

CHAPTER ONE: INTRODUCTION.....	1
STUDY GOALS AND OBJECTIVES.....	1
REASONS FOR THE STUDY.....	1
INTENDED AUDIENCE.....	2
TELEMEDICINE HARDWARE MANUFACTURERS .....	2
TELEMEDICINE SOFTWARE PROVIDERS.....	2
TELECOM AND NETWORKING COMPANIES .....	2
TELEMEDICINE SERVICE PROVIDERS .....	3
HEALTHCARE COMPANIES.....	3
HEALTH INSURANCE COMPANIES .....	3
SCOPE OF REPORT .....	3
METHODOLOGY AND INFORMATION SOURCES.....	4
ANALYSTS CREDENTIALS .....	4
RELATED BCC PUBLICATIONS .....	4
BCC ONLINE SERVICES.....	5
DISCLAIMER .....	5
CHAPTER TWO: SUMMARY.....	6
<i>SUMMARY TABLE FORECAST FOR THE GLOBAL TELEHOME AND</i>	
<i>TELEHOSPITAL MARKET, THROUGH 2015 (\$ MILLIONS)* .....</i>	6
<i>SUMMARY FIGURE FORECAST FOR THE GLOBAL TELEHOME AND</i>	
<i>TELEHOSPITAL SERVICE MARKET, 2009–2015 (\$ MILLIONS).....</i>	7
CHAPTER THREE: TELEMEDICINE OVERVIEW.....	8
STRUCTURE .....	8
<i>FIGURE 1 STRUCTURE OF A TELEMEDICINE NETWORK.....</i>	8
STRUCTURE (CONTINUED).....	9
KEY PLAYING FIELDS IN TELEMEDICINE.....	10
<i>FIGURE 2 WINNING IMPERATIVES FOR TELEMEDICINE</i>	
<i>(TELEHOME CARE, TELEHOSPITAL B2B, TELEHOSPITAL B2C).....</i>	11
MARKET DRIVERS .....	11
<i>FIGURE 3 TELEMEDICINE MARKET DRIVERS .....</i>	12
CHANGING HEALTHCARE PARADIGM: INEVITABLE NEED	
FOR TELEMEDICINE.....	12
Increasing Chronic Diseases .....	13
Complexity of the Healthcare Network.....	13
<i>FIGURE 4 TELEMEDICINE: KEY TO E-HEALTHCARE.....</i>	13
Rising Cost of Home Care .....	13
Increasing Number of Aging Patients Requiring Daily	
Care.....	14
Higher Spending on IT .....	14
Moving From Treatment to Early Intervention.....	14
NEED FOR BETTER CLINICAL OUTCOMES .....	15
GROWING INVESTMENTS IN TELEMEDICINE .....	15

TELEMEDICINE DRIVEN BY THE RISING E-HEALTHCARE MARKET .....	15
INCREASING FOCUS OF COMPANIES ON TELEMEDICINE AS A KEY MARKET DIFFERENTIATOR.....	15
IMPROVED TECHNOLOGY INFRASTRUCTURE SPURRING GROWTH IN TELEMEDICINE .....	16
ENTRY OF TIER I PLAYERS EXPANDING MARKET SCOPE .....	16
CENTRALIZED EHR AND EMR ARE DRIVING THE NEED FOR TELEMEDICINE.....	16
INCREASING ACCEPTANCE OF TELEMEDICINE BY PATIENTS .....	17
<i>FIGURE 5 INCREASING ACCEPTANCE OF TELEMEDICINE BY PATIENTS .....</i>	<i>17</i>
KEY CHALLENGES.....	17
<i>FIGURE 6 MAJOR CHALLENGES FACED BY TELEMEDICINE PROGRAMS (%).....</i>	<i>18</i>
<i>FIGURE 7 CHALLENGES IN TELEMEDICINE: ECONOMICS VERSUS CLINICAL OUTCOME .....</i>	<i>19</i>
TECHNICAL .....	19
FINANCIAL .....	20
Reimbursement.....	20
Reimbursement (Continued) .....	21
Government Funding for Telemedicine Programs.....	22
Companies Afraid of Lower Returns from Telemedicine.....	22
OPERATIONAL AND SOCIAL ISSUES .....	23
Training and Accreditation .....	23
Availability of Telecommunications Bandwidth .....	24
Market Awareness .....	25
LEGAL AND REGULATORY ISSUES .....	25
Device Safety and Effectiveness .....	25
Privacy .....	26
Practitioner and Facility Licensure .....	27
Medical Liability and Malpractice Issues.....	28
STANDARDS.....	28
TELEMEDICINE: MOVING UP IN THE VALUE CHAIN.....	29
<i>FIGURE 8 TELEMEDICINE: MOVING UP IN THE VALUE CHAIN.....</i>	<i>30</i>
TELEMEDICINE MARKET STRUCTURE OVERVIEW.....	30
<i>FIGURE 9 TELEMEDICINE MARKET STRUCTURE.....</i>	<i>31</i>
GLOBAL TELEHOME AND TELEHOSPITALS/CLINICS MARKET .....	31
<i>TABLE 1 FORECAST FOR THE GLOBAL TELEHOME AND TELEHOSPITAL MARKET, THROUGH 2015 (\$ MILLIONS)* .....</i>	<i>32</i>
GLOBAL TELEMEDICINE MARKET FORECAST BY GEOGRAPHY .....	32

<i>TABLE 2 FORECAST FOR TELEMEDICINE MARKET BY GEOGRAPHY, THROUGH 2015 (\$ MILLIONS)*</i> .....	32
GLOBAL TELEHOME MARKET BY GEOGRAPHY .....	33
<i>TABLE 3 FORECAST FOR THE GLOBAL TELEHOME MARKET BY GEOGRAPHY, THROUGH 2015 (\$ MILLIONS)*</i> .....	33
GLOBAL TELEHOSPITALS/CLINICS MARKET BY GEOGRAPHY .....	33
<i>TABLE 4 FORECAST FOR THE GLOBAL TELEHOSPITALS/CLINICS MARKET BY GEOGRAPHY, THROUGH 2015 (\$ MILLIONS)*</i> .....	33
<i>FIGURE 10 FORECAST FOR THE GLOBAL TELEHOME AND TELEHOSPITALS/CLINICS MARKET, 2009-2015 (\$ MILLIONS)*</i> .....	34
TELEMEDICINE: HARDWARE, SOFTWARE, AND SERVICES.....	34
<i>TABLE 5 FORECAST FOR THE TELEMEDICINE HARDWARE, SOFTWARE, AND SERVICE MARKET, THROUGH 2015 (\$ MILLIONS)*</i> .....	35
<i>FIGURE 11 TELEMEDICINE SERVICE MARKET</i> .....	36
TELEMEDICINE APPLICATIONS.....	37
<i>FIGURE 12 TELEMEDICINE APPLICATION MARKET</i> .....	38
TELEMEDICINE STAKEHOLDERS .....	38
<i>FIGURE 13 TELEMEDICINE STAKEHOLDERS MARKET STRUCTURE</i> .....	39
MARKET DYNAMICS.....	39
<i>FIGURE 14 CASH COWS IN TELEMEDICINE</i> .....	40
CHAPTER FOUR: TELEMEDICINE TECHNOLOGIES AND MARKETS.....	41
TELEMEDICINE TECHNOLOGIES .....	41
<i>FIGURE 15 MAPPING THE TECHNOLOGY VALUE CHAIN OF TELEMEDICINE</i> .....	42
INTEGRATED TELEMEDICINE: TOP OF THE VALUE CHAIN.....	42
<i>FIGURE 16 INTEGRATED TELEMEDICINE MODEL</i> .....	43
Complex Networks Demanding Standardization Across Integrated Telemedicine .....	44
Open-End Technology: The Key to Integrated Medicine.....	44
MOVING TOWARD MORE RELIABLE AND EFFECTIVE TELEMEDICINE TECHNOLOGIES .....	44
Factors Affecting Reliability of Telemedicine.....	45
Clinician Experience in Telemedicine.....	45
Imaging .....	45
Dermatology Applications .....	45
Audio Signals .....	45
LARGER USE OF IP-BASED CONVERGED NETWORKS IN TELEMEDICINE.....	45
OPTING FOR WEB- AND WIRELESS-BASED DISTRIBUTION.....	46

USE OF BOTH MULTIPURPOSE AND THERAPY-BASED EQUIPMENT .....	46
LOWERING THE COST OF TELEMEDICINE .....	46
INCREASING SPEED AND RELIABILITY OF DATA TRANSFER .....	47
Reduced Bandwidth Requirement .....	47
INCREASED USE OF WIRELESS TECHNOLOGIES IN TELEMEDICINE.....	47
VENDORS PREFER TO LEASE TELEMEDICINE EQUIPMENT .....	48
LAUNCHING MORE USER-FRIENDLY TECHNOLOGY .....	48
USING MORE COMPUTER-BASED DIAGNOSIS .....	48
MARKETS.....	49
GLOBAL TELEMEDICINE TECHNOLOGY: HARDWARE, SOFTWARE, AND TELECOM MARKET OVERVIEW .....	49
<i>TABLE 6 GLOBAL TELEMEDICINE TECHNOLOGY MARKET, THROUGH 2015 (\$ MILLIONS)*</i> .....	49
<i>TABLE 7 FORECAST FOR THE TELEHOME AND TELEHOSPITAL TECHNOLOGY MARKET, THROUGH 2015 (\$ MILLIONS)*</i> .....	50
Telehome Technology Market by Geography .....	50
<i>TABLE 8 TELEHOME TECHNOLOGY MARKET BY GEOGRAPHY, THROUGH 2015 (\$ MILLIONS)*</i> .....	50
Telehospital Technology Market by Geography .....	50
<i>TABLE 9 FORECAST FOR THE TELEHOSPITAL TECHNOLOGY MARKET BY GEOGRAPHY, THROUGH 2015 (\$ MILLIONS)*</i> .....	51
HARDWARE.....	51
Telemedicine Hardware Market Overview .....	51
Telemedicine Hardware Market by Geography .....	51
<i>TABLE 10 TELEMEDICINE HARDWARE MARKET BY GEOGRAPHY, THROUGH 2015 (\$ MILLIONS)*</i> .....	51
<i>TABLE 11 HARDWARE MARKET BY TELEHOME AND TELEHOSPITAL, THROUGH 2015 (\$ MILLIONS)*</i> .....	52
<i>TABLE 12 TELEMEDICINE PROGRAMS BY TECHNOLOGY*</i> .....	52
Home Care Hardware Market .....	53
<i>FIGURE 17 TELEMEDICINE HOME CARE UNITS (PERIPHERALS)</i> .....	53
Geographical Segments .....	53
<i>TABLE 13 TELEHOME HARDWARE MARKETS BY GEOGRAPHY, THROUGH 2015 (\$ MILLIONS)*</i> .....	54
Market Shares.....	54
<i>FIGURE 18 CURRENT HOME CARE UNIT MARKET SHARE IN TELEMEDICINE PROGRAMS (%)</i> .....	54
<i>FIGURE 18 (CONTINUED)</i> .....	55
Benchmarking Home Care Units.....	55
Telehospitals/Clinics Hardware Market.....	55

Geographical Segments .....	55
<i>TABLE 14 FORECAST FOR THE TELEHOSPITALS/CLINICS HARDWARE GEOGRAPHIC MARKET, THROUGH 2015 (\$ MILLIONS)*</i> .....	56
Equipment Segments.....	56
Videoconferencing Systems .....	56
Videoconferencing Units: Market Share .....	57
<i>FIGURE 19 CURRENT ROOM-BASED VIDEOCONFERENCE MARKET SHARE IN TELEMEDICINE PROGRAMS (%)</i> .....	57
<i>FIGURE 19 (CONTINUED)</i> .....	58
<i>FIGURE 20 CURRENT MARKET SHARE OF ROLL-ABOUT VIDEOCONFERENCE UNITS IN TELEMEDICINE PROGRAMS (%)</i> .....	58
<i>FIGURE 20 (CONTINUED)</i> .....	59
<i>FIGURE 21 CURRENT DESKTOP, LAPTOP, AND SET-TOP COMPUTER UNITS MARKET SHARE IN TELEMEDICINE PROGRAMS (%)</i> .....	59
<i>FIGURE 21 (CONTINUED)</i> .....	60
<i>FIGURE 22 CURRENT VIDEOPHONE MARKET SHARE IN TELEMEDICINE PROGRAMS (%)</i> .....	60
<i>FIGURE 22 (CONTINUED)</i> .....	61
Benchmarking Videoconferencing Units .....	61
Store-and-Forward Systems.....	61
Teleimaging Equipment: Market Share .....	62
<i>FIGURE 23 CURRENT TELEIMAGING EQUIPMENT MARKET SHARE IN TELEMEDICINE PROGRAMS (%)</i> .....	62
<i>FIGURE 23 (CONTINUED)</i> .....	63
Telepathological Equipment.....	63
Market Shares.....	63
<i>FIGURE 24 CURRENT TELEPATHOLOGICAL EQUIPMENT IN TELEMEDICINE PROGRAMS (%)</i> .....	64
SOFTWARE.....	64
Telemedicine Software Market Overview .....	65
<i>TABLE 15 FORECAST FOR THE TELEMEDICINE SOFTWARE MARKET FOR TELEHOME AND TELEHOSPITALS/CLINICS, THROUGH 2015 (\$ MILLIONS)*</i> .....	65
Telemedicine Software Market by Geography .....	66
<i>TABLE 16 FORECAST FOR THE TELEMEDICINE SOFTWARE GEOGRAPHIC MARKET, THROUGH 2015 (\$ MILLIONS)*</i> .....	66
Telehome Software Market by Geography .....	66
<i>TABLE 17 FORECAST FOR THE TELEHOME SOFTWARE MARKET BY GEOGRAPHY, THROUGH 2015 (\$ MILLIONS)*</i> .....	66
Telehospitals/Clinics Software Market by Geography .....	67

<i>TABLE 18 FORECAST FOR THE TELEHOSPITALS/CLINICS SOFTWARE MARKET BY GEOGRAPHY, THROUGH 2015 (\$ MILLIONS)*</i> .....	67
Benchmarking Telemedicine Software Companies.....	67
TELECOM AND NETWORKING .....	67
Telecom and Networking Market Overview.....	68
<i>TABLE 19 FORECAST FOR THE TELEMEDICINE TELECOM AND NETWORKING FOR TELEHOME AND TELEHOSPITALS/CLINICS, THROUGH 2015 (\$ MILLIONS)*</i> .....	68
Telecom and Networking Market by Geography.....	68
<i>TABLE 20 FORECAST FOR THE T&amp;N GEOGRAPHIC MARKET, THROUGH 2015 (\$ MILLIONS)*</i> .....	69
Telehome T&N Market by Geography .....	69
<i>TABLE 21 FORECAST FOR THE TELEHOME T&amp;N GEOGRAPHIC MARKET, THROUGH 2015 (\$ MILLIONS)*</i> .....	69
Telehospitals/Clinics T&N Market by Geography.....	69
<i>TABLE 22 FORECAST FOR THE TELEHOSPITALS/CLINICS T&amp;N GEOGRAPHIC MARKET FORECAST, THROUGH 2015 (\$ MILLIONS)*</i> .....	70
Market Shares .....	70
<i>FIGURE 25 CURRENT TELEMEDICINE PROGRAMS AND TELECOMMUNICATION PROVIDERS*</i> .....	70
<i>FIGURE 25 (CONTINUED)</i> .....	71
TELEMEDICINE PATENT ANALYSIS.....	71
GENERAL TRENDS.....	71
<i>FIGURE 26 U.S. TELEMEDICINE PATENTS, 2002-2010</i> .....	72
TRENDS BY TECHNOLOGY .....	72
<i>FIGURE 27 U.S. PATENTS ISSUED RELATING TO TELEMEDICINE, THROUGH OCTOBER 2010 (%)</i> .....	73
TELEMEDICINE SERVICES OVERVIEW .....	73
TELEHOME SERVICES .....	73
<i>FIGURE 28 TELEHOME SERVICES: MOVING UP IN THE VALUE CHAIN</i> .....	74
<i>FIGURE 29 TELEHOSPITAL B2B AND B2C SERVICES</i> .....	75
OPPORTUNITIES IN TELEMEDICINE SERVICES.....	75
Telemedicine Facility Management Services .....	76
Telemedicine Services Supporting E-health .....	76
Telemedicine Services Supporting Home Care .....	76
Interoperable Telemedicine Network Services.....	76
Telemedicine Virtual Network Providers Services .....	77
Mobile Emergency Services.....	77
Interface between Primary and Secondary Care .....	78
Primary Care Kiosk-Based Services Supporting Telemedicine.....	78

Telenursing Services .....	78
24/7 Telemedicine Call Center Services .....	79
Support for Outsourced Medical Services .....	79
Telemedicine Services for Disease Management .....	79
Telemedicine Managed Services for Rural Areas.....	80
Telehealth Education .....	81
Telemedicine-Based Niche Services.....	81
TELEMEDICINE SERVICE MARKET .....	81
TABLE 23 FORECAST FOR THE TELEMEDICINE SERVICE MARKET, THROUGH 2015 (\$ MILLIONS)*.....	82
TELEHOSPITAL SERVICES.....	82
TABLE 24 FORECAST FOR THE GLOBAL TELEHOSPITALS/CLINICS STORE-AND-FORWARD AND REAL- TIME VIDEOCONFERENCEING SERVICE MARKET, THROUGH 2015 (\$ MILLIONS)* .....	82
TABLE 25 FORECAST FOR THE GLOBAL TELEHOSPITAL STORE- AND-FORWARD SERVICES FOR THE RADIOLOGY, CARDIOLOGY, DERMATOLOGY, AND PATHOLOGY MARKET, THROUGH 2015 (\$ MILLIONS)* .....	83
TABLE 26 FORECAST FOR THE GLOBAL TELEHOSPITALS/CLINICS RADIOLOGY, PSYCHIATRY, AND URBAN AND RURAL MARKETS, THROUGH 2015 (\$ MILLIONS)* .....	84
CHAPTER FIVE: TELEMEDICINE APPLICATIONS .....	85
FIGURE 30 TELEMEDICINE APPLICATIONS: MARKET SIZEVERSUS PENETRATION.....	85
TELEMEDICINE APPLICATIONS OVERVIEW .....	85
FIGURE 31 TELEMEDICINE APPLICATIONS OVERVIEW.....	86
TELEMEDICINE APPLICATION MARKET.....	86
TABLE 27 FORECAST FOR GLOBAL TELEHOSPITALS/CLINICS STORE-AND-FORWARD AND VIDEOCONFERENCEING MARKET, THROUGH 2015 (\$ MILLIONS)*.....	87
FIGURE 32 FORECAST FOR THE GLOBAL TELEHOSPITALS/CLINICS STORE-AND-FORWARD AND VIDEOCONFERENCEING MARKET, 2009-2015 (\$ MILLIONS).....	87
TELEHOSPITALS/CLINICS STORE-AND-FORWARD TECHNOLOGY MARKET BY GEOGRAPHY .....	88
TABLE 28 FORECAST FOR THE TELEHOSPITALS/CLINICS STORE- AND-FORWARD TECHNOLOGY MARKET BY GEOGRAPHY, THROUGH 2015 (\$ MILLIONS)* .....	88
TELEHOSPITALS/CLINICS VIDEOCONFERENCEING TECHNOLOGY MARKET BY GEOGRAPHY .....	88
TABLE 29 FORECAST FOR THE TELEHOSPITALS/CLINICS VIDEOCONFERENCEING TECHNOLOGY MARKET BY GEOGRAPHY, THROUGH 2015 (\$ MILLIONS)* .....	89

TELEHOSPITALS/CLINICS VIDEOCONFERENCING TECHNOLOGY MARKET BY APPLICATION .....	89
<i>TABLE 30 FORECAST FOR THE GLOBAL TELEHOSPITALS/CLINICS STORE-AND-FORWARD MARKET BY APPLICATION, THROUGH 2015 (\$ MILLIONS)*</i> .....	89
<i>TABLE 31 GLOBAL FORECAST FOR TELEHOSPITALS/CLINICS REAL-TIME VIDEOCONFERENCING MARKET BY APPLICATION, THROUGH 2015 (\$ MILLIONS)*</i> .....	90
TELECARDIOLOGY .....	90
TELECARDIOLOGY MARKET OVERVIEW .....	91
<i>TABLE 32 FORECAST FOR THE GLOBAL TELEHOSPITALS/CLINICS TELECARDIOLOGY MARKET FOR STORE-AND-FORWARD AND VIDEOCONFERENCING TECHNOLOGY, THROUGH 2015 (\$ MILLIONS)*</i> .....	91
<i>FIGURE 33 FORECAST FOR THE GLOBAL TELEHOSPITALS/CLINICS TELECARDIOLOGY MARKET FOR STORE-AND-FORWARD AND VIDEOCONFERENCING TECHNOLOGY, 2009-2015 (\$ MILLIONS)</i> .....	92
Telecardiology: Store-and-Forward Market Overview.....	92
<i>TABLE 33 FORECAST FOR THE GLOBAL TELEHOSPITALS/CLINICS STORE-AND-FORWARD CARDIOLOGY TECH AND SERVICE MARKET, THROUGH 2015 (\$ MILLIONS)*</i> .....	93
<i>FIGURE 34 FORECAST FOR THE GLOBAL TELEHOSPITALS/CLINICS STORE-AND-FORWARD CARDIOLOGY TECHNOLOGY AND SERVICE MARKET, 2009 AND 2015 (\$ MILLIONS)</i> .....	93
Telecardiology: Videoconferencing Market Overview .....	94
<i>TABLE 34 FORECAST FOR THE GLOBAL TELEHOSPITAL VIDEOCONFERENCING FOR CARDIOLOGY TECHNOLOGY AND SERVICE MARKET, THROUGH 2015 (\$ MILLIONS)*</i> .....	94
Market Drivers .....	94
Healthcare Services Using Telecardiology for Early Detection of Abnormalities.....	94
Hospitals Outsourcing Cardiology Image Management to Specialists .....	94
Cardiac Patients Experience Higher Comfort Levels with Telecardiology .....	95
Larger Number of Cardiac Patients Monitored Remotely .....	95
Trends in Telecardiology .....	95
Telecardiology Usage for Pediatric Cardiology.....	95
Remote Monitoring and Post-Acute Care for Telecardiology .....	95



Supporting Image Handling in Telecardiology.....	95
Supporting ECG Transmission in Telecardiology .....	96
Increasing Use of Web-Based Interface for Telecardiology .....	96
Mobile Emergency Services Opting for Telecardiology .....	96
TELERADIOLOGY .....	97
<i>TABLE 35 GLOBAL FORECAST FOR THE TELEHOSPITALS/CLINICS STORE-AND-FORWARD RADIOLOGY TECHNOLOGY AND SERVICE MARKET, THROUGH 2015 (\$ MILLIONS)* .....</i>	<i>97</i>
<i>FIGURE 35 FORECAST FOR THE GLOBAL TELEHOSPITALS/CLINICS STORE-AND-FORWARD RADIOLOGY TECHNOLOGY AND SERVICE MARKET, 2009 AND 2015 (\$ MILLIONS).....</i>	<i>98</i>
RECENT DEVELOPMENTS .....	98
24-Hour Services by Teleradiology Companies .....	98
Development of Subspecialty Centers .....	98
Use of Filmless Imaging.....	99
Dartmouth Develops Low-Bandwidth Telesonography System .....	99
New Teleradiology Solution by Philips to Assist in Detection of Lung Lesions.....	99
TELEPATHOLOGY.....	99
<i>TABLE 36 FORECAST FOR THE GLOBAL TELEHOSPITAL STORE- AND-FORWARD PATHOLOGY TECHNOLOGY AND SERVICE MARKET, THROUGH 2015 (\$ MILLIONS)*.....</i>	<i>100</i>
<i>FIGURE 36 GLOBAL TELEHOSPITALS/CLINICS STORE-AND- FORWARD PATHOLOGY TECHNOLOGY AND SERVICE MARKET, 2009 AND 2015 (\$ MILLIONS).....</i>	<i>100</i>
RECENT TRENDS.....	101
Telepathology Helps Laboratories Increase Revenues by Leveraging Mutual Global Partnerships .....	101
Hospitals Reducing Pathological Cost and Increasing Promptness by Using Hybrid Systems.....	101
Ultrarapid Virtual Slide Processor and Dynamic Image Telepathology Improving Telepathology Effectiveness .....	101
TELEPSYCHIATRY .....	101
<i>TABLE 37 GLOBAL FORECAST FOR THE TELEHOSPITALS/CLINICS VIDEOCONFERENCING PSYCHIATRY TECHNOLOGY AND SERVICE MARKET, THROUGH 2015 (\$ MILLIONS)* .....</i>	<i>102</i>
<i>FIGURE 37 FORECAST FOR THE GLOBAL TELEHOSPITALS/CLINICS VIDEOCONFERENCING</i>	

<i>PSYCHIATRY TECHNOLOGY AND SERVICE MARKET, 2009 AND 2015 (\$ MILLIONS)</i> .....	103
DERMATOLOGY.....	103
DERMATOLOGY MARKET OVERVIEW .....	103
<i>TABLE 38 FORECAST FOR THE GLOBAL TELEHOSPITALS/CLINICS DERMATOLOGY TECHNOLOGY AND SERVICE MARKET, THROUGH 2015* (\$ MILLIONS)</i> .....	104
HOSPITALS: URBAN AND RURAL APPLICATIONS.....	104
<i>FIGURE 38 TELEHOSPITAL VIDEOCONFERENCING URBAN AND RURAL MARKET, 2009 AND 2015 (\$ MILLIONS)</i> .....	104
CHAPTER SIX: ECONOMICS OF TELEMEDICINE.....	105
BUSINESS MODELS.....	105
<i>FIGURE 39 OVERVIEW OF TELEMEDICINE REVENUE MODELS</i> .....	105
<i>FIGURE 40 BUSINESS MODELS OF TELEMEDICINE</i> .....	106
RISK AND REWARD SHARING MODEL .....	106
JOINT OPERATING MODEL.....	106
FACILITATOR MODEL.....	107
INTEGRATOR MODEL.....	107
SUBSCRIPTION-BASED SERVICE PROVIDER MODEL.....	107
PAY AS YOU GO.....	108
SHARED MODEL.....	108
COST-BENEFIT ANALYSIS .....	108
QUICK FACTS ON TELEMEDICINE.....	108
SAVINGS FROM REMOTE PATIENT MONITORING .....	109
REDUCED TRAVELING BY NURSES .....	109
<i>TABLE 39 SAVINGS FROM NURSES' TRAVELING COSTS</i> .....	109
SAVINGS FROM REHOSPITALIZATION.....	109
<i>TABLE 40 AVERAGE HOSPITALIZATION AND TELEHOME CARE COST (\$)</i> .....	110
CALL CENTER SAVINGS .....	110
COST COMPARISON: TELEMEDICINE AND NORMAL CONSULTATION .....	110
AVENUES INCREASING TOP-LINE REVENUES OF THE HOSPITAL.....	110
Added Specialist Billing .....	110
Added Remote Patients.....	111
Avoiding the Need for Transfer from Rural Hospitals.....	111
TELEMEDICINE: A COMPELLING BUSINESS CASE .....	111
GLOBAL HEALTHCARE HAS MAMMOTH SAVINGS BY TELEMEDICINE.....	111
HOME CARE MARKET INCREASINGLY ADOPTING TELEMEDICINE.....	111

TELECOM COMPANIES LARGELY SEEING TELEMEDICINE AS KEY MARKET DIFFERENTIATOR FOR THEMSELVES IN LONG RUN .....	112
E-HEALTH MARKET USING TELEMEDICINE AS THE PIVOTAL TECHNOLOGY .....	112
CHAPTER SEVEN: STAKEHOLDERS: OPPORTUNITIES ANALYSIS .....	113
TIER I PLAYERS.....	113
TIER I PLAYERS CONSOLIDATING IN THE TELEMEDICINE MARKET TO WIN THE LION'S SHARE OF THE FUTURE E-HEALTHCARE MARKET .....	113
HEALTHCARE COMPANIES: HOSPITALS, INSURANCE COMPANIES, CLINICS, GPS, AND DISEASE MANAGEMENT COMPANIES .....	113
Hospitals Will Use Telemedicine as a Key Differentiator .....	113
Rural Hospitals Will Not Lose Revenues .....	113
Annual Healthcare Management Programs for Patients, Non-Patients, and Families on Multiple Business Models.....	114
Specialists, General Practitioners, and Healthcare Companies from Low-Cost Countries Will See a Greater Demand for Outsourced Medical Healthcare Services .....	114
Clinics and Primary Care Consultants Will See a Significant Benefit from Telemedicine Toward Secondary Care Consultation .....	114
Healthcare Companies are Viewing Telemedicine as a Tool to Cut Healthcare Costs.....	114
Physicians Getting Ready for E-visits .....	115
Disease Management Companies Planning to Expand Telemedicine Network Beyond U.S.....	115
TELECOM AND NETWORK PLAYERS .....	115
Telecom and Networking Companies are Actively Participating in the Delivery of Global Telemedicine Services .....	115
Telecom Companies Supporting IP-Based High-Speed Data Transfer Networks .....	116
Telecom Companies Partnering with Disease Management Companies.....	116
TELEMEDICINE HARDWARE SUPPLIERS.....	116
Sales of More Reliable Portable Telemedicine Equipment Capturing Multiple Clinical Signals are Expected to Grow.....	116
Integrated Telemedicine is the Future of the Telemedicine Market .....	117

Subscription-Based Models Will Lead Other Telemedicine Models .....	117
Wireless Wearable Devices Will Find Increasing Application in Telemedicine .....	117
Teleradiology, Telecardiology, Telepathology, and Telepsychiatry Will Be the Top Four Applications.....	117
TELEMEDICINE SOFTWARE PROVIDERS .....	117
Software Companies Support Integrated Telemedicine with Open-End Architecture.....	117
TELEMEDICINE INTEGRATORS: TELEHOME AND TELEHOSPITAL .....	118
Telemedicine Integrators to Tap Families Ready to Spend for Convenience of Primary Healthcare .....	118
Telemedicine Plans for Multiple Distribution Channels .....	118
CHAPTER EIGHT: CONSOLIDATION AND OWNERSHIP TRENDS.....	119
TABLE 41 MERGER AND ACQUISITION FOR FISCAL YEARS, 2006 TO 2010 .....	119
TABLE 41 (CONTINUED).....	120
CHAPTER NINE: COMPANY PROFILES .....	121
TELEMEDICINE HARDWARE SUPPLIERS .....	121
AEROTEL MEDICAL SYSTEMS, LTD.....	121
CARDIOCOM .....	121
IBM HEALTHCARE AND LIFE SCIENCE .....	121
INTOUCH TECHNOLOGIES .....	122
MEDICAL INTERNATIONAL RESEARCH .....	122
MEDTRONIC, INC. ....	123
SIEMENS HEALTHCARE .....	123
ROCHE .....	124
TELEMEDICINE SOFTWARE PROVIDERS.....	124
ALLSCRIPTS .....	124
AGFA HEALTHCARE .....	125
IMETRIKUS.....	125
MEDIC4ALL.....	125
VAMSTEC .....	126
3M HEALTH INFORMATION SYSTEMS .....	126
VIDEOCONFERENCING COMPANIES .....	127
DOCTORS TELEHEALTH NETWORK .....	127
EUROMED NETWORKS .....	127
POLYCOM.....	128
TANDBERG .....	128
SONY .....	128
EMBLAZE-VCON .....	129
LIFESIZE COMMUNICATIONS.....	129

TELECOM PLAYERS .....	129
ALCATEL-LUCENT .....	129
AT&T .....	130
CISCO .....	130
VERIZON COMMUNICATIONS, INC. ....	131
TELEMEDICINE INTEGRATORS .....	131
AMD GLOBAL TELEMEDICINE, INC.....	131
AMERICAN TELECARE, INC.....	131
LIFEWATCH AG .....	132
CYBERNET MEDICAL CORPORATION .....	132
ROBERT BOSCH HEALTHCARE.....	133
HONEYWELL HOMMED .....	133
SHL TELEMEDICINE, LTD.....	134
VITERION TELEHEALTHCARE.....	134
VITEL, INC. ....	135
ZYDACRON.....	135
HOSPITALS.....	135
APOLLO HOSPITALS .....	135
JOHN HOPKINS MEDICINE.....	136
MASSACHUSETTS GENERAL HOSPITAL.....	136
KANSAS UNIVERSITY CENTER FOR TELEMEDICINE AND TELEHEALTH.....	137
UNIVERSITY OF PITTSBURGH MEDICAL CENTER.....	137
UNIVERSITY OF KENTUCKY CHANDLER HOSPITAL.....	137
CHAPTER TEN: CONCLUSIONS .....	138
TELEMEDICINE IS A KEY DECIDING FACTOR IN INCREASING COMPANIES' SHARE OF THE E-HEALTHCARE MARKET .....	138
TELEMEDICINE IS GAINING ACCEPTANCE .....	138
TELEMEDICINE WILL ONLY REALIZE ITS FULL MARKET POTENTIAL AFTER ITS FULL INTEGRATION WITH THE HEALTHCARE SYSTEM .....	138
DESPITE NO CLEAR POLICY ON REIMBURSEMENTS, HEALTHCARE PLAYERS ARE ACTIVELY PURSUING TELEMEDICINE .....	139
RELIABILITY IS THE KEY BUYING CRITERIA FOR TELEMEDICINE TECHNOLOGY.....	139
TELEMEDICINE OFFERS A POTENTIAL ONE-STOP SOLUTION FOR TELEHOME AND TELEHOSPITAL .....	139
TELEMEDICINE IS OPENING OPPORTUNITIES FOR ALL STAKEHOLDERS .....	140
APPENDIX I.....	141
TABLE 42 TELEMEDICINE PROGRAMS STUDIED.....	141
TABLE 42 (CONTINUED).....	142

<i>TABLE 42 (CONTINUED)</i> .....	143
<i>TABLE 42 (CONTINUED)</i> .....	144
<i>TABLE 42 (CONTINUED)</i> .....	145
<i>TABLE 42 (CONTINUED)</i> .....	146
<i>TABLE 42 (CONTINUED)</i> .....	147
<i>TABLE 42 (CONTINUED)</i> .....	148
<i>TABLE 42 (CONTINUED)</i> .....	149
<i>TABLE 42 (CONTINUED)</i> .....	150
<i>TABLE 42 (CONTINUED)</i> .....	151
<i>TABLE 42 (CONTINUED)</i> .....	152
<i>TABLE 42 (CONTINUED)</i> .....	153
<i>TABLE 42 (CONTINUED)</i> .....	154
<i>TABLE 42 (CONTINUED)</i> .....	155
<i>TABLE 42 (CONTINUED)</i> .....	156
<i>TABLE 42 (CONTINUED)</i> .....	157
<i>TABLE 42 (CONTINUED)</i> .....	158
<i>TABLE 42 (CONTINUED)</i> .....	159
APPENDIX II.....	160
<i>TABLE 43 ALLOWABLE SERVICES AND PROVIDER TYPES FOR     STATES PROVIDING MEDICAID REIMBURSEMENT FOR     TELEMEDICINE</i> .....	160
<i>TABLE 43 (CONTINUED)</i> .....	161
<i>TABLE 43 (CONTINUED)</i> .....	162
<i>TABLE 43 (CONTINUED)</i> .....	163
<i>TABLE 43 (CONTINUED)</i> .....	164
<i>TABLE 43 (CONTINUED)</i> .....	165
<i>TABLE 43 (CONTINUED)</i> .....	166
APPENDIX III.....	167
<i>TABLE 44 REIMBURSEMENT METHODS USED BY STATES     PROVIDING MEDICAID REIMBURSEMENT FOR TELEMEDICINE</i> ....	167
<i>TABLE 44 (CONTINUED)</i> .....	168
<i>TABLE 44 (CONTINUED)</i> .....	169
<i>TABLE 44 (CONTINUED)</i> .....	170
<i>TABLE 44 (CONTINUED)</i> .....	171
<i>TABLE 44 (CONTINUED)</i> .....	172
<i>TABLE 44 (CONTINUED)</i> .....	173
<i>TABLE 44 (CONTINUED)</i> .....	174
APPENDIX IV.....	175
ACRONYMS.....	175
ACRONYMS (CONTINUED) .....	176