

WINTERGREEN RESEARCH, INC.

**Worldwide Wireless Handset Market Opportunities,
Strategies, and Forecasts, 2005 to 2011**

Worldwide Wireless Handset



Picture by Susie Eustis

MOUNTAINS OF OPPORTUNITY

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

www.wintergreenresearch.com

REPORT # SH29821417 402 PAGES 160 TABLES AND FIGURES 2005 \$2,800

CHECK OUT THESE KEY TOPICS

WORLDWIDE WIRELESS HANDSET MARKET SHARES
WORLDWIDE WIRELESS HANDSET MARKET FORECASTS
Worldwide Wireless Handset Market Driving Forces
Increasing Average Revenue Per User (ARPU)

Market Growth Dynamics
Wireless Networks
WORLDWIDE WIRELESS TELECOMMUNICATIONS MARKET
VOICE INFRASTRUCTURE MARKET
CONVERGED NETWORK REVOLUTION
WAP DISCONTINUED
SPECIFIC ABSORPTION RATE (SAR) OF A MOBILE PHONE
EGPRS (EDGE)
COMMUNICATIONS NETWORKING INDUSTRY
DEMAND FOR TOTAL SOLUTIONS
STRATEGIES TO IMPROVE PERFORMANCE
SERVICE PROVIDER MARKET CHARACTERISTICS

OPPORTUNITY ABOUND

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

Worldwide Wireless Handset Market Opportunities, Market Forecasts, and Market Strategies, 2005-2011

The worldwide telecommunications markets including wireless handsets are set for extraordinary growth, doubling from \$123 billion in 2004 to \$282 billion by 2010 based on expansion of wireless communications markets. Communications represents opportunity for expansion of economies. The wireless based communications systems are vastly improving the ability of people to communicate from anywhere.

The ability to achieve voice communication makes people more efficient. People use wireless handsets because they are convenient. Worldwide penetration is expected to get higher than 50%, and unprecedented penetration of technology. More information can be communicated not in real time, and is available, as people need it. Young men use wireless handsets. They lead the market in underdeveloped countries.

Once young men have handsets, the young women get them, and then the youth give handsets and connectivity to their parents. In developed countries, penetration is expected to climb over 95%. Messaging systems play a significant role in passing information asynchronously, increasing the usefulness of systems. Short messaging is popular.

3G data services are not achieving strong growth, though they will have some uptake as web sites are designed for wireless connectivity. Camera phones are popular, but not for transmitting pictures. Games are sure to catch on.

Underdeveloped countries use communications to achieve trading and exchange of goods. As people have portable communications devices, they want more things and can make an economy emerge where there was none before.

A Siemens representative tells about putting a refrigerator size telecom switch in a rural South African village and coming back 10 years later to find a thriving village with shops and civilization. When people were coming and going to the city of Johannesburg, they would carry goods in both directions, creating demand for more items because communications had been implemented. Trade went in both directions from the village to the city and from the city to the village.

People like to talk to each other. Wireless handsets are poised to be ubiquitous. The ability to prepay for services and the low cost of a handset make this technology available worldwide, the first technology to penetrate underdeveloped economies.

Worldwide telecommunications and communications equipment market forecasts, shipments in dollars analysis indicate strong growth in very large existing markets. Markets for wireless handsets at 882 million unit shipments in 2004 are anticipated to reach 2.1 billion unit shipments by 2011. Units last 1.5 years on average, with prices declining significantly.

Companies Profiled

Market Leaders

Nokia
Motorola
NEC

Market Participants

Alcatel	Avaya
Cisco Systems	Cyress Semiconductor
Enea Embedded Technology	Ericsson
Frontier Silicon	Fujitsu
Huawei Technologies	Intel
Lucent Technologies	Nortel
Samsung	Siemens
UT Starcom	WindRiver

Worldwide Wireless Handset Strategies and Forecasts, 2005-2011

REPORT METHODOLOGY

THIS IS THE 256TH REPORT IN A SERIES OF MARKET RESEARCH REPORTS THAT PROVIDE FORECASTS IN COMMUNICATIONS, TELECOMMUNICATIONS, THE INTERNET, COMPUTER, SOFTWARE, TELEPHONE EQUIPMENT, HEALTH 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. WE ESTABLISH ACCURATE MARKET FORECASTS BASED ON ECONOMIC AND MARKET CONDITIONS AS A BASE. USE INPUT/OUTPUT RATIOS, FLOW CHARTS, AND OTHER ECONOMIC METHODS TO QUANTIFY DATA. USE IN-HOUSE ANALYSTS WHO MEET STRINGENT QUALITY STANDARDS. INTERVIEWING KEY INDUSTRY PARTICIPANTS, EXPERTS AND END-USERS. OUR RESEARCH INCLUDES ACCESS TO LARGE PROPRIETARY DATABASES. LITERATURE SEARCH INCLUDES ANALYSIS OF TRADE PUBLICATIONS, GOVERNMENT REPORTS, AND CORPORATE LITERATURE.

YOU MUST HAVE THIS STUDY

Worldwide Wireless Handset Market Opportunities, Strategies, and Forecasts, 2005 to 2011

Table of Contents

WORLDWIDE WIRELESS HANDSET EXECUTIVE SUMMARY

WORLDWIDE WIRELESS HANDSET EXECUTIVE SUMMARY	ES-1
Worldwide Wireless Handset Market Growth	ES-1
Wireless Handset Market Driving Forces	ES-3
Worldwide Wireless Handset Market Shares	ES-5
Worldwide Wireless Handset Market Forecasts, Shipments	ES-6

WORLDWIDE WIRELESS HANDSET MARKET DESCRIPTION AND MARKET DYNAMICS

1. WORLDWIDE WIRELESS HANDSET MARKET DESCRIPTION AND MARKET DYNAMICS	1-1
1.1 Increasing Average Revenue Per User (ARPU)	1-1
1.1.1 Improved Quality Of Service	1-1
1.1.2 Reduced Capital And Operational Costs	1-2
1.1.3 Enhanced Operability	1-3
1.2 Impact of Competition	1-5
1.3 Market Growth Dynamics	1-7
1.4 Wireless Networks	1-9
1.4.1 New Generation Of Wireless Systems	1-13
1.4.2 Provides Flexibility	1-14
1.4.3 User Experience	1-14
1.4.4 Protects Investments	1-15
1.4.5 Increases Efficiency	1-15
1.4.6 Integrated Management Tools	1-17
1.4.7 Cost-Effective Capacity And Coverage	1-18
1.5 Multimedia Markets	1-18
1.6 Web Services	1-21
1.7 Strategies To Improve Performance	1-22
1.8 Customer Financing Arrangements	1-25
1.9 Market Makers	1-26
1.10 Demand For Total Solutions	1-31
1.11 Marketing Globally	1-32
1.12 Internet Traffic	1-34
1.13 Communications Networking Industry	1-35
1.14 Communications Industry Competitive Factors	1-44
1.15 Worldwide Wireless Telecommunications Markets	1-46
1.15.1 Telecommunications Equipment Vendor Consolidation	1-48
1.16 Service Provider Market Characteristics	1-49
1.17 Competitive Structure Of The Carrier Market	1-51
1.17.1 Lowering Service Provider Costs	1-52
1.18 Voice Infrastructure Market	1-52
1.18.1 E-Commerce And Web Marketing	1-54
1.19 Change In Telecommunication Network Architecture	1-54

1.20	Foundations For Telecommunications Network Change	1-55
1.21	Converged Network Revolution	1-58
1.21.1	Converged Voice And Data Networks	1-59

WIRELESS HANDSET MARKET SHARES AND MARKET FORECASTS

2.	WIRELESS HANDSET MARKET SHARES AND MARKETS FORECASTS	2-1
2.1	Wireless Handset Market Driving Forces	2-1
2.1.1	3G Wireless Handset Market Driving Forces	2-4
2.1.2	Wireless Handset Strategy	2-6
2.2	Wireless Handset Provider Shipments	2-7
2.3	Top Ten Telecommunications and Communications Equipment Segment Analysis	2-11
2.4	Wireless Telecommunications and Communications Equipment Market Forecasts	2-15
2.4.1	Worldwide Wireless Handset Market Forecasts	2-18
2.5	Principal Competitive Factors In Telecommunication Markets	2-19
2.6	Market Growth Forces	2-22
2.6.1	Fast Pace Of Adoption Of Internet Commerce	2-23
2.6.2	Teleconferencing And Video Telephony	2-24
2.6.3	Global Communications Networking Industry In 2005	2-25
2.6.4	Telecommunications Industry Adjustment In 2005	2-25
2.7	Restructuring Telecommunications	2-26
2.8	Economic Implications	2-27
2.8.1	Networking Business Acquisitions	2-29
2.9	Top Ten Telecommunications Equipment Provider Market Shares	2-29
2.9.1	Top Ten Telecommunications Service Provider Core Infrastructure Equipment Market Shares	2-33
2.9.2	Top Ten Telecommunications Service Provider IP Equipment Market Shares	2-35
2.9.3	Top Ten Telecommunications Enterprise Equipment Market Shares	2-36
2.9.4	Top Ten Telecommunications Wireless Infrastructure Equipment Market Shares	2-38
2.9.5	Top Ten Telecommunications Wireless Handset Market Shares	2-39
2.10	Wireless Handset Regional Analysis	2-40
2.11	Selected Wireless Handset Vendor Communications Equipment Market Shares	2-41
2.11.1	Nokia	2-41
2.11.2	Motorola	2-43
2.11.3	Siemens	2-44
2.11.4	Alcatel	2-46
2.11.5	NEC	2-47
2.11.6	Ericsson	2-49
2.11.7	Nortel	2-51
2.11.8	Cisco	2-53
2.11.9	Lucent	2-55
2.11.10	Fujitsu	2-57
2.11.11	Huawei	2-59
2.11.12	Avaya	2-61
2.12	Top Ten Telecommunications Provider Equipment Regional Market Shares	2-63
2.12.1	Nokia	2-63
2.12.2	Motorola	2-65
2.12.3	Siemens	2-66
2.12.4	Alcatel	2-68
2.12.5	NEC	2-69
2.12.6	Ericsson	2-71
2.12.7	Nortel	2-72
2.12.8	Cisco	2-74

2.12.9	Lucent	2-75
2.12.10	Fujitsu	2-77
2.12.11	Huawei	2-78
2.12.12	Avaya	2-80
2.13	Wireless Handset Unit Market Shares	2-82
2.13.1	Nokia	2-86
2.13.2	Motorola	2-87
2.14	2G Wireless Handset Market User Forecast	2-87
2.15	2G Wireless Handset Market Forecast	2-92
2.16	Wireless Handsets Penetration Analysis	2-104
2.17	Wireless Handsets Market Analysis By Technology	2-108
2.17.1	Governing Agencies	2-108
2.17.2	4G and the Future Market -- ARPU	2-109
2.17.3	2nd Generation Wireless Services	2-109
2.17.4	GSM	2-110
2.17.5	TDMA	2-111
2.17.6	GSM vs. CDMA2000	2-111
2.17.7	GSM Radio Interface	2-112
2.17.8	Modulation Used In GSM	2-114
2.17.9	iDEN	2-115
2.17.10	PDC	2-116
2.17.11	CdmaOne	2-117
2.17.12	CDMA	2-118
2.17.13	Digital AMPS	2-119
2.18	The Evolution from 2nd Generation to 2.5 Generation Mobile Handsets	2-119
2.18.1	GPRS	2-120
2.18.2	GPRS service	2-120
2.18.3	GPRS Speeds And Profiles	2-121
2.18.4	GPRS Services	2-125
2.18.5	EDGE	2-126
2.18.6	CDMA2000, 2.75G	2-128
2.18.7	CDMA2000 1xRTT	2-131
2.19	3rd Generation Mobile Handsets Today and Their Future	2-131
2.19.1	W-CDMA	2-131
2.19.2	UMTS	2-134
2.19.3	UMTS, FOMA, W-CDMA	2-135
2.19.4	Competing 3g Standards	2-136
2.19.5	UMTS	2-137
2.19.6	UMTS	2-139
2.20	4G	2-139
2.20.1	HSDPA	2-140

WORLDWIDE WIRELESS HANDSET DESCRIPTIONS

3. WORLDWIDE WIRELESS HANDSET DESCRIPTIONS	3-1
3.1 Wireless Handsets	3-1
3.1.1 Nokia Communications Products	3-1
3.1.2 Nokia Mobile Devices	3-2
3.1.3 Nokia Mobile Devices	3-4
3.1.4 Nokia 6620 / 6600	3-5
3.1.5 Nokia Multimedia In 2004	3-11
3.1.6 Nokia 3G WCDMA Smartphone	3-11

3.1.7	Nokia Push To Talk	3-11
3.1.8	Nokia Multimedia In 2004	3-12
3.2	Motorola Wireless Handsets	3-12
3.2.1	Motorola V3 Handset	3-12
3.2.2	Motorola MPx220 Handset	3-14
3.3	Sony / Ericsson Wireless Handsets	3-18
3.3.1	Sony Ericsson Wireless Services For Machine-to-Machine Application Development	3-19
3.3.2	Sony Ericsson V800	3-20
3.3.3	Alcatel Mobile Phones	3-21
3.4	Siemens M75	3-22
3.4.1	Siemens CX75	3-23
3.5	Samsung p777 / Cingular	3-23
3.5.1	Samsung DVB-H Handset	3-26
3.6	Lucent LU PS-900	3-27
3.7	Kyocera	3-28
3.8	Cellon	3-28

WORLDWIDE WIRELESS HANDSET TECHNOLOGY

4. WORLDWIDE WIRELESS HANDSET TECHNOLOGY	4-1
4.1 WAP Discontinued	4-1
4.1.1 Reformatting Web Pages To Fit On Smaller Screens	4-1
4.1.2 Web Sites Specially Designed For Use By Mobile Phones Use Mobi Suffix	4-2
4.2 Cypress Semiconductor High-Performance MoBL (more battery life) Dual-Port RAM	4-3
4.2.1 Multi-Processor, Or Modular, Architecture	4-3
4.3 Analog Devices Chip That Shrinks The Radio In Cellular Telephones To 1.5cm ²	4-5
4.4 StarCore StarCodec Range	4-6
4.5 Enea Embedded Technology Demand Paging For Wireless Handset Platform	4-8
4.6 Wireless Handset Industry Leaders Join Mobile Imaging And Printing Consortium	4-9
4.7 IP Within CDMA	4-11
4.8 Specific Absorption Rate (SAR) Of A Mobile Phone	4-13
4.8.1 Specific Absorption Rate (SAR) Standards	4-14
4.8.2 Mobile Phones Meet Requirements For Exposure To Radio Waves	4-15
4.9 Bluetooth	4-16
4.10 GPRS	4-17
4.11 EGPRS (EDGE)	4-18
4.11.1 EDGE Connects With Speed	4-19
4.11.2 Seamless Network	4-21
4.11.3 Flexible 3G deployment	4-21
4.11.4 Retention of GSM subscribers	4-21
4.12 Multimedia Messaging Service	4-23
4.13 Mobile Video	4-23
4.14 Presence	4-24
4.15 Push to Talk	4-24

WORLDWIDE WIRELESS HANDSET COMPANY PROFILES

5. WORLDWIDE WIRELESS HANDSET COMPANY PROFILES	5-1
5.1 Alcatel	5-1
5.1.1 Alcatel Positioning	5-4
5.1.2 Alcatel Market Issues	5-5
5.1.3 Alcatel Multi-service Aggregation	5-7
5.1.4 Alcatel Broadband Access	5-8

WINTERGREEN RESEARCH, INC.

5.1.5	Alcatel-To-End Communications Solutions	5-9
5.1.6	Alcatel VND Division	5-9
5.1.7	Alcatel Net Sales 2003	5-10
5.1.8	Alcatel Third Quarter 2004 Revenue	5-11
5.1.9	Alcatel Fixed Communications	5-14
5.1.10	Alcatel Mobile Communications	5-15
5.1.11	Alcatel Private Communications	5-16
5.1.12	Alcatel Third Quarter 2004 Regional Revenue	5-17
5.1.13	Third Quarter 2003 Regional Revenue	5-18
5.1.14	Alcatel Participation In Communications Network Equipment Markets	5-20
5.1.15	Alcatel Metro DWDM	5-21
5.1.16	Alcatel and Optics	5-24
5.2	Avaya	5-26
5.2.1	Avaya Customers	5-30
5.2.2	Avaya Revenue 2004	5-31
5.2.3	Avaya Acquisitions	5-33
5.3	Cisco Systems	5-37
5.3.1	Cisco IP Communications	5-37
5.3.2	Cisco Systems Second Quarter Fiscal Year 2005 Revenue	5-37
5.3.3	Cisco IP Communications	5-42
5.3.4	Cisco / Linksys	5-42
5.3.5	Cisco / Linksys Broadband and Wireless Networking	5-45
5.4	Cypress Semiconductor	5-47
5.5	Enea Embedded Technology	5-48
5.6	Ericsson	5-49
5.6.1	Ericsson Revenue	5-49
5.6.2	Ericsson Customers T-Mobile UMTS network	5-52
5.6.3	Sony Ericsson Mobile Communications Revenue	5-53
5.6.4	Sony Ericsson Mobile Communications Products	5-54
5.6.5	Sony Ericsson Symbian	5-55
5.7	Frontier Silicon	5-55
5.8	Fujitsu	5-56
5.8.1	Fujitsu Network Communications	5-57
5.8.2	Fujitsu Considers WiMAX vs. 3G vs. Wi-Fi	5-57
5.8.3	Fujitsu FLASHWAVE® 7500 Small System	5-58
5.8.4	Fujitsu FASST Transition Solutions	5-58
5.8.5	Fujitsu Microelectronics America	5-58
5.8.6	Fujitsu Network Communications Inc.	5-59
5.8.7	Fujitsu Revenue	5-59
5.8.8	Fujitsu Business Segment Results	5-60
5.9	Huawei Technologies	5-62
5.10	Intel	5-67
5.10.1	Intel Communications Wi-Fi Company Investment	5-73
5.11	Lucent Technologies	5-75
5.11.1	Lucent Technologies Maximize Service Revenues	5-76
5.11.2	Lucent Technologies Systems	5-76
5.11.3	Lucent Bell Labs	5-77
5.12	Motorola	5-87
5.12.1	Motorola Revenue	5-88
5.13	NEC	5-92
5.13.1	NEC IT And Networking Technologies	5-94
5.13.2	NEC Network Solutions Business	5-98

5.13.3	NEC Internet Broadband Network Positioning	5-99
5.14	Nokia	5-99
5.14.1	Nokia Revenue	5-101
5.14.2	Nokia Infrastructure Sales	5-104
5.14.3	Nokia Mobile Phones In The Fourth Quarter 2004	5-105
5.14.4	Nokia Multimedia In The Fourth Quarter 2004	5-106
5.14.5	Nokia Enterprise Solutions In The Fourth Quarter 2004	5-107
5.15	Nortel	5-109
5.15.1	Nortel VoIP Network Elements	5-114
5.15.2	Nortel VoIP Enabling Technologies	5-114
5.15.3	Nortel ATM (Asynchronous Transfer Mode)	5-115
5.15.4	Nortel Networking And Communication Services And Infrastructure	5-116
5.15.5	Nortel Network Elements	5-120
5.15.6	Nortel Enabling Technologies	5-120
5.15.7	Nortel ATM (Asynchronous Transfer Mode)	5-121
5.16	Samsung	5-121
5.17	Siemens	5-123
5.17.1	Siemens Business Services	5-123
5.17.2	Siemens Research and Development	5-124
5.17.3	Siemens Information and Communication Networks	5-124
5.17.4	Siemens Information and Communication Mobile Group	5-125
5.18	UT Starcom	5-126
5.18.1	UTStarcom Third Quarter 2004 Revenue	5-127
5.18.2	Key UTStarcom Customer Wins	5-128
5.18.3	UTStarcom Global Technology	5-129
5.18.4	UTStarcom Sarbanes-Oxley	5-129
5.19	WindRiver	5-131

List of Tables and Figures**WORLDWIDE WIRELESS HANDSET EXECUTIVE SUMMARY**

Table ES-1 Wireless Handset Market Driving Forces	ES-4
Table ES-2 Wireless Handset Market Shares By Dollars, 2004	ES-5
Table ES-3 Worldwide 2G, 2.5G, and 3G market Forecasts, Units, 2004-2011	ES-6
Table ES-4 Wireless Handset Shipments By Region, Dollars, 2004	ES-7
Table ES-5 Wireless Handset Shipments By Region, Dollars, 2005-2011	ES-8
Table ES-6 Wireless Handset Shipments By Region, Units, 2005-2011	ES-9

WORLDWIDE WIRELESS HANDSET MARKET DESCRIPTION AND MARKET DYNAMICS

Table 1-1 Network Systems Functions	1-4
Table 1-2 Telecommunications Market Shifts	1-6
Table 1-3 Change In Telecommunications Equipment Markets	1-8
Table 1-4 Response To Change In Telecommunications Equipment Markets	1-9
Table 1-5 Service Provider Build-Out Of The Next Generation 3G Systems	1-10
Table 1-6 Factors Impacting Build-Out Of 3G Wireless Infrastructure	1-11
Table 1-7 Factors Impacting Implementation Of 3G Wireless	1-12
Table 1-8 Wireless IP Network Benefits	1-16
Table 1-9 Key Benefits Of Multimedia Solutions	1-20
Table 1-10 Strategies To Improve Telecommunication Equipment Company Performance	1-23
Table 1-11 Top Ten Telecommunication Providers As Market Makers	1-28
Table 1-12 Top Ten Telecommunications Equipment Provider Market Strategies	1-29
Table 1-13 Top Ten Telecommunications Equipment Provider Strategies To Adapt To Changing Markets	1-30
Table 1-14 Marketing Globally	1-33
Table 1-15 Communications Networking Industry Trends	1-37
Table 1-16 Communications Networking Industry Environment	1-38

Table 1-17	1-39
Communications Networking Market Environment	
Table 1-18	1-40
Communications Networking Market Segments	
Table 1-19	1-41
Communications Networking Market Strategy	
Table 1-20	1-43
Telecommunications Broadband Market Growth Factors	
Table 1-21	1-44
Communications Industry Competitive Factors	
Table 1-22	1-48
Changing Telecommunication Market Conditions	
Table 1-23	1-50
Service Provider Market Characteristics	
Table 1-24	1-53
Infrastructure Market Factors	
Table 1-25	1-57
Shift From Separate Voice And Data Core Transmission Systems	

WIRELESS HANDSET MARKET SHARES AND MARKET FORECASTS

Table 2-1	2-2
Customization Of Telecommunications Infrastructure Equipment	
Table 2-2	2-4
Wireless Handset Market Driving Forces	
Table 2-3	2-8
Top Ten Communications Equipment Provider Shipments and Services, 2000 to 2004	
Figure 2-4	2-9
Indexed Sales Of Selected Leading Telecommunications Equipment Suppliers, 1993-2004	
Figure 2-5	2-10
Indexed Sales Of Selected Leading Telecommunications Equipment Suppliers, 2000-2004	
Table 2-6	2-11
Selected communications Company shipments, 1993-2004	
Figure 2-7	2-12
Worldwide Top Ten Telecommunications and Communications Equipment Company Market Segments, Shipments, Dollars, 2004	
Figure 2-8	2-13
Worldwide Top Ten Telecommunications and Communications Wireless Equipment Company Market Segments, 2004	
Table 2-9	2-14
Worldwide Top Ten Telecommunications and Communications Wireless Handsets, Wireless Infrastructure, Wireline, and Enterprise Telecommunications Shipment Forecast By Segment, Dollars, 2005-2010	
Table 2-10	2-15
Worldwide Telecommunications and Communications Wireless Handsets, Wireless Infrastructure, Wireline, and Enterprise Telecommunications Shipment Forecast By Segment, Dollars, 2005-2010	
Figure 2-11	2-17
Worldwide Telecommunications and Communications Total Equipment Market Forecasts, Shipments, Dollars, 2005-2010	
Table 2-12	2-18
Worldwide Telecommunications and Communications Wireless Handsets and Equipment Shipment Forecast By Segment, Dollars, 2005-2010	

Figure 2-13	2-19
Worldwide Wireless Handset Market Forecasts, Shipments, Dollars, 2005-2010	
Table 2-14	2-20
Principal Competitive Factors In Telecommunication Markets	
Table 2-15	2-28
Issues Relating To Change Brought By Broadband Communications	
Figure 2-16	2-30
Top Ten Telecommunications and Communications Equipment Provider Market Shares, 2004	
Table 2-17	2-31
Worldwide Top Ten Telecommunications and Communications Equipment Provider Shipments By Segment, Percent, 2004	
Table 2-18	2-32
Worldwide Top Ten Telecommunications and Communications Equipment Provider Shipments By Segment, Dollars, 2004	
Figure 2-19	2-34
Worldwide Top Ten Service Provider Telecommunications and Communications Equipment Provider Market Segments, 2004	
Figure 2-20	2-35
Worldwide Service Provider Top Ten IP Telecommunications and Communications Equipment Provider Market Segments, 2004	
Figure 2-21	2-37
Worldwide Enterprise Top Ten IP Telecommunications and Communications Equipment Provider Market Segments, 2004	
Figure 2-22	2-38
Worldwide Wireless Infrastructure Top Ten Telecommunications and Communications Equipment Provider Market Segments, 2004	
Figure 2-23	2-40
Worldwide Wireless Handset Top Ten Telecommunications and Communications Equipment Provider Market Segments, 2004	
Figure 2-24	2-42
Nokia Communications Equipment Markets Segments, 2004	
Table 2-25	2-42
Nokia Shipments By Segments, Dollars, 2004	
Figure 2-26	2-43
Motorola Communications Equipment Markets Segments, 2004	
Table 2-27	2-44
Motorola Shipments By Segments, Dollars, 2004	
Figure 2-28	2-45
Siemens Communications Equipment Markets Segments, 2004	
Table 2-29	2-45
Siemens Shipments By Segments, Dollars, 2004	
Figure 2-30	2-46
Alcatel Communications Equipment Markets Segments, 2004	
Table 2-31	2-47
Alcatel Shipments By Segments, Dollars, 2004	
Figure 2-32	2-48
NEC Communications Equipment Markets Segments, 2004	
Table 2-33	2-49
NEC Shipments By Segments, Dollars, 2004	
Figure 2-34	2-50
Ericsson Communications Equipment Markets Segments, 2004	

Table 2-35	2-51
Ericsson Shipments By Segments, Dollars, 2004	
Figure 2-36	2-52
Nortel Communications Equipment Markets Segments, 2004	
Table 2-37	2-53
Nortel Shipments By Segments, Dollars, 2004	
Figure 2-38	2-54
Cisco Communications Equipment Markets Segments, 2004	
Table 2-39	2-55
Cisco Shipments By Segments, Dollars, 2004	
Figure 2-40	2-56
Lucent Communications Equipment Markets Segments, 2004	
Table 2-41	2-57
Lucent Shipments By Segments, Dollars, 2004	
Figure 2-42	2-58
Fujitsu Communications Equipment Markets Segments, 2004	
Table 2-43	2-59
Fujitsu Shipments By Segments, Dollars, 2004	
Figure 2-44	2-60
Huawei Communications Equipment Markets Segments, 2004	
Table 2-45	2-61
Huawei Shipments By Segments, Dollars, 2004	
Figure 2-46	2-62
Avaya Communications Equipment Markets Segments, 2004	
Table 2-47	2-63
Avaya Shipments By Segments, Dollars, 2004	
Figure 2-48	2-64
Nokia Communications Equipment Regional Markets, 2004	
Table 2-49	2-64
Nokia Shipments By Region, Dollars, 2004	
Figure 2-50	2-65
Motorola Communications Equipment Regional Markets, 2004	
Table 2-51	2-66
Motorola Shipments By Region, Dollars, 2004	
Figure 2-52	2-67
Siemens Regional Communications Equipment Market Participation, 2004	
Table 2-53	2-67
Siemens Shipments By Region, Dollars, 2004	
Figure 2-54	2-68
Alcatel Regional Communications Equipment Market Participation, 2004	
Table 2-55	2-69
Alcatel Shipments By Region, Dollars, 2004	
Figure 2-56	2-70
NEC Regional Communications Equipment Market Participation, 2004	
Table 2-57	2-70
NEC Shipments By Region, Dollars, 2004	
Figure 2-58	2-71
Ericsson Regional Communications Equipment Market Participation, 2004	
Table 2-59	2-72
Ericsson Shipments By Region, Dollars, 2004	
Figure 2-60	2-73
Nortel Regional Communications Equipment Market Participation, 2004	

Table 2-61	2-73
Nortel Shipments By Region, Dollars, 2004	
Figure 2-62	2-74
Cisco Regional Communications Equipment Market Participation, 2004	
Table 2-63	2-75
Cisco Shipments By Region, Dollars, 2004	
Figure 2-64	2-76
Lucent Regional Communications Equipment Market Participation, 2004	
Table 2-65	2-76
Lucent Shipments By Region, Dollars, 2004	
Figure 2-66	2-77
Fujitsu Regional Communications Equipment Market Participation, 2004	
Table 2-67	2-78
Fujitsu Shipments By Region, Dollars, 2004	
Figure 2-68	2-79
Huawei Regional Communications Equipment Market Participation, 2004	
Table 2-69	2-79
Huawei Shipments By Region, Dollars, 2004	
Figure 2-70	2-80
Avaya Communications Equipment Market Segments, 2004	
Table 2-71	2-81
Avaya Shipments By Region, Dollars, 2004	
Table 2-72	2-82
Wireless Handset Market Driving Forces	
Figure 2-73	2-83
Wireless Handset Market Shares, By Units Shipped, 2004	
Table 2-74	2-84
Wireless Handset Market Shares, By Units Shipped, 2004	
Figure 2-75	2-85
Wireless Handset Market Shares, By Dollar, 2004	
Table 2-76	2-86
Wireless Handset Market Shares, By Dollar, 2004	
Figure 2-77	2-88
Worldwide 2G Wireless Handset Market Forecasts, Users, 2004-2011	
Figure 2-78	2-89
Worldwide 2.5G Wireless Handset Market Forecasts, 2004-2011	
Figure 2-79	2-90
Worldwide 3G Wireless Handset Market Forecasts, Users, 2004-2011	
Figure 2-80	2-91
Worldwide Wireless Handset Market Forecasts, Total Users, 2004-2011	
Table 2-81	2-92
Worldwide 2G, 2.5G, and 3G Market Forecasts, Users, 2004-2011	
Figure 2-82	2-93
Worldwide 2G Wireless Handset Market Forecasts, Dollars, 2004-2011	
Figure 2-83	2-94
Worldwide 2.5G Wireless Handset Market Forecasts, Dollars, 2004-2011	
Figure 2-84	2-95
Worldwide 3G Wireless Handset Market Forecasts, Dollars, 2004-2011	
Figure 2-85	2-96
Worldwide Wireless Handset Market Forecasts, Total Dollars, 2004-2011	
Table 2-86	2-97
Worldwide 2G, 2.5G, and 3G Market Forecasts, Dollars, 2004-2011	

Figure 2-87	2-98
Worldwide Wireless Standards Global Users and Market Shares, 2004	
Table 2-88	2-99
Worldwide Wireless Standards Global Users and Market Shares, 2004	
Figure 2-89	2-100
Worldwide Wireless Handset Technology Breakdown: 2G, 2.5G, 3G; 2004	
Figure 2-90	2-101
Worldwide Wireless Handset Technology Breakdown: 2G, 2.5G, 3G; 2004	
Table 2-91	2-102
Worldwide 2G, 2.5G, and 3G Market Forecasts, Units, 2004-2011	
Table 2-92	2-103
Worldwide 2G, 2.5G, and 3G Market Forecasts, Dollars, 2004-2011	
Table 2-93	2-105
Wireless Subscriber Market Penetration, 2000-2004	
Table 2-94	2-107
Wireless Subscriber Market Penetration, Forecasts, 2004-2011	
Table 2-95	2-141
Worldwide GSM, CDMA, WCDMA, and TDMA Market Forecasts, Users, 2004-2011	
Table 2-96	2-142
Wireless Handset Shipments By Region, Number Of Units, 2004	
Table 2-97	2-143
Wireless Handset Shipments By Region, Units, Percent, 2004	
Table 2-98	2-144
Wireless Handset Shipments By Region, Percent, 2004	
Table 2-99	2-145
Wireless Handset Shipments By Region, Dollars, 2004	
Table 2-100	2-146
Wireless Handset Shipments By Region, Dollars, 2004	
Table 2-101	2-147
Wireless Handset Shipments By Region, Dollars, 2004	
Table 2-102	2-148
Wireless Handset Shipments By Region, Dollars, Percent, 2005-2011	
Table 2-103	2-148
Wireless Handset Shipments By Region, Dollars, 2005-2011	
Table 2-104	2-149
Wireless Handset Shipments By Region, Units, Percent, 2005-2011	
Table 2-105	2-149
Wireless Handset Shipments By Region, Units, 2005-2011	

WORLDWIDE WIRELESS HANDSET DESCRIPTIONS

Table 3-1	3-2
Nokia Wireless Handset Positioning	
Table 3-2	3-5
Nokia 6620 Features	
Table 3-3	3-6
Nokia 6620 Features	
Table 3-4	3-8
Nokia 6620 Connectivity Features	
Table 3-5	3-10
Nokia 6620 Specifications	

Table 3-6	3-14
MOTO RAZR V3 Phone Features	
Table 3-7	3-15
Motorola MPx220 Handset Features	
Table 3-8	3-17
Motorola Mobile Telephone Features	
Table 3-9	3-24
Key Features Of The Samsung p777	

WORLDWIDE WIRELESS HANDSET TECHNOLOGY

Table 4-1	4-11
IP Wireless Transport Advantages	
Table 4-2	4-25
Benefits of Push to Talk	

WORLDWIDE WIRELESS HANDSET COMPANY PROFILES

Table 5-1	5-5
Alcatel Market Issues	
Table 5-2	5-6
Alcatel Positioning To Address Carrier Issues	
Table 5-3	5-7
Alcatel Strategic Network Focus	
Table 5-4	5-8
Alcatel Data Networks Positioning	
Table 5-5	5-23
Alcatel Metro DWDM Positioning	
Table 5-6	5-25
Alcatel Terrestrial Optical Networking Strategy	
Table 5-7	5-27
Avaya Product Offerings	
Table 5-8	5-29
Avaya Product Portfolio	
Table 5-9	5-44
Cisco / Linksys Business Use Of Products To Enhance Productivity	
Table 5-10	5-69
Intel Wireless Hotspot Installations	
Table 5-11	5-113
Nortel Voice Over IP Benefits	
Table 5-12	5-115
Nortel Voice Over IP VoIP Technologies	
Table 5-13	5-119
Nortel Voice Over IP Benefits	

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:

Worldwide Wireless Handset Market
Opportunities, Strategies, and Forecasts
2005-2011

-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 # SH29821417

402 PAGES

160 TABLES AND FIGURES

2005

\$2,800