecasts	2-48
2.10.3	PBX Forecasts By Line Size	2-52
2.11	PBX Market Analysis By Line Size	2-53
2.12	PBX Regional Analysis	2-53
2.13	Summary Forecasts PBXs, Voice Routers, And Softswitches	2-64
2.14	PBX systems	2-65
2.15	cti	2-65
2.16	IP PBXs	2-68
2.17	Global Market Opportunities Via The Internet	2-71

PBX PRODUCT DESCRIPTION

3. PBX PRODUCT DESCRIPTION	3-1
3.1 Alcatel	3-1
3.1.1 Alcatel First Reflexes TM	3-1
3.1.2 Alcatel Premium Reflexes TM	3-2
3.1.3 Alcatel OmniPCX Enterprise	3-3
3.1.4 OmniPCX Enterprise Summary Specifications	3-5
3.2 Siemens	3-16
3.2.1 Hicom 300 H	3-16
3.2.2 HiPath 4000	3-18
3.2.3 HiPath 5000	3-20
3.3 Avaya	3-22
3.3.1 Avaya TM DEFINITY [®] Servers	3-22
3.3.2 Avaya DEFINITY One TM Communications Server	3-23
3.3.3 Avaya MultiVantage Software with an Avaya DEFINITY [®] Server CSI and Avaya TM CMC1 Media Gateway	3-23
3.3.4 Avaya MultiVantage Software with an Avaya DEFINITY [®] Server SI and Avaya TM SCC1 Media Gateway or an Avaya TM MCC1 Media Gateway	3-23
3.3.5 Avaya MultiVantage Software with an Avaya DEFINITY [®] Server R and Avaya SCC1 Media Gateway or an Avaya MCC1 Media Gateway	3-24
3.4 Nortel	3-24
3.4.1 Meridian 1 Option 81C	3-24
3.4.2 Meridian SL-100	3-25
3.4.3 Succession 3.0	3-26
3.5 NEC	3-29

WINTERGREEN RESEARCH, INC.

3.5.1	NEAX 2000 IPS	3-29
3.5.2	NEAX@2400 Internet Protocol eXchange (IPX)	3-30
3.6	Ericsson	3-32
3.6.1	MD110 Communication System	3-32
3.6.2	MD110 Convergence Communication System	3-32
3.7	Mitel	3-33
3.7.1	Mitel Networks SX-2000	3-33
3.8	Alcatel	3-35
3.8.1	Alcatel OmniPCX Office	3-35
3.9	Siemens	3-38
3.9.1	HiPath 3000	3-38
3.10	Mitel	3-40
3.10.1	Mitel Networks 3300 Integrated Communications Platform	3-40
3.11	Alcatel	3-42
3.11.1	Alcatel Small-Office Business Solution	3-42
3.11.2	Alcatel First Reflexes™	3-43
3.11.3	Alcatel Easy Reflexes™	3-44
3.11.4	Technologies : IP Telephony	3-45
3.11.5	The Alcatel OmniPCX 4400	3-45
3.11.6	Alcatel 7390 LMDs Network Termination	3-45
3.11.7	Wide variety of applications	3-46
3.11.8	Switched voice services	3-47
3.11.9	Bursty data services	3-48
3.11.10	High performance Air interface	3-49
3.11.11	High reliability	3-50
3.11.12	Full Software Control	3-50
3.11.13	Easy installation	3-51
3.12	Siemens	3-51
3.12.1	PBX for Small Office/Home Office	3-51
3.12.2	HiPath 1220	3-53
3.12.3	HiPath 500	3-55
3.13	Avaya	3-56
3.13.1	Enterprise Communications Group Segment	3-56
3.13.2	Small and Medium Business Solutions Segments	3-57
3.13.3	Communications Applications	3-59
3.13.4	Contact Centers	3-60
3.13.5	Unified Communication	3-61
3.13.6	Communications Appliances	3-63
3.13.7	Small and Medium Business Solutions Segment	3-64
3.13.8	Services Segment	3-64
3.14	Nortel	3-66
3.14.1	Nortel Networks Meridian Communications Portfolio	3-66
3.14.2	Investment Protection	3-66
3.14.3	Flexibility	3-67
3.14.4	Reliability	3-67
3.14.5	Proven Track Record	3-67
3.14.6	Norstar Integrated Communications Systems	3-67
3.14.7	Norstar Modular Integrated Communications System (MICS)	3-68
3.14.8	Norstar Compact 3x8	3-68
3.14.9	PBX PLUS	3-71
3.14.10	The Survivable Remote Gateway (SRG)	3-72
3.14.11	The Meridian Systems	3-73

3.14.12	Meridian 1 Option 11C Mini	3-74
3.14.13	Meridian 1 Option 11C	3-75
3.14.14	Meridian 1 Option 61C	3-76
3.15	Mitel	3-77
3.15.1	Mitel Networks 3100 Integrated Communications Platform	3-77
3.15.2	Mitel Networks 3340 Global Branch Office Solution	3-79
3.15.3	Mitel Networks SX-200 Integrated Communications Platform	3-81
3.15.4	Mitel Networks 6000 Managed Application Server	3-81
3.16	Panasonic	3-83
3.16.1	KX-TAW848 Advanced Hybrid Wired/Wireless PBX Telephone System	3-83
3.16.2	KX-TD500 Digital Super Hybrid Telephone System	3-88
3.16.3	2.4GHz Multi-Cell Wireless	3-91
3.17	Philips	3-94
3.17.1	iS3000 Series	3-94
3.17.2	iS3010	3-95
3.17.3	iS3030	3-95
3.17.4	iS3050	3-95
3.17.5	iS3070	3-95
3.17.6	iS3090	3-96
3.18	Softphones	3-96
3.18.1	Cisco	3-96
3.18.2	Cisco BTS 10200 Softswitch	3-96
3.18.3	Cisco Unity PBX IP Media Gateway	3-97
3.19	Avaya	3-99
3.19.1	Avaya IP Softphone	3-99

CONVERGED PBX VENDOR STRATEGY AND TECHNOLOGY

4. CONVERGED PBX VENDOR STRATEGY AND TECHNOLOGY	4-1	
4.1	Cisco IP Telephony Strategy	4-1
4.2	Siemens HiPath Strategic Objectives	4-3
4.2.1	Siemens eCRM Solutions Strategy	4-4
4.2.2	Siemens HiPath Trading	4-6
4.2.3	Siemens HiPath Hotel	4-6
4.2.4	Siemens ATM Networking	4-7
4.2.5	Siemens Call Detail Records	4-8
4.2.6	Siemens Skyport	4-8
4.3	Nortel PBX Product Development	4-11
4.4	Cisco Architecture For Voice, Video, And Integrated Data (AVVID)	4-13
4.5	Alcatel Support for Emerging Technologies	4-14
4.6	NEC	4-16
4.6.1	NEC Aspire Peer-To-Peer IP Switching	4-16
4.6.2	NEC Fusion Call Control Signaling	4-17
4.6.3	NEC Enterprise Communications Strategy	4-18
4.7	Philips SOPHO iS3000 Series Central Processor Modules	4-20
4.7.1	Philips Switching Network Module	4-21
4.7.2	Philips Peripheral Module	4-23
4.7.3	Toshiba IP Vision	4-25
4.8	Alcatel PBX Protocol Positioning	4-25
4.8.1	Alcatel Voice Protocols Integration	4-26
4.9	Voice Over IP Network	4-28
4.9.1	Converged IP-PBX Migration Scenario	4-29
4.9.2	Value of IP Technology	4-29

4.9.3	Different Forms of IP Technology	4-30
4.9.4	Nortel Succession Voice Over IP Network	4-31
4.10	Session Initiation Protocol (SIP)	4-31
4.10.1	Components of SIP	4-33
4.10.2	SIP Clients	4-33
4.10.3	SIP Servers	4-34
4.10.4	How SIP Works	4-34
4.10.5	Egress Filtering	4-36
4.10.6	SIP Vendors	4-36
4.11	PBX System Features And Move To Open Systems	4-40
4.12	PBX Converged Voice And Data Technology Protocol Proliferation	4-41
4.12.1	ITU-T's H.323	4-42
4.12.2	MGCP	4-43
4.12.3	H.248/Megaco	4-45
4.13	IP Traffic Volumes	4-47
4.14	Softswitch Definition	4-48
4.14.1	Soft Switch Opportunity	4-48
4.14.2	Soft Switch Positioning	4-50
4.15	Fault-Tolerant Server As Core Platform For Soft Switch Technology	4-51
4.16	Voice Over IP	4-52
4.17	Switching Shift To Packets	4-53
4.17.1	Simplified Message Desk Interface	4-57

PBX COMPANY DESCRIPTION

5. PBX COMPANY DESCRIPTION	5-1
5.1 Alcatel	5-1
5.2 Avaya	5-3
5.3 Ericsson	5-8
5.4 Mitel	5-8
5.5 NEC	5-10
5.6 Nortel	5-12
5.6.1 Network Elements	5-16
5.6.2 Enabling Technologies	5-16
5.6.3 ATM (Asynchronous Transfer Mode)	5-17
5.6.4 BICC	5-18
5.6.5 H.248	5-18
5.6.6 H.323	5-18
5.6.7 IP (Internet Protocol)	5-18
5.6.8 SIP (Session Initiation Protocol)	5-18
5.6.9 SIP-T (Session Initiation Protocol for Telephony)	5-19
5.6.10 TDM (Time Division Multiplexing)	5-19
5.7 Panasonic	5-20
5.7.1 Telecommunications Industry	5-20
5.8 Philips	5-21
5.9 Siemens	5-21
5.9.1 Research and Development	5-22

PBX INSTALLED BASE ANALYSIS

6. PBX INSTALLED BASE ANALYSIS	6-1
6.1 Enterprise PBX Switches	6-1
6.2 Local Area Networks (LANs)	6-56

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

Figure ES-1	ES-2
Total PBX Worldwide Market Shares, 2003	
Figure ES-2	ES-5
Global PBX Market Forecasts, 2004-2009	
Table ES-3	ES-6
Driving Forces For Change In The PBX Industry	

PBX DESCRIPTION AND MARKET DYNAMICS

Table 1-1	1-4
Converged Applications Questions	
Table 1-2	1-5
Converged Application Solution	
Table 1-3	1-7
Converged Applications Solutions Questions	
Table 1-4	1-8
Independent Branch Solutions Offerings	
Table 1-5	1-9
Independent Branch Solutions Questions	
Table 1-6	1-12
Converged Campus Solution	
Table 1-7	1-17
Impact Of Technology On Converged IP Services	
Table 1-8	1-19
Benefits Of Migration To A Converged Infrastructure	
Table 1-9	1-22
Reasons To Build Converged Network	
Table 1-10	1-25
Converged Voice/Data PBX Applications	
Table 1-11	1-32
Network Configurations That Intersect PBX Systems	
Table 1-12	1-38
Converged PBX Market Growth Factors	
Table 1-13	1-39
Converged PBX Market Change Factors	
Table 1-14	1-41
Growth Factors In The Converged PBX Industry	
Table 1-15	1-42
Converged PBX Sales Strategy	
Table 1-16	1-43
Small And Medium PBX Business Sectors	
Table 1-17	1-44
Key Converged PBX Network Functions	
Table 1-18	1-46
Converged PBX Market Positions	

PBX MARKET FORECASTS

Table 2-1	2-1
Converged Voice / Data PBX Applications	
Table 2-1	2-2
Converged Voice / Data PBX Applications	
Table 2-2	2-3
PBX Market Growth Factors	
Table 2-3	2-4
PBX Market Change Factors	
Table 2-4	2-5
Growth Factors In The PBX Industry	
Figure 2-5	2-7
Total PBX Worldwide Market Shares, 2003	
Table 2-6	2-8
PBX Market Shares, Worldwide, 2003	
Figure 2-7	2-9
PBX, Cabling, and Telephone Sets, Other Enterprise Equipment, Market Shares, Worldwide, 2003	
Table 2-8	2-10
PBX, Cabling, and Telephone Sets, Other Enterprise Equipment, Market Shares, Worldwide, 2003	
Figure 2-9	2-12
Global PBX Market Forecasts, 2004-2009	
Table 2-10	2-12
Worldwide PBX Equipment Market Forecasts, 2004-2009	
Figure 2-11	2-13
Worldwide PBX Equipment Market System Forecasts, Total Units, 2004-2009	
Table 2-12	2-14
Global PBX Market System Unit Forecasts, By Line Size, 2004-2009	
Figure 2-13	2-15
Global PBX Market Port Unit Forecasts, By Line Size, 2004-2009	
Table 2-14	2-16
Global PBX Market Port Unit Forecasts, By Line Size, 2004-2009	
Figure 2-15	2-17
Global PBX Price Forecasts, By Line Size, Systems, 2004-2009	
Table 2-16	2-18
Global PBX Market Port Unit Forecasts, By Line Size, 2004-2009	
Figure 2-17	2-19
Global PBX Price Forecasts, By Line Size, Ports, 2004-2009	
Table 2-18	2-20
Global PBX Price Forecasts, By Line Size, Ports, 2004-2009	
Figure 2-19	2-21
Worldwide PBX Equipment Market Large Systems Over 1000 Lines Forecasts, Total Systems Units, 2004-2009	
Table 2-20	2-22
Global PBX Market System Unit Forecasts, By Line Size, 2004-2009	
Figure 2-21	2-23
Global PBX Market Port Unit Forecasts Over 1000 Lines, By Line Size, 2004-2009	
Table 2-22	2-24
Global PBX Market Port Unit Forecasts, By Line Size, 2004-2009	
Figure 2-23	2-25
Global PBX Price Forecasts Large Systems Over 1000 Lines, By Line Size, Systems, 2004-2009	

Table 2-24	2-26
Global PBX Price Forecasts, By Line Size, Systems, 2004-2009	
Figure 2-25	2-27
Global PBX Market Port Unit Forecasts, By Line Size, Systems, 2004-2009	
Table 2-26	2-28
Global PBX Market Port Unit Forecasts, By Line Size, 2004-2009	
Figure 2-27	2-29
Worldwide PBX Equipment Market Large Systems 401-1000 Lines Forecasts, Total System Units, 2004-2009	
Table 2-28	2-30
Global PBX Market System Unit Forecasts, By Line Size, 2004-2009	
Figure 2-29	2-31
Global PBX Market Port Unit Forecasts 401-1000 Lines, By Line Size, 2004-2009	
Table 2-30	2-32
Global PBX Market Port Unit Forecasts, By Line Size, 2004-2009	
Figure 2-31	2-33
Global PBX Price Forecasts Large Systems 401-1000 Lines, By Line Size, Systems, 2004-2009	
Table 2-32	2-34
Global PBX Price Forecasts, By Line Size, Systems, 2004-2009	
Figure 2-33	2-35
Global PBX Price Forecasts 401-1000 Lines, By Line Size, Ports, 2004-2009	
Table 2-34	2-36
Global PBX Price Forecasts, By Line Size, Ports, 2004-2009	
Figure 2-35	2-37
Worldwide PBX Equipment Market Large Systems 100-400 Lines Forecasts, Total System Units, 2004-2009	
Table 2-36	2-38
Global PBX Market Systems Unit Forecasts, By Line Size, 2004-2009	
Figure 2-37	2-39
Global PBX Market Port Unit 100-400 Lines, By Line Size, 2004-2009	
Table 2-38	2-40
Global PBX Market Port Unit Forecasts, By Line Size, 2004-2009	
Figure 2-39	2-41
Global PBX Price Forecasts Large Systems 100-400 Lines, By Line Size, Systems, 2004-2009	
Table 2-40	2-42
Global PBX Price Forecasts, By Line Size, Systems, 2004-2009	
Figure 2-41	2-43
Global PBX Price Forecasts 100-400 Lines, By Line Size, Ports, 2004-2009	
Table 2-42	2-44
Global PBX Price Forecasts, By Line Size, Ports, 2004-2009	
Figure 2-43	2-45
Worldwide PBX Equipment Market Systems Under 100 Lines Forecasts, Total System Units, 2004-2009	
Table 2-44	2-46
Global PBX Market System Unit Forecasts, By Line Size, 2004-2009	
Figure 2-45	2-47
Global PBX Market Port Unit Forecasts Under 100 Lines, By Line Size, 2004-2009	
Table 2-46	2-48
Global PBX Market Port Unit Forecasts, By Line Size, 2004-2009	
Figure 2-47	2-49
Global PBX Price Forecasts Large Systems Under 100 Lines, By Line Size, 2004-2009	

Table 2-48	2-50
Global PBX Price Forecasts, By Line Size, Systems, 2004-2009	
Figure 2-49	2-51
Global PBX Price Forecasts Under 100 Lines, By Line Size, 2004-2009	
Table 2-50	2-52
Global PBX Price Forecasts, By Line Size, Ports, 2004-2009	
Figure 2-51	2-54
PBX Regional Market Analysis, United States, Percent, 2003	
Table 2-52	2-55
PBX Regional Market Analysis, Worldwide, Percent, 2003	
Figure 2-53	2-56
PBX Regional Market Analysis, Europe, Percent, 2003	
Table 2-54	2-57
PBX Regional Market Analysis, Worldwide, Percent, 2003	
Figure 2-55	2-58
PBX Regional Market Analysis, Japan, Percent, 2003	
Table 2-56	2-59
PBX Regional Market Analysis, Worldwide, Percent, 2003	
Figure 2-57	2-60
PBX Regional Market Analysis, Asia Pacific, Percent, 2003	
Table 2-58	2-61
PBX Regional Market Analysis, Worldwide, Percent, 2003	
Figure 2-59	2-62
PBX Regional Market Analysis, Other, Percent, 2003	
Table 2-60	2-63
PBX Regional Market Analysis, Worldwide, Percent, 2003	
Table 2-61	2-66
Aspects Of CTI Systems	
Table 2-62	2-69
Selected Vendors Of IP PBXs	
Table 2-63	2-70
Factors Impacting LAN Markets	
Table 2-64	2-72
Key Business Benefits Of Multimedia Communications	

PBX PRODUCT DESCRIPTION

Table 3-1	3-1
Alcatel First Reflexes™ Features and Benefits	
Table 3-2	3-2
Alcatel Premium Reflexes™ Features and Benefits	
Table 3-3	3-4
OmniPCX Enterprise Features and Benefits	
Table 3-4	3-5
Omni PCX Software and Hardware	
Table 3-5	3-6
Features	
Table 3-6	3-7
Reflexes phones advanced services	
Table 3-7	3-9
ISDN services	

Table 3-8	3-10
Manager-assistant team Features	
Table 3-9	3-11
Teamwork Configuration Features	
Table 3-10	3-11
Standard Telephone Features	
Table 3-11	3-13
Alcatel OmniPCX Enterprise Regular Telephone Services	
Table 3-12	3-15
Security	
Table 3-13	3-17
Hicom 300 H Features	
Table 3-14	3-19
HiPath 4000 Features	
Table 3-15	3-21
HiPath 5000 Benefits	
Table 3-16	3-25
Meridian 1 Option 81C Features and Benefits	
Table 3-17	3-26
Meridian SL-100 Features and Benefits	
Table 3-18	3-27
Succession 3.0 Features and Benefits	
Table 3-19	3-29
Succession 3.0 Features and Benefits	
Table 3-20	3-34
Mitel Networks SX-2000 Qualities	
Table 3-21	3-36
OmniPCX Office Features and Benefits	
Table 3-22	3-39
HiPath 3000 Benefits	
Table 3-23	3-41
Qualities of Mitel Networks 3300 ICP	
Table 3-24	3-42
Alcatel Small Office Business Solution Functions	
Table 3-25	3-43
Alcatel First Reflexes™ Key Features and Benefits	
Table 3-26	3-44
Alcatel Easy Reflexes™ Features and Benefits	
Table 3-27	3-46
Services for end users	
Table 3-28	3-47
Typical Applications	
Table 3-29	3-48
Bursty Data Services Applications	
Table 3-30	3-49
High Performance Air Interface Technical Advantages	
Table 3-31	3-50
Full Software Control	
Table 3-32	3-52
Euroset 822 ST Features	
Table 3-33	3-57
Converged Networks Benefits	

WINTERGREEN RESEARCH, INC.

Table 3-34	3-58
Avaya IP Telephony Offerings	
Table 3-35	3-63
Unified Communication Benefits	
Table 3-36	3-65
Standard and Customized Services	
Table 3-37	3-69
Key Features of Norstar Compact 3x8	
Table 3-38	3-70
CICS Key Features	
Table 3-39	3-71
ICS Key Features	
Table 3-40	3-73
The Survivable Remote Gateway (SRG) Features	
Table 3-41	3-74
Meridian 1 Option 11C Mini Features and Benefits	
Table 3-42	3-75
Meridian 1 Option 11C Features and Benefits	
Table 3-43	3-76
Meridian 1 Option 61C Features and Benefits	
Table 3-44	3-78
Solutions of 3100 ICP	
Table 3-45	3-80
Mitel Networks 3340 Supports	
Table 3-46	3-82
The 6000 MAS Benefits	
Table 3-47	3-83
KX-TAW848 Advanced Hybrid Wired/Wireless PBX Telephone System	
Table 3-48	3-89
KX-TD500 Digital Super Hybrid Telephone System Features	
Table 3-49	3-99
Technical and Deployment Limitations of the Cisco Unity	

CONVERGED PBX VENDOR STRATEGY AND TECHNOLOGY

Table 4-1	4-7
Siemens HiPath Hotel Features	
Table 4-2	4-10
Siemens Industries and Market Segments Targeted with PBX Systems	
Table 4-3	4-17
Peer-to-Peer IP Connectivity Benefits	
Table 4-4	4-18
NEC Enterprise Communications Strategy	
Table 4-5	4-24
Philips Peripheral Module Functions	
Table 4-6	4-26
Alcatel Universal Connectivity	
Table 4-7	4-27
Alcatel Voice Protocols Integration	
Table 4-8	4-32
SIP Capabilities	

Table 4-9 SIP Vendors	4-37
--------------------------	------

PBX COMPANY DESCRIPTION

Table 5-1 Avaya Product Offerings	5-4
Table 5-2 Avaya Product Portfolio	5-6
Table 5-3 Voice over IP Benefits	5-15
Table 5-4 Technologies Relating to Voice over IP	5-17

PBX INSTALLED BASE ANALYSIS

Figure 6-1 Global PBX Market System Unit Forecasts, By Line Size, 1996-2000	6-1
Table 6-2 Global PBX Market System Unit Forecasts, By Line Size, 1996-2000	6-2
Figure 6-3 Global PBX Market System Unit Forecasts, By Line Size, 2001-2003	6-3
Table 6-4 Global PBX Market System Unit Forecasts, By Line Size, 2001-2003	6-4
Figure 6-5 Global PBX Price Forecasts, By Line Size, Ports, 2002-2007	6-5
Table 6-6 Global PBX Price Forecasts, By Line Size, Ports, 2002-2007	6-6
Figure 6-7 Global PBX Price Forecasts, By Line Size, Systems, 2002-2007	6-7
Table 6-8 Global PBX Price Forecasts, By Line Size, Systems, 2002-2007	6-8
Figure 6-9 Global PBX Installed Base Analysis, By Line Size, 1996-2002	6-9
Table 6-10 Global PBX Installed Base Analysis, By Line Size, 1996-2002	6-10
Figure 6-11 Global PBX Ports, By Line Size, 1996-2002	6-11
Table 6-12 Global PBX Ports, By Line Size, 1996-2002	6-12
Figure 6-13 Global PBX Shipment Analysis, By Line Size, Systems, 1996-2001	6-13
Table 6-14 Global PBX Shipment Analysis, By Line Size, Systems, 1996-2001	6-14
Figure 6-15 Global PBX Market System Unit Forecasts Large Systems Over 1000 Lines, By Line Size, 1996-2000	6-15
Table 6-16 Global PBX Market System Unit Forecasts, By Line Size, 1996-2000	6-16
Figure 6-17 Global PBX Market System Unit Forecasts Large Systems Over 1000 Lines, By Line Size, 2001-2003	6-17
Table 6-18 Global PBX Market System Unit Forecasts, By Line Size, 2001-2003	6-18

Figure 6-19	6-19
Global PBX Price Forecasts Large Systems Over 1000 Lines, By Line Size, 2002-2007	
Table 6-20	6-20
Global PBX Price Forecasts, By Line Size, Ports, 2002-2007	
Figure 6-21	6-21
Global PBX Price Forecasts Large Systems Over 1000 Lines, By Line Size, Systems, 2002-2007	
Table 6-22	6-22
Global PBX Price Forecasts, By Line Size, Systems, 2002-2007	
Figure 6-23	6-23
Global PBX Installed Base Systems Over 1000 Lines, By Line Size, Systems, 1996-2002	
Table 6-24	6-24
Global PBX Installed Base Analysis, By Line Size, Systems, 1996-2002	
Figure 6-25	6-25
Global PBX Ports Large Systems Over 1000 Lines, By Line Size, 1996-2002	
Table 6-26	6-26
Global PBX Ports, By Line Size, 1996-2002	
Figure 6-27	6-27
Global PBX Shipment Analysis Large Systems Over 1000 Lines, By Line Size, Systems, 1996-2001	
Table 6-28	6-28
Global PBX Shipment Analysis, By Line Size, Systems, 1996-2001	
Figure 6-29	6-29
Global PBX Market System Unit Forecasts Systems of 401-1000 Lines, By Line Size, 1996-2000	
Table 6-30	6-30
Global PBX Market System Unit Forecasts, By Line Size, 1996-2000	
Figure 6-31	6-31
Global PBX Market System Unit Forecasts Systems of 401-1000 Lines, By Line Size, 2001-2003	
Table 6-32	6-32
Global PBX Market System Unit Forecasts, By Line Size, 2001-2003	
Figure 6-33	6-33
Global PBX Price Forecasts Systems of 401-1000 Lines, By Line Size, Ports, 2002-2007	
Table 6-34	6-34
Global PBX Price Forecasts, By Line Size, Ports, 2002-2007	
Figure 6-35	6-35
Global PBX Price Forecasts Systems of 401-1000 Lines, By Line Size, Systems, 2002-2007	
Table 6-36	6-36
Global PBX Price Forecasts, By Line Size, Systems, 2002-2007	
Figure 6-37	6-37
Global PBX Installed Base Analysis Systems of 401-1000 Lines, By Line Size, Systems, 1996-2002	
Table 6-38	6-38
Global PBX Installed Base Analysis, By Line Size, 1996-2002	
Figure 6-39	6-39
Global PBX Port Systems of 401-1000 Lines, By Line Size, 1996-2002	
Table 6-40	6-40
Global PBX Ports, By Line Size, 1996-2002	
Figure 6-41	6-41
Global PBX Shipment Analysis Systems of 401-1000 Lines, By Line Size, Systems, 1996-2001	
Table 6-42	6-42
Global PBX Shipment Analysis, By Line Size, Systems, 1996-2001	
Figure 6-43	6-43
Global PBX Market System Unit Forecasts Systems of 100-400 Lines, By Line Size, 1996-2000	
Table 6-44	6-44
Global PBX Market System Unit Forecasts, By Line Size, 1996-2000	

Figure 6-45	6-45
Global PBX Market System Unit Forecasts Systems of 100-400 Lines, By Line Size, 2001-2003	
Table 6-46	6-46
Global PBX Market System Unit Forecasts, By Line Size, 2001-2003	
Figure 6-47	6-47
Global PBX Price Forecasts Systems of 100-400 Lines, By Line Size, Ports, 2002-2007	
Table 6-48	6-48
Global PBX Price Forecasts, By Line Size, Ports, 2002-2007	
Figure 6-49	6-49
Global PBX Price Forecasts Systems of 100-400 Lines, By Line Size, Systems, 2002-2007	
Table 6-50	6-50
Global PBX Price Forecasts, By Line Size, Systems, 2002-2007	
Figure 6-51	6-51
Global PBX Installed Base Analysis Systems of 100-400 Lines, By Line Size, Systems, 1996-2002	
Table 6-52	6-52
Global PBX Installed Base Analysis, By Line Size, Systems, 1996-2002	
Figure 6-53	6-53
Global PBX Port Systems Under 100 Lines, By Line Size, 1996-2002	
Table 6-54	6-54
Global PBX Ports, By Line Size, 1996-2002	
Figure 6-55	6-55
Global PBX Shipment Analysis Systems of 100-400 Lines, By Line Size, Systems, 1996-2001	
Table 6-56	6-56
Global PBX Shipment Analysis, By Line Size, Systems, 1996-2001	
Figure 6-57	6-58
Global PBX Market System Unit Forecasts Systems Under 100 Lines, By Line Size, 1996-2000	
Table 6-58	6-59
Global PBX Market System Unit Forecasts, By Line Size, 1996-2000	
Figure 6-59	6-60
Global PBX Market System Unit Forecasts Systems Under 100 Lines, By Line Size, 2001-2003	
Table 6-60	6-61
Global PBX Market System Unit Forecasts, By Line Size, 2001-2003	
Figure 6-61	6-62
Global PBX Price Forecasts Systems Under 100 Lines, By Line Size, Ports, 2002-2007	
Table 6-62	6-63
Global PBX Price Forecasts, By Line Size, Ports, 2002-2007	
Figure 6-63	6-64
Global PBX Price Forecasts Systems Under 100 Lines, By Line Size, Systems, 2002-2007	
Table 6-64	6-65
Global PBX Price Forecasts, By Line Size, Ports, 2002-2007	
Figure 6-65	6-66
Global PBX Installed Base Analysis Systems Under 100 Lines, By Line Size, Systems, 1996-2002	
Table 6-66	6-67
Global PBX Installed Base Analysis, By Line Size, Systems, 1996-2002	
Figure 6-67	6-68
Global PBX Port Systems Under 100 Lines, By Line Size, 1996-2002	
Table 6-68	6-69
Global PBX Ports, By Line Size, 1996-2002	
Figure 6-69	6-70
Global PBX Shipment Analysis Systems Under 100 Lines, By Line Size, Systems, 1996-2001	
Table 6-70	6-71
Global PBX Shipment Analysis, By Line Size, Systems, 1996-2001	

Table 6-71	6-73
PBX Feature Highlights	
Table 6-72	6-77
Protocol	

ABOUT THE COMPANY

WINTERGREEN RESEARCH, HAS A UNIQUE RESEARCH STRATEGY THAT RELATES TO IDENTIFYING MARKET TRENDS THROUGH READING AND INTERVIEWING OPINION LEADERS. BY READING THE ELECTRONIC EQUIVALENT OF 40 FEET OF PAPER, WINTERGREEN RESEARCH SENIOR ANALYSTS CAN LEARN A LOT MORE ABOUT MARKETS, A LOT FASTER THAN CAN BE LEARNED THROUGH EXPENSIVE SURVEYS AND FOCUS GROUPS. THINKING ABOUT MARKET TRENDS IS A HIGH PRIORITY AT WINTERGREEN RESEARCH. AS WITH ALL RESEARCH, THE VALUE PROPOSITION FOR COMPETITIVE ANALYSIS COMES FROM INTELLECTUAL INPUT.

IT IS A LUXURY REALLY, AVAILABLE TO ONLY A VERY FEW PEOPLE, TO BE ABLE TO GATHER INFORMATION, LOTS OF INFORMATION FROM READING MASSIVE AMOUNTS OF CONTENT, AND THEN TRYING TO MAKE SENSE OF THAT CONTENT. THE ABILITY TO THINK ABOUT MARKET TRENDS IS ENHANCED BY DOING IT OVER AND OVER FOR MANY DIFFERENT MARKETS. THAT IS WHAT WINTERGREEN RESEARCH IS ALL ABOUT: READING AND THINKING IS AN ESSENTIAL ASPECT OF COMPETITIVE ANALYSIS. TALKING TO OPINION LEADERS IS THE THIRD ESSENTIAL ASPECT OF PRODUCING GOOD, RELIABLE DATA.

WINTERGREEN RESEARCH, FOUNDED IN 1985, PROVIDES STRATEGIC MARKET ASSESSMENTS IN TELECOMMUNICATIONS, COMMUNICATIONS EQUIPMENT, HEALTH CARE, INTERNET AND ADVANCED COMPUTER TECHNOLOGY. INDUSTRY REPORTS FOCUS ON OPPORTUNITIES THAT 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 2004-2009**

**-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 # SH29821354 385 PAGES 219 TABLES AND FIGURES 2004 \$2,800