

Wireless Handset Market Shares, Market Opportunities, Market Strategies, and Market Forecasts 2003 to 2008

Wireless Handset Market Assessment



Do Not Let Lack of Knowledge Cloud Your Mind

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

CHECK OUT THESE KEY TOPICS

Mobile Handset Functionality,
Desktop PC As a High Speed Wireless Device,
WIRELESS HANDSET MARKET POSITIONING FACTORS
BLUETOOTH CHIP MARKET,
ISSUES RELATING TO WIRELESS HANDSET TECHNOLOGY,
IMPACT OF TEXT MESSAGING,
KEY AND EVOLVING TECHNOLOGIES

Wireless Handset Market Shares, Market Opportunities, Market Strategies, and Market Forecasts 2003 to 2008

Creation of a mobile society creates a market-defining role for wireless Internet. Information follows the individual, not the other way around in a mobile society. Wireless handsets are positioned at the forefront of the mobile society, providing connectivity potentially from anywhere, at any time, and in any place. Internet connectivity is being generated by an open operating system for wireless handsets.

Wireless handset strategy relates to supporting basic voice communication while combining a data-networking portfolio with video and picture capability. Combined audio, photograph transmission and voice transmission capability permit increased business and leisure productivity. Wireless handsets represent a significant development in wireless network systems because advanced architectures let developers create applications that work across multiple wireless handset platforms. Integrated, multiservice, next generation networks are based on wireless handset operating systems (OS) capability.

Wireless handset shipments promise to rise rapidly. Users will not replace handsets every year. Some users will begin to have more than one handset. High-end sets may be used for business purposes while other sets are used for entertainment and personal uses. Workers at Nokia are already doing this, leading the market.

Total wireless handset low-end wireless device markets are poised for rapid growth. This market is expected to continue to be a significant part of the communications market growth as people seek to achieve the efficiencies and convenience offered by portable communications. Figure ES -6 shows that unit shipments of wireless handset systems at 375.4 million in 2002 are expected to reach 486.9 million units by 2007.

Companies Profiled

Alcatel
Cisco Systems
Ericsson
Fujitsu
Lucent Technologies
Motorola
NEC
Nokia
Nortel
Siemens

REPORT METHODOLOGY

THIS IS THE ONE-HUNDRED SIXTY SEVENTH REPORT IN A SERIES OF MARKET RESEARCH REPORTS THAT PROVIDE FORECASTS IN COMMUNICATIONS, TELECOMMUNICATIONS, THE INTERNET, COMPUTER, SOFTWARE, OR 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

Wireless Handset Market Shares, Market Opportunities, Market Strategies, and Market Forecasts 2003 to 2008

Table of Contents

WIRELESS HANDSET EXECUTIVE SUMMARY		ES-1
Worldwide Wireless Communications Market Driving Forces		ES-2
Wireless Handset Go To Market Strategies		ES-4
Impact Of Voice Packet Architecture		ES-4
Mobile Handset Market Shares		ES-5
Wireless Handset Market Forecasts		ES-7
Wireless Handset Unit Shipment Analysis		ES-8
Wireless Handset 3G Market Forecasts		ES-12
Wireless Handset OS Market Shares		ES-14
Short Messaging (SMS) and Instant Messaging (IM) Forecasts		ES-17
Wireless Subscriber Market Forecasts		ES-19
1. WIRELESS HANDSET MARKET DESCRIPTION		1-1
1.1 Challenging Year		1
1.1.1 Lower Than Expected Consumer Demand		1
1.1.2 Market Issues		2
1.2 Wireless Handset Market Trends		3
1.2.1 Wireless Handset Market Positioning Factors		3
1.2.2 Wireless Handset Company Positioning Factors		4
1.2.3 Wireless Handset Competitive Positioning Factors		5
1.2.4 Wireless Internet		6
1.2.5 Desktop PC As a High Speed Wireless Device		7
1.2.6 Teenagers Prefer Multiple Devices		7
1.3 Market Dynamics		7
1.3.1 High-Speed Wireless Devices		8
1.4 Mobile Handset Functionality		8
1.5 Device Management		9
1.5.1 WAP		11
1.5.2 Business Drivers For Wireless Handset Device Management		14
1.6 Multimedia Messaging Solutions		15
1.6.1 Wireless Handset Competitive Factors		16
1.7 Wireless Markets		17
1.8 Strategic Alliances		20
2. WIRELESS HANDSET MARKET SHARES AND MARKET FORECASTS		2-1
2.1 Market Driving Forces for Wireless Services		1
2.2 Wireless Communications Market Trends		2
2.2.1 Convergence Means That Voice Becomes Data In The Wireless Network		2
2.3 Worldwide Wireless Communications Market Driving Forces		6
2.3.1 Wireless Handset Go To Market Strategies		8
2.3.2 Impact Of Voice Packet Architecture		8
2.4 Mobile Handset Market Shares		9
2.4.1 Samsung Electronics Embraces Symbian		14
2.4.2 Microsoft Wireless Strategy		15
2.4.3 Mobile Device Market Participants		16

2.5	Wireless Handset Market Forecasts	17
2.5.1	Wireless Handset Unit Shipment Analysis	17
2.5.2	Wireless Handset New and Replacement Unit Market Analysis	22
2.5.3	Wireless Handset Shipment Market Analysis, Dollars	25
2.5.4	Wireless Handset 3G Market Forecasts	27
2.5.5	Symbian.....	31
2.6	Global Wireless Penetration	32
2.6.1	Global Wireless Subscriber Regional Analysis	34
2.6.2	Global Wireless Subscriber Market Penetration Analysis	41
2.6.3	Global Wireless Subscriber Under Developed vs. Developed Region Analysis	47
2.7	Wireless Operating Systems	49
2.7.1	Symbian Shares Source Code.....	49
2.7.2	3G Systems Adoption.....	51
2.7.3	Wireless Handset OS Market Shares	52
2.8	Wireless Handset Applications	56
2.8.1	Applications And Services	59
2.8.2	Short Messaging (SMS) and Instant Messaging (IM) Forecasts	60
2.8.3	3G Valued Added Services.....	60
2.9	Wireless Subscriber Market Forecasts	63
2.9.1	Regional Analysis of Prepaid Customers	65
2.10	Bluetooth Chip Market.....	66
2.11	Global Wireless Devices	67
2.11.1	Wireless Regional Markets.....	67

3. WIRELESS HANDSET PRODUCT DESCRIPTION	3-1
--	------------

3.1	2.5G Products	1
3.2	3G Products	1
3.3	Nokia Handsets	3
3.3.1	Nokia-8910I Multimedia Messaging	3
3.3.2	NOKIA-8910 Titanium Case.....	7
3.3.3	Nokia 8890 Infrared Link.....	7
3.3.4	Nokia 8850 Infrared Link For Wireless Communication.....	8
3.3.5	Nokia 8210 Voice Dialing.....	10
3.3.6	Nokia 7650 Integrated Digital Camera.....	10
3.3.7	Nokia 7250 Scroll Key	14
3.3.8	Nokia 6800 Full Keyboard	16
3.3.9	Nokia 6650 Built-In Camera For Shooting Video.....	17
3.3.10	Nokia 6650 Handset For WCDMA and GSM networks	17
3.3.11	Nokia 6610 Java™ Applications.....	19
3.3.12	Nokia 6510 High-Resolution Display.....	21
3.3.13	Nokia 6310I Tri-Band Phone	21
3.3.14	Nokia 6310 Mobile Internet.....	22
3.3.15	Nokia 6100 Messages With MMS.....	22
3.3.16	Nokia 6090 Vehicle / Dashboard Device	23
3.3.17	Nokia 5510 CD-Quality Music	24
3.3.18	Nokia 5100 Protection Against Splashes, Dust, And Bumps	24
3.3.19	Nokia 3650 Multimedia Messaging Technology	25
3.3.20	Nokia 3150 Music Player.....	25
3.3.21	Nokia 3410 Download Games.....	26
3.3.22	Nokia 2100 Comfortable To Hold And Dial.....	26
3.3.23	Nokia 9210 IPSec VPN Client	27
3.3.24	Nokia 9210I IPSec VPN Client.....	27

3.3.25	Nokia And Sonera Advanced Mobile Services And Terminals In WCDMA 3G Network	28
3.3.26	Nokia 3650 Imaging Phone.....	28
3.3.27	Nokia THR880 Tetra Public Safety.....	29
3.4	Motorola's i.250 Wireless Platform.....	31
3.4.1	Motorola's 2.5G GSM / GPRS Wireless Platform	31
3.4.2	Motorola TETRA Handset, Styled Like a Cellular Phone	32
3.4.3	Motorola / Siemens 3G Handsets	33
3.4.4	Motorola i.300 Platform.....	35
3.5	Sony / Ericsson Handsets	35
3.5.1	Sony Ericsson Camera fer Wireless Handset	35
3.5.2	Sony Ericsson Polyphonic Ring Signals	36
3.5.3	Sony Ericsson Handset Games	36
3.5.4	Sony Ericsson Mobile Messaging.....	37
3.5.5	Sony Ericsson Full-Color Display	37
3.5.6	Sony Ericsson Picture Phonebook.....	39
3.5.7	Sony Ericsson T300 / T200.....	40
3.5.8	Sony Ericsson T300 Personalization Options	41
3.5.9	Sony Ericsson T61z	44
3.5.10	Sony Ericsson T68.....	46
3.6	Ericsson R300LX Handsets	50
3.6.1	Ericsson P800	52
3.6.2	Ericsson P800 Imaging & Messaging.....	53
3.7	Alcatel	55
3.7.1	Alcatel Low-End Handsets	55
3.7.2	Alcatel Mid Range Handsets	58
3.7.3	Alcatel High-End Handsets	58
3.7.4	Alcatel Advanced Messaging Features	59
3.8	NEC Handsets.....	59
3.8.1	NEC DigitalTalk NEX™ 2600	59
3.8.2	NEC DigitalTalk MAX 2100	61
3.8.3	NEC DigitalTalk 2000.....	65
3.8.4	NEC TalkTime MAX 920	67
3.9	Matsushita / Panasonic Mobile Communications Handsets	67
3.10	Sanyo Handsets	68
3.10.1	Sanyo SCP-5300.....	68
3.10.2	Sanyo SCP-4700.....	69
3.10.3	Sanyo SCP-4900.....	72
3.10.4	SCP-6200	75
3.10.5	Sanyo SCP-6400.....	78
3.11	Siemens Handsets	81
3.11.1	Siemens S55	81
3.11.2	Siemens SL45.....	82
3.11.3	Siemens SL42.....	83
3.11.4	Siemens S46.....	84
3.11.5	Siemens S40.....	84
3.11.6	Siemens S35i.....	84
3.11.7	Siemens ME45	85
3.11.8	Siemens M50	85
3.11.9	Siemens M46	86
3.11.10	Siemens M35i	86
3.11.11	Siemens CL50	86

3.11.12	Siemens C55.....	87
3.11.13	Siemens C45.....	88
3.11.14	Siemens C35i.....	88
3.11.15	Siemens A50.....	88
3.11.16	Siemens A40.....	89
3.11.17	Siemens A36.....	89
3.11.18	Siemens A35.....	90

4. WIRELESS HANDSET TECHNOLOGY 4-1

4.1	Issues Relating to Wireless Handset Technology	1
4.1.1	Risks Relating to Wireless Handset Technology.....	1
4.2	China Cellphone Radiation Law.....	2
4.3	Nokia Series 60 Software Platform.....	3
4.4	Impact Of Text Messaging.....	5
4.5	Wireless Applications And Services	8
4.5.1	24 Billion SMS Messages	9
4.5.2	MMS Messaging.....	9
4.5.3	Mobile Commerce.....	10
4.5.4	Transaction Messaging.....	11
4.5.5	Entertainment	11
4.5.6	Games	12
4.5.7	List Of Mobile Entertainment Functions.....	12
4.6	Corporate Applications.....	14
4.7	Networks And Applications.....	15
4.8	Key Technologies	17
4.8.1	Java Technology	18
4.9	Evolving Technologies	19
4.10	Standards Organizations.....	24
4.11	Mobile Web Services.....	24
4.12	Mobile Terminal Software Architecture	26
4.13	Platforms	28
4.14	Software Components	32
4.15	Development Tools	33
4.16	WCDMA	35
4.17	TETRA (Terrestrial Trunked Radio).....	36
4.18	EDGE Technology.....	36
4.19	Symbian Applications	38
4.20	Dynamic and Shared Memory VS. Static Memory	40
4.20.1	Shared Memory.....	40

5. WIRELESS HANDSET COMPANY PROFILES 5-1

5.1	Alcatel	1
5.1.1	Alcatel Acquisition Of Astral Point Communications.....	2
5.1.2	Alcatel Customers	3
5.1.3	Digitel (Philippines) / Alcatel.....	3
5.1.4	Sichuan Unicom (China) / Alcatel.....	3
5.1.5	Alcatel Fourth Quarter And Full Year 2001 Results	3
5.1.6	Response To Economic Decline.....	5
5.1.7	Alcatel Geographical Distribution Of Sales 2001	6
5.1.8	Alcatel Segment Analysis 2001	7
5.1.9	Business Analysis Of The Second Quarter Carrier Networking	12
5.1.10	e-Business	12
5.1.11	Alcatel Business Analysis Carrier Networking.....	13
5.1.12	Alcatel Optics.....	13

5.1.13	Alcatel e-Business.....	14
5.1.14	Alcatel Optronics 4th Quarter And Full Year 2001 Results.....	14
5.1.15	Alcatel Optronics.....	15
5.1.16	Alcatel Softswitches.....	15
5.1.17	Alcatel Integration.....	17
5.1	Cisco Systems.....	18
5.1.18	Cisco Systems Internet Positioning.....	18
5.1.19	Cisco Net Sales / Revenue.....	19
5.1.20	Stock Repurchase Program Expanded.....	24
5.1.21	Enterprise.....	24
5.1.22	Service Provider.....	25
5.1.23	Commercial.....	27
5.1.24	Cisco Routers.....	29
5.1.25	Cisco Switches.....	30
5.1.26	Cisco Access.....	30
5.1.27	Cisco Service Provider Packet Switching And Routing.....	31
5.1.28	Cisco IOS Software.....	32
5.1.29	Cisco Softswitch.....	33
5.1.30	Cisco Systems / Vida Networks.....	33
5.2	Ericsson.....	34
5.2.1	Ericsson Customers.....	35
5.2.2	Ericsson And Samsung.....	36
5.2.3	Cingular Wireless / Ericsson.....	37
5.2.4	Ericsson CDMA Systems.....	37
5.2.5	WLAN From Ericsson.....	38
5.2.6	Ericsson / Juniper EJM Mobile IP.....	39
5.2.7	Ericsson PBX.....	39
5.2.8	Ericsson Revenue 2001.....	40
5.2.9	Multi-Service Networks.....	42
5.2.10	Internet Applications.....	43
5.3	Fujitsu.....	43
5.3.1	Fujitsu Network Communications.....	44
5.3.2	Fujitsu Sonet.....	44
5.3.3	Fujitsu DWDM.....	45
5.3.4	Fujitsu Network Communications Optical Transport Solutions.....	46
5.3.5	Fujitsu Network Communications Revenue.....	47
5.3.6	Fujitsu FY2001 Third Quarter Financial Results.....	48
5.3.7	Services & Software.....	49
5.3.8	Information Processing.....	49
5.3.9	Telecommunications.....	50
5.3.10	Electronic Devices.....	50
5.3.11	Fujitsu Telecommunications Europe Limited.....	50
5.4	Lucent Technologies.....	51
5.4.1	Service Provider Networks.....	52
5.4.2	Lucent Technologies Strategic Positioning.....	53
5.4.3	Business Forces Driving Change For Lucent.....	54
5.4.4	Softswitch Market Forces.....	55
5.4.5	Softswitch Emergence.....	57
5.4.6	Lucent Softswitch / Level 3.....	57
5.4.7	Lucent Revenue.....	57
5.4.8	Lucent Sale Of Optical Fiber Business.....	64

5.4.9	Lucent Sale Of Manufacturing Operations.....	65
5.4.10	Agere	66
5.4.11	Regional Market Analysis	67
5.4.12	United States And Canada Telecommunications Markets	67
5.4.13	European Telecommunications Markets	67
5.4.14	Asia Pacific Region Telecommunications Markets	68
5.4.15	Chinese Telecommunications Markets	69
5.4.16	Caribbean And Latin America	69
5.4.17	Africa	70
5.4.18	Lucent Regional Revenues	70
5.4.19	Lucent Non-U.S. Operations.....	73
5.4.20	Lucent Bell Labs	74
5.4.21	Service Intelligent Network Architecture.....	75
5.4.22	Bell Labs Powers LambdaXtreme	78
5.4.23	Bell Labs-Developed Raman Amplification System.....	79
5.4.24	Bell Labs Flexent™ Mobility Server.....	79
5.4.25	Bell Labs Multilingual Text -to-Speech Systems	80
5.4.26	Bell Labs Nature Of Internet Traffic	81
5.4.27	Bell Labs Calculates Theoretical Limits Of Fiber Optic Communications.....	82
5.4.28	Bell Labs Software Enables Global Roaming Across All Wireless Networks	83
5.5	Motorola	84
5.5.1	Motorola China 5-Year Strategy.....	85
5.5.2	Wireless Internet Ecosystem.....	86
5.5.3	Motorola Integrated Communications Solutions	87
5.5.4	Motorola Cost Reduction Actions	88
5.5.5	Motorola Customers	89
5.5.6	Commercial, Government And Industrial Solutions Segment.....	89
5.5.7	Broadband Communications Segment	89
5.5.8	Semiconductor Products Segment.....	90
5.5.9	Motorola Revenue.....	91
5.5.10	Motorola 2001 Acquisitions	92
5.6	NEC	93
5.6.1	NEC Handsets	95
5.6.2	NEC Handset Customers	95
5.6.3	NEC Third Quarter Revenue Of The Fiscal Year Ending March 31, 2002	96
5.6.4	NEC Networks	96
5.6.5	NEC Solutions (America).....	103
5.7	Nokia	104
5.7.1	Nokia Networks	104
5.7.2	Nokia Customers	105
5.7.3	Nokia Mobile Phones	105
5.7.4	Open Mobile Architecture Initiative.....	106
5.7.5	Nokia Networks	106
5.7.6	Nokia Ventures Organization	107
5.7.7	Nokia Revenue	108
5.7.8	Nokia Broadband DSL.....	109
5.7.9	Nokia / Proximus	110
5.7.10	Smart Communications (Philippines) / Nokia	110
5.7.11	Orange(UK) / Nokia.....	110
5.7.12	Nokia Provider Partnerships	111
5.7.13	Nokia Revenue	111
5.7.14	Nokia Acquisitions.....	112

5.7.15	Nokia Joint Initiatives	113
5.8	Nortel	114
5.8.1	Strategies	114
5.8.2	Lines Of Business.....	114
5.8.3	Nortel Enterprise Solutions	115
5.8.4	Nortel Networks Realignment Plan	116
5.8.5	Nortel Reorganization	117
5.8.6	Nortel Networks Optical Networks	117
5.8.7	Nortel Networks Customers	118
5.8.8	Nortel Networks Open Optical Dense-Wavelength Division Multiplexing (DWDM) System 121	
5.8.9	IP-Ready Open Optical Interfaces	121
5.8.10	Nortel Networks Optical Packet Network Solution.....	122
5.8.11	IP Data Services	124
5.8.12	Sonet/SDH	124
5.8.13	Optical IP Network Backbones	125
5.8.14	Acquisitions.....	
	125	
5.8.15	Focus On Solutions.....	125
5.8.16	Nortel Revenues	126
5.8.17	Motorola / Nortel In Wireless Merger Talks	127
5.8.18	Nortel Networks / Sprint.....	129
5.8.19	Nortel Networks / Cingular.....	129
5.9	Siemens	130
5.9.1	Siemens Information And Communication Networks	130
5.9.2	Siemens Corporate.....	131
5.9.3	Reorganization Of Siemens Information And Communication Networks Group.....	132
5.9.4	Siemens Strategic Partnership With Quintus Corporation.....	133
5.9.5	HiPath Procenter Strategy	133
5.9.6	HiPath Enterprise Convergence Architecture	134
5.9.7	Siemens Surpass	134
5.9.8	Siemens Customers	135
5.9.9	Siemens Information And Communication Networks	136
5.9.10	Siemens U.S.....	
	136	
5.9.11	Siemens Global Leadership Positions.....	137
5.9.12	Information And Communication Networks (ICN).....	139
5.9.13	Siemens / Unisphere Solutions / Juniper.....	141
5.9.14	Juniper Acquisition of Unisphere Networks	141
5.9.15	Siemens ICN Positioning.....	142
5.9.16	Information And Communication Mobile (ICM).....	144
5.9.17	Motorola And Siemens.....	146
5.9.18	Siemens Revenue Fiscal 2000 And 2001	146

List of Tables and Figures

Table ES-1	ES-3
Principal Competitive Factors In Wireless Communications Markets	
Figure ES-2	ES-6
Worldwide Wireless Handset Market Shares, First Three Quarters 2002	
Figure ES-3	ES-8
Wireless Handset High 3G Segment Market Analysis and Forecasts, Units, 2002-2007	

Figure ES-4	ES-9
Wireless Handset Mid Range Segment Market Analysis and Forecasts, Units, 2002-2007	
Figure ES-5	ES-10
Wireless Handset Low End Segment Market Analysis and Forecasts, Units; 2002-2007	
Figure ES-6	ES-11
Total Wireless Handset Market Analysis and Forecasts, Units, 2002-2007	
Figure ES-7	ES-12
Symbian 3G Handset Device Market Forecasts, Units, 2002-2007	
Figure ES-8	ES-13
Symbian 3G Handset Device Market Forecasts, Dollars, 2002-2007	
Table ES-9	ES-16
SmartPhone Operating System Market Shares, Units, 2002-2007	
Figure ES-10	ES-18
Wireless Value Added Services Subscriber Analysis and Forecasts, Dollars, 2002-2007	
Table ES-11	ES-19
Wireless Server Subscriber Analysis and Forecasts, Number, 2002-2007	
Table 1-1	1-4
Wireless Handset Market Positioning Factors	
Table 1-2	1-5
Wireless Handset Competitive Positioning Factors	
Table 1-3	1-6
Wireless Handset Competitive Positioning Factors	
Table 1-4	1-9
Device Management Aspects	
Table 1-5	1-12
Device management Operations	
Table 1-6	1-13
Device Management Functionality	
Table 1-7	1-15
Open Standard For Device Management Functions	
Table 1-8	1-16
General Competitive Factors In Wireless Handset Markets	
Table 1-9	1-19
Key Aspects Of Wireless Migration	
Table 2-1	2-3
Changes In Communications Competitive Environment	
Table 2-2	2-4
Changes In Wireless Market Direction	
Table 2-3	2-5
Changes In Wireless Services Markets	
Table 2-4	2-7
Principal Competitive Factors In Wireless Communications Markets	
Figure 2-5	2-11
Worldwide Wireless Handset Market Shares, 2001	
Figure 2-6	2-12
Worldwide Wireless Handset Market Shares, First Three Quarters 2002	
Table 2-7	2-13
Wireless Handset Market Shares, 2001 and First Three Quarters 2002	
Table 2-8	2-16
Selected Mobile Device Operating System Market Participants, 2001	
Figure 2-9	2-18
Wireless Handset High 3G Segment Market Analysis and Forecasts, Units , 2002-2007	

Figure 2-10	2-19
Wireless Handset Mid Range Segment Market Analysis and Forecasts, Units, 2002-2007	
Figure 2-11	2-20
Wireless Handset Low End Segment Market Analysis and Forecasts, Units, 2002-2007	
Figure 2-12	2-21
Total Wireless Handset Market Analysis and Forecasts, Units, 2002-2007	
Table 2-13	2-22
Wireless Handset High, Medium, Low Segment Market Analysis and Forecasts, Units, 2002-2007	
Figure 2-14	2-23
Worldwide Wireless Handset New vs. Replacement Market, 2001	
Figure 2-15	2-24
Worldwide Wireless Handset New vs. Replacement Market, 2007	
Table 2-16	2-25
Wireless Handset New and Replacement Wireless Handset Market Analysis and Forecast, Units, 2002-2007	
Figure 2-17	2-26
Worldwide Wireless Handset Market Forecasts, Dollars, 2002-2007	
Table 2-18	2-27
Wireless Handset High, Medium, Low End Shipment Market Analysis and Forecasts, Dollars, 2002-2007	
Figure 2-19	2-28
Symbian 3G Handset Device Market Forecasts, Units, 2002-2007	
Figure 2-20	2-29
Symbian 3G Handset Device Market Forecasts, Dollars, 2002-2007	
Table 2-21	2-30
Wireless 3G Symbian Handset Shipment Market Analysis and Forecasts. Units and Dollars, 2002-2007	
Table 2-22	2-33
Wireless Subscriber Market Penetration, 2000-2002	
Figure 2-23	2-35
Worldwide Regional Wireless Handset Market Segments, 2002	
Table 2-24	2-36
Wireless Handset Regional Market Forecasts, Dollars, 2000-2002	
Table 2-25	2-37
Wireless Handset Regional Markets, Units Shipped, 2000-2002	
Figure 2-26	2-38
Worldwide Regional Wireless Handset Market Segments, 2007	
Table 2-27	2-39
Wireless Handset Regional Market Forecasts, Dollars, 2002-2007	
Table 2-28	2-40
Wireless Handset Regional Market Forecasts, Units, 2002-2007	
Figure 2-29	2-41
U.S. Wireless Subscriber Penetration Analysis and Forecasts, 2002-2007	
Figure 2-30	2-42
European Wireless Subscriber Penetration Analysis and Forecasts, 2002-2007	
Figure 2-31	2-43
Japanese Wireless Subscriber Penetration Analysis and Forecasts, 2002-2007	
Figure 2-32	2-44
Asia / Pacific / Oceania Wireless Subscriber Penetration Analysis and Forecasts, 2002-2007	
Figure 2-33	2-45
Wireless Subscriber Penetration Analysis and Forecast, Percent Penetration, 2002-2007	
Table 2-34	2-46
Wireless Subscriber Market Penetration, 2002-2007	
Table 2-35	2-48
Wireless Subscriber Market Penetration, Developed Countries, 2002-2007	

Table 2-36	2-49
Wireless Subscriber Market Penetration, Under Developed Countries, 2002-2007	
Table 2-37	2-55
Worldwide SmartPhone Operating System Market	
Table 2-38	2-56
SmartPhone Operating System Market Shares, Units, 2007	
Table 2-39	2-57
Wireless handsets Applications	
Figure 2-40	2-61
Wireless Value Added Services Subscriber Analysis and Forecasts, Number Subscribers, 2002-2007	
Figure 2-41	2-62
Wireless Value Added Services Subscriber Analysis and Forecasts, Dollars, 2002-2007	
Table 2-42	2-62
Wireless Value Added Services Subscriber Analysis and Forecasts, Dollars, 2002-2007	
Table 2-43	2-63
Wireless Services Subscriber Analysis and Forecasts, Numbers, 2002-2007	
Table 3-1	3-4
Nokia-8910I Phone Features	
Table 3-2	3-5
Nokia Call Management	
Table 3-3	3-8
Nokia 8850 Features	
Table 3-4	3-11
Nokia 7650 Features	
Table 3-5	3-13
Nokia 7650 Games	
Table 3-6	3-14
Nokia 7250 Features	
Table 3-7	3-36
T61d Built In Games	
Table 3-8	3-38
Sony Ericsson Handset Features	
Table 3-9	3-42
Sony Ericsson Handset Features	
Table 3-10	3-44
Sony Ericsson T61z Features	
Table 3-11	3-47
Sony Ericsson T68 Features	
Table 3-12	3-49
Sony Ericsson T68 Network features:	
Table 3-13	3-51
Ericsson R300LX Features:	
Table 3-14	3-54
140MB Memory Allocation	
Table 3-15	3-55
Ericsson P800 Games	
Table 3-16	3-56
Alcatel Low End Handset Key Features	
Table 3-17	3-57
Alcatel Handset Ancillary Functions	
Table 3-18	3-59
Alcatel Enhanced Messaging Service	

Table 3-19	3-60
NEC DigitalTalk NEX 2600 Features	
Table 3-20	3-62
NEC DigitalTalk MAX 2100 Features	
Table 3-21	3-65
NEC DigitalTalk 2000 Features	
Table 3-22	3-69
Sanyo SCP-4700 Features	
Table 3-23	3-72
Sanyo SCP-4900 Features	
Table 3-24	3-76
Sanyo SCP-6200 Features	
Table 3-25	3-78
Sanyo SCP-6400 Features	
Table 4-1	4-13
List Of Mobile Entertainment Functions	
Table 4-2	4-15
Software Building Blocks Of A Mobile Terminal	
Table 4-3	4-21
Wireless Handset Evolving Technologies	
Table 4-4	4-22
Wireless Handset Messaging Technologies	
Table 4-5	4-23
Wireless Handset Content Technologies	
Table 4-6	4-27
Browser Mobile Terminal Software Aspects	
Table 4-7	4-29
Mobile Terminal Platform Architecture Modules and Standards	
Table 4-8	4-32
Wireless Types of Messaging	
Table 5-1	5-16
Alcatel Softswitch Positioning	
Table 5-2	5-17
Alcatel Data Network Infrastructure Voice Components	
Table 5-3	5-40
Ericsson Strategic Positioning For PBX Markets	
Table 5-4	5-54
Business Forces Driving Change	
Table 5-5	5-55
Softswitch Market Issues	
Table 5-8	5-76
Service Intelligent Network Architecture Key Elements	
Table 5-9	5-87
Motorola Intelligence Everywhere Solutions	
Table 5-10	5-111
Nokia Provider Partnerships	
Table 5-11	5-118
Nortel Networks Acquisitions	
Table 5-12	5-119
Nortel Networks Customers	

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.

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:

**Wireless Handset Market Shares, Market Opportunities,
Market Strategies, and Market Forecasts 2003 to 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