

WINTERGREEN RESEARCH, INC.

**Worldwide Nanotechnology Dental Implant Market Shares,  
Strategies, and Forecasts, 2009 to 2015**

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**Dental Implants Serve the Aging Population Worldwide**

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*Picture by Susie Eustis*

**MOUNTAINS OF OPPORTUNITY**

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

[www.wintergreenresearch.com](http://www.wintergreenresearch.com)

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**CHECK OUT THESE KEY TOPICS**

**DENTAL IMPLANT**  
**DENTAL IMPLANT MARKET SHARES**  
**DENTAL IMPLANT MARKET FORECASTS**  
**PERSONAL HEALTH CARE**  
**INTEGRATED CHEMICAL AND BIOLOGICAL SENSORS**  
**OSSEOINTEGRATED DENTAL IMPLANTS**  
**DENTAL IMPLANT SOLUTION**  
**DENTAL IMPLANT MANUFACTURING**  
**DENTAL IMPLANT GOVERNMENT**  
**DENTAL IMPLANT HEALTHCARE**  
**DENTAL IMPLANT TELEMEDICINE**  
**DENTAL IMPLANT SECURITY**  
**VIDEO COLLABORATION**  
**INFOCOMMUNICATIONS**  
**DENTAL IMPLANT BY REGION**  
**DENTAL IMPLANT TCO**  
**DENTAL IMPLANT ROI**  
**Titanium Dental Implants**  
**Dental Implant Increases Patient Comfort**  
**Dental Implant Videoconferencing**  
**Dental Implant Cameras**  
**PECVD**  
**Silicon oxide**  
**Thin films**  
**Bacterial adhesion**  
**Dental prostheses**

*OPPORTUNITY ABOUNDS*

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

**Worldwide Nanotechnology Dental Implant Market Shares,  
Strategies, Forecasts, 2009-2015**

**LEXINGTON, Massachusetts (March 13, 2009) – WinterGreen Research announces that it has a new study on Worldwide nanotechnology dental implant markets. Worldwide dental implants are poised to achieve significant growth as patients become aware of the health benefits achieved from having viable teeth. Dental implants are in the category of optional surgery and represent the type of consumer spending that is postponed in challenging economic environments.**

**The companies participating in the dental implant market have found ways to manage infection, providing a higher implant success rate. Implantable devices are more stable in the mouth, permitting fewer dental implant failures. 69% of adults ages 35 to 44 have lost at least one permanent tooth to an accident, gum disease, a failed root canal, or tooth decay. By age 74, 26% of adults have lost all of their permanent teeth. With the number of Americans over 55 growing by 60% in the next 20 years there is plenty of U.S. market opportunity. The baby boomer generation buying power exceeds \$2 trillion in 2009.**

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## DENTAL IMPLANTS



Source: Zimmer.

The leading six dental implant manufacturers control of the market is based on the need for marketing in this segment, with Nobel Biocare holding the number one market position and Straumann holding a share of almost one-fifth and ranking as the firm number-two player. A large number of small manufacturers earlier accounting for a third of the market have shrunk to 14% of it.

Dental implant market innovations are those that position the vendor companies to meet aesthetic demands and increase clinician productivity. Positioning for profitable business patient care delivery can be challenging for clinicians.

Tooth loss, gum and bone disease affect millions of people worldwide, on every continent, in every age group. Globally, several hundred million people are missing one or more teeth. More than 40 million people are fully edentulous in the Western developed world. These numbers are substantially higher in Asia, Africa and other parts of the world.

Worldwide, weaknesses in the global economy and sagging consumer confidence have led to an unprecedented slowdown in the dental market. Reduced income has kept many patients away from the dentist. People with steady incomes fear losing their jobs and are not spending even if they can afford to. Elective procedures are being postponed.

General practitioners are tending to treat patients in house with conventional alternative treatments, rather than referring them for implant treatment, despite its superiority. Customers are reducing stocks. Dental labs are more hesitant to invest in dental equipment, such as CAD/CAM scanners.

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Tooth loss, gum and bone disease affect millions of people worldwide, on every continent, in every age group. Globally, several hundred million people are missing one or more teeth. More than 40 million people are fully edentulous in the Western developed world. These numbers are substantially higher in Asia, Africa and other parts of the world.

For 2008 the global dental implant market was 2.3 billion Euros. The market for crowns and bridges is 3 billion Euros. These estimates size the opportunity of the global restorative and esthetic dentistry market. Nobel Biocare is the clear market leader in this market.

The outlook for 2009 is one of a demanding market environment. Deteriorating economic conditions in most markets continue to impact dental implant markets because consumers have less discretionary income. Visibility in economic recovery time remains low.

### **Nanotechnology Impacts The Dental Implant Market**

One of the most active and important current areas of research and application of nanotechnology is in the field of life sciences and healthcare. Many industry and business analysts now expect nanotechnology to revolutionize the pharmaceutical, medical devices, diagnostics and imaging sectors with annual markets of billions of pounds likely within five-ten years.

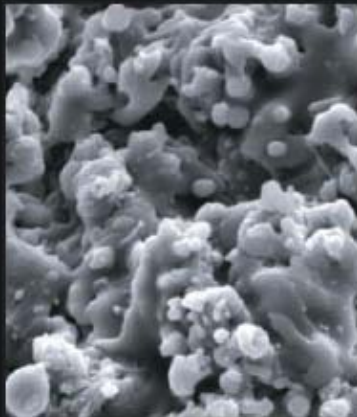
According to Susan Eustis, lead author of the study, "Nanotechnology has begun to impact the dental implant market in a dramatic manner. By increasing the complexity of the surface topography with the addition of nano-scale calcium phosphate (CAP) crystals new capabilities are available to clinicians. Surface topography plays a determinant role in the bone bonding phenomenon."

Through a discrete crystalline deposition (DCD™) Process in which nano-scale crystals of calcium phosphate are added to the BioMet 3i OSSEOTITE® Dual Acid Etched Surface, a topographic complexity at the sub-micron scale is established. Changes in the surface improve healing and represent dramatic breakthroughs in technology.

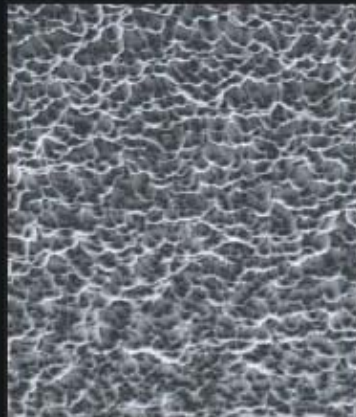
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**Biomet NanoTite™ Implant OSSEOTITE® Surface Images**



**HA Surface  
at 2000x magnification**



**NanoTite Surface  
at 2000x magnification**

Source: BioMet.

**Smaller market participants are active in their national markets and compete mainly on price, with limited investments in R&D, training, education, marketing and sales. In countries like Brazil, Russia and India these companies hold over 50% of the market. With the Internet evolving as a channel, larger participants gain market visibility and strategic advantage on return on investment for the dentist.**

**Expanding use of dental implants by dental surgeons and general practitioners indicates a growth market as soon as consumer confidence is stabilized.**

**Markets for dental implants at \$3.4 billion in 2008 are anticipated to reach \$8.1 billion by 2015, growing in response to demand for better teeth worldwide. The technology is achieving a maturity level that makes the implants last longer and work in a more reliable manner, stimulating demand from an aging population. This market is poised for rapid growth as soon as the global economy recovers. The technology is more mature, leading to implants that last longer.**

## Dental Implant Companies Profiled

### Dental Implant Market Leaders

Astra Tech  
Dentsply  
LVB / Biomet  
Nobel Biocare  
Straumann  
Zimmer

### Dental Implant Market Participants

Able Electropolishing  
Denics International  
Advantage Manufacturing Technologies  
AstraZeneca Group  
Autocam Medical  
DOT GmbH  
Implant Sciences  
Mack Molding  
OpenCell BioMed Inc. (OCBM)  
Orchid Orthopedic Solutions  
Orchid Keller  
Raymor  
Weldon School of Biomedical Engineering--Purdue  
Westlake Plastics Company

## Worldwide Dental Implant Market Shares, Strategies, and Forecasts, 2009-2015

### REPORT METHODOLOGY

THIS IS THE 405TH 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 PARTICIPANT 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 IS A CENTRAL PART OF THE STUDY. OUR RESEARCH INCLUDES ACCESS TO LARGE PROPRIETARY DATABASES. LITERATURE SEARCH INCLUDES ANALYSIS OF TRADE PUBLICATIONS, GOVERNMENT REPORTS, AND CORPORATE LITERATURE.

FINDINGS AND CONCLUSIONS OF THIS REPORT ARE BASED ON INFORMATION GATHERED FROM INDUSTRY SOURCES, INCLUDING MANUFACTURERS, DISTRIBUTORS, PARTNERS, OPINION LEADERS, AND USERS. INTERVIEW DATA WAS COMBINED WITH INFORMATION GATHERED THROUGH AN EXTENSIVE REVIEW OF INTERNET AND PRINTED SOURCES SUCH AS TRADE PUBLICATIONS, TRADE ASSOCIATIONS, COMPANY LITERATURE, AND ONLINE DATABASES. THE PROJECTIONS CONTAINED IN THIS REPORT ARE CHECKED FROM TOP DOWN AND BOTTOM UP ANALYSIS TO BE SURE THERE IS ONGRUECE FROM THAT PERSPECTIVE.

THE BASE YEAR FOR ANALYSIS AND PROJECTION IS 2008. WITH 2008 AND SEVERAL YEARS PRIOR TO THAT AS A BASELINE, MARKET PROJECTIONS WERE DEVELOPED FOR 2009 THROUGH 2015. THESE PROJECTIONS ARE BASED ON A COMBINATION OF A CONSENSUS AMONG THE PRIMARY CONTACTS COMBINED WITH UNDERSTANDING OF THE KEY MARKET DRIVERS AND THEIR IMPACT FROM A HISTORICAL AND ANALYTICAL PERSPECTIVE. THE ANALYTICAL METHODOLOGIES USED TO GENERATE THE MARKET ESTIMATES ARE BASED ON PENETRATION ANALYSES, SIMILAR MARKET ANALYSES, AND DELTA CALCULATIONS TO SUPPLEMENT INDEPENDENT AND DEPENDENT VARIABLE ANALYSIS.

**YOU MUST HAVE THIS STUDY**

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## Worldwide Nanotechnology Dental Implant Market Shares, Strategies, and Forecasts, 2009 to 2015

### Table of Contents

#### DENTAL IMPLANT EXECUTIVE SUMMARY

|  |             |
|--|-------------|
| <b>DENTAL IMPLANT EXECUTIVE SUMMARY</b>                                      | <b>ES-1</b> |
| Global Dental Implant Market   | ES-1        |
| Nanotechnology Impacts The Dental Implant Market                             | ES-3        |
| Dental Implant Market Driving Forces   | ES-4        |
| Innovation Drives Dental Implant Markets                                     | ES-9        |
| Dental Implant Market Trends   | ES-9        |
| Aging of the Population  | ES-11       |
| Dental Implant Market Shares   | ES-11       |
| Dental Implant Market Forecasts  | ES-13       |
| Dental Implant Market Forecasts Reflect Uncertainty<br>In The Global Economy | ES-15       |

#### DENTAL IMPLANT MARKET DESCRIPTION AND MARKET DYNAMICS

|  |            |
|--|------------|
| <b>1. DENTAL IMPLANT MARKET DESCRIPTION AND MARKET DYNAMICS</b>                  | <b>1-1</b> |
| 1.1 Dental Implant Definition  | 1-1        |
| 1.1.1 American Dental Association Recommended<br>Types Of Dental Implants        | 1-2        |
| 1.1.2 Dental Implant Longevity   | 1-2        |
| 1.1.3 Types of Dental Implants   | 1-4        |
| 1.1.4 Titanium Dental Implants   | 1-4        |
| 1.1.5 Root-Form Dental Implant   | 1-4        |
| 1.1.6 Ramus-Frame Dental Implant   | 1-5        |
| 1.1.7 Transosseous Dental Implant  | 1-5        |
| 1.1.8 Blade-Form Dental Implant  | 1-6        |
| 1.1.9 Types of Dental Implant Devices  | 1-6        |
| 1.2 Dental Implants Require Follow-Up Treatment                                  | 1-8        |
| 1.2.1 Poor Oral Health And Tooth Loss Associated<br>With Serious Health Problems | 1-9        |
| 1.2.2 Dental Implant Target Markets  | 1-10       |
| 1.3 Dental Implants  | 1-10       |
| 1.3.1 Small-Diameter Dental Implants<br>Increasingly Popular In the US           | 1-11       |
| 1.3.2 Clinical Research on Osseo-integrated Dental Implants                      | 1-11       |
| 1.3.3 Osseo-Integrated Dental Implants Placed In Bone                            | 1-12       |
| 1.3.4 Success Of Implants Attributed To Osseo-Integration                        | 1-12       |
| 1.3.5 Implant Failure Higher In Smokers  | 1-13       |
| 1.3.6 Proactive, Integrated, And Patient Centric Solutions                       | 1-13       |

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**DENTAL IMPLANT MARKET SHARES AND MARKET FORECASTS**

|   |            |
|---|------------|
| <b>2. DENTAL IMPLANT MARKET SHARES AND MARKET FORECASTS</b>   | <b>2-1</b> |
| 2.1 Dental Implant Market Driving Forces  | 2-1        |
| 2.1.1 Innovation Drives Dental Implant Markets  | 2-5        |
| 2.1.2 Dental Implant Market Trends  | 2-5        |
| 2.2 Aging of the Population   | 2-7        |
| 2.3 Dental Implant Market Shares  | 2-11       |
| 2.3.1 Nobel Biocare   | 2-14       |
| 2.3.2 Straumann   | 2-19       |
| 2.3.3 OpenCell BioMed (OCBM)  | 2-26       |
| 2.3.4 Zimmer  | 2-26       |
| 2.3.5 Zimmer Tapered Screw-Vent Implant   | 2-28       |
| 2.3.6 Astra Tech  | 2-28       |
| 2.3.7 Astra Tech Implant System   | 2-29       |
| 2.3.8 Biomet 3i NanoTite™ Surface   | 2-29       |
| 2.3.9 Dentsply  | 2-30       |
| 2.3.10 Dentsply Frialit Plus Surface Implants –<br>Prevention Instead Of Intervention For Esthetics | 2-31       |
| 2.4 Dental Implant Market Forecasts   | 2-32       |
| 2.4.1 Dental Implant Market Forecasts Reflect<br>Uncertainty In The Global Economy                  | 2-33       |
| 2.4.2 Dental CAD/CAM Shipments  | 2-37       |
| 2.4.3 Dental Regenerative Materials Market Forecasts  | 2-39       |
| 2.4.4 Dental Implant, CAD/CAM, Regenerative<br>Dentistry Shipments, Forecasts                       | 2-40       |
| 2.4.5 Digital Dentistry   | 2-45       |
| 2.4.6 Small Diameter Dental Implant Forecasts   | 2-46       |
| 2.5 Implant Porous Coatings   | 2-46       |
| 2.5.1 Orchid Orthopedic Solutions   | 2-46       |
| 2.6 Number of Root Canals   | 2-47       |
| 2.7 Dental Implant Return on Investment ROI Analysis  | 2-47       |
| 2.8 Dental Implant Regional Analysis  | 2-49       |
| 2.8.1 AstraTech in Japan  | 2-52       |
| 2.8.2 Dentsply Dental Implant Regional Positioning  | 2-53       |
| 2.8.3 Dentsply in the United States   | 2-54       |
| 2.8.4 Dentsply Europe   | 2-54       |
| 2.8.5 Dentsply All Other Regions  | 2-55       |
| 2.8.6 Nobel Biocare in Europe, Middle East and Africa   | 2-55       |
| 2.8.7 Nobel Biocare in North America  | 2-55       |
| 2.8.8 Nobel Biocare in Asia   | 2-55       |



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**DENTAL IMPLANT PRODUCT DESCRIPTION**

|  |            |
|--|------------|
| <b>3. DENTAL IMPLANT PRODUCT DESCRIPTION</b>   | <b>3-1</b> |
| 3.1 Nobel Biocare  | 3-1        |
| 3.1.1 Nobel Biocare NobelActive™ Dental Implant  | 3-4        |
| 3.1.2 Nobel Biocare NobelReplace™ Dental Prosthetic Flexibility  | 3-8        |
| 3.1.3 Nobel Biocare / ISI (Imaging Sciences International)<br>Treatment Planning Software Partnership              | 3-10       |
| 3.1.4 Nobel Biocare Digital Dentistry  | 3-10       |
| 3.1.5 Nobel Biocare Small Diameter Implants And<br>Orthodontic Mini Screws   | 3-24       |
| 3.1.6 Nobel Biocare Dental Implant Digital Dentistry   | 3-25       |
| 3.2 Straumann  | 3-26       |
| 3.3 Zimmer Dental Implants   | 3-37       |
| 3.3.1 Zimmer Tapered Screw-Vent Implant  | 3-38       |
| 3.3.2 Zimmer Tapered SwissPlus Implant   | 3-39       |
| 3.3.3 Zimmer AdVent implant  | 3-40       |
| 3.3.4 Zimmer Straight Screw-Vent Implant   | 3-40       |
| 3.3.5 Zimmer Fixture Mount/Transfer Packaging  | 3-40       |
| 3.3.6 Zimmer MTX® Selective Surface  | 3-40       |
| 3.3.7 Zimmer HA Selective Surface  | 3-41       |
| 3.3.8 Zimmer Self-Tapping Implants   | 3-41       |
| 3.3.9 Zimmer Snap® Delivery System   | 3-42       |
| 3.3.10 Zimmer MTX™ Surface   | 3-42       |
| 3.3.11 Zimmer MP-1® HA Surface   | 3-42       |
| 3.3.12 Zimmer Surface Options  | 3-45       |
| 3.3.13 Zimmer Histomorphometric Evaluations  | 3-47       |
| 3.4 Astra Tech   | 3-48       |
| 3.4.1 Astra Tech Implant System  | 3-48       |
| 3.4.2 Astra Tech Implant System Atlantis™ -<br>CAD/CAM Patient-Specific Abutments For All<br>Major Implant Systems | 3-59       |
| 3.4.3 Astra Tech Implant System Cresco™  | 3-59       |
| 3.4.4 Astra Tech 3D Visualization Of Patient Anatomy   | 3-61       |
| 3.4.5 Astra Tech Atlantis™ Patient-Specific Abutments  | 3-64       |
| 3.4.6 Astra Tech Nanotechnologies for<br>Life Sciences and Healthcare  | 3-65       |
| 3.4.7 Astra Tech Implant Performance Indicators  | 3-66       |
| 3.4.8 Astra Tech CAD/CAM Technology  | 3-66       |
| 3.4.9 Astra Tech Signs Dental Implant<br>Research Agreement with University of Zürich                              | 3-67       |
| 3.5 Biomet 3i NanoTite™ Surface  | 3-68       |
| 3.5.1 Biomet Microtopography Of The OSSEOTITE® Implant   | 3-68       |
| 3.5.2 Biomet Nanotechnology-Based Bone Bonding   | 3-71       |
| 3.5.3 Biomet NanoTite™ Certain® PREVAIL® Implant   | 3-71       |
| 3.5.4 Biomet 3i Innovations  | 3-72       |
| 3.5.5 Biomet 3i NanoTite™ Surface at 50,000X   | 3-72       |
| 3.5.6 Biomet NanoTite™ Tapered Prevail® Implant  | 3-73       |
| 3.5.7 Biomet Navigator™ System For CT Guided Surgery   | 3-73       |
| 3.5.8 Biomet Nano-Scale Calcium Phosphate (CaP) Crystals<br>Surface Complexity At The Sub-Micron Scale             | 3-73       |
| 3.5.9 Biomet 3i Navigator™ System -Instrumentation For<br>CT Guided Surgery  | 3-74       |
| 3.5.10 Biomet Resorbable Collagen Membrane   | 3-75       |
| 3.5.11 Biomet Research on How Blood Clot Attaches To An Implant  | 3-78       |

**REPORT # SH24052312      335 PAGES      132 TABLES AND FIGURES      2009**

**\$3,400 SINGLE COPY      \$6,800 WEB SITE POSTING**

|        |   |       |
|--------|---|-------|
| 3.5.12 | Biomet Contact Osteogenesis Optimizes Bone Healing  | 3-79  |
| 3.5.13 | Biomet Increased Bone/Implant Contact Human Histology   | 3-79  |
| 3.5.14 | BioMet NanoTite Implant Advantages  | 3-80  |
| 3.5.15 | Biomet 3i Innovations   | 3-85  |
| 3.6    | Dentsply  | 3-87  |
| 3.6.1  | Dentsply Frialit Plus Surface Implants –<br>Prevention Instead Of Intervention For Esthetics        | 3-91  |
| 3.6.2  | Dentsply Frialit Plus Stepped Implant Macro-Design  | 3-93  |
| 3.6.3  | Dentsply Frialit plus Stepped Implant Micro-Design  | 3-93  |
| 3.6.4  | Dentsply XiVE® plus Implants & XiVE® TG<br>plus Implants & Prosthetics                              | 3-96  |
| 3.6.5  | Dentsply Implant Placement  | 3-96  |
| 3.6.6  | Dentsply XiVE GraphicXiVE Plus  | 3-97  |
| 3.6.7  | Dentsply XiVE TG Transgingival Plus   | 3-98  |
| 3.6.8  | Dentsply Surface Design   | 3-100 |
| 3.6.9  | Dentsply XiVE TG GraphicXiVE TG Bar<br>Coping Offers Versatility when Fabricating Bar Constructions | 3-101 |
| 3.7    | OpenCell BioMed (OCBM)  | 3-102 |
| 3.8    | Coatings For Dental Implants  | 3-106 |
| 3.9    | Spire 3-106   |       |
| 3.10   | Orchid Orthopedic Solutions   | 3-106 |
| 3.11   | Bicon Short Dental Implants   | 3-107 |

**DENTAL IMPLANT TECHNOLOGY**

|                                     |   |            |
|-------------------------------------|---|------------|
| <b>4. DENTAL IMPLANT TECHNOLOGY</b> |   | <b>4-1</b> |
| 4.1                                 | Surface Treatments for Medical Applications   | 4-1        |
| 4.1.1                               | Coating and Surface Treatment   | 4-1        |
| 4.1.2                               | Ion Implantation  | 4-2        |
| 4.1.3                               | Ion Beam Texturing  | 4-2        |
| 4.1.4                               | Radiopaque Coatings   | 4-2        |
| 4.1.5                               | Conductive Metal Coatings   | 4-2        |
| 4.2                                 | Measuring The Thickness Of Polymer Films<br>On Medical Implants   | 4-3        |
| 4.2.1                               | Metal-On-Metal Implant Coating Advantages   | 4-3        |
| 4.3                                 | Implant Surgery Biomedical Bacterial Infection  | 4-6        |
| 4.3.1                               | Late-Stage Infections Caused By Bacterial<br>Spores Circulating In The Vascular System                                  | 4-7        |
| 4.3.2                               | Thin Coatings Can Be Applied To Biomedical<br>Devices With The Aim Of Providing Resistance To<br>Bacterial Colonization | 4-8        |
| 4.3.3                               | Silver Nanoparticle Based Antibiotic Approaches   | 4-9        |
| 4.3.4                               | Fabrication Of A Surface Layer Of Covalently<br>Immobilized Antibiotic Molecules  | 4-10       |
| 4.4                                 | Medthin Coating Products  | 4-12       |
| 4.5                                 | Astra Tech Follow-Up Research Summary Of The<br>Radiographic Data Showing An Average Bone Loss                          | 4-15       |
| 4.6                                 | Low Temperature Growth Of Thin Film Coatings For<br>The Surface Modification Of Dental Prostheses                       | 4-17       |
| 4.7                                 | Battery Technology for Dental Implants  | 4-24       |

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|       |   |      |
|-------|---|------|
| 4.7.1 | Battery Chemistries Technology                              | 4-25 |
| 4.8   | Breath Analyzers Detect Disease                             | 4-28 |
| 4.9   | Improving Biomaterials For Medical Implant Applications     | 4-29 |
| 4.9.1 | Bioactive Materials   | 4-30 |
| 4.9.2 | Forming A Chemical Bond With Bone                           | 4-31 |
| 4.9.3 | Bioactivity Increased Through Surface Modification          | 4-32 |
| 4.9.4 | Biofilms Multilayered Colonies Of Bacteria                  | 4-32 |
| 4.9.5 | Biofilm Formation   | 4-32 |
| 4.9.6 | Biofilms As A Major Contributor To Chronic Wounds           | 4-34 |
| 4.9.7 | Acute or Chronic Infection in Some Biomaterial Applications | 4-35 |
| 4.9.8 | Biomaterials Research                                       | 4-37 |

## DENTAL IMPLANT SERVER COMPANY PROFILES

|   |            |
|---|------------|
| <b>5. DENTAL IMPLANT COMPANY PROFILES</b>   | <b>5-1</b> |
| 5.1 Able Electropolishing   | 5-1        |
| 5.2 Advantage Manufacturing Technologies  | 5-1        |
| 5.3 AstraZeneca Group   | 5-1        |
| 5.3.1 AstraZeneca Revenue   | 5-3        |
| 5.3.2 AstraZeneca Group / Astra Tech  | 5-8        |
| 5.3.3 Astra Tech Revenue  | 5-9        |
| 5.3.4 Astra Tech Acquires Atlantis Components                                     | 5-11       |
| 5.3.5 Astra Tech Digital Technology and<br>CAD/CAM Scientific Program             | 5-11       |
| 5.3.6 Astra Tech acquires Astra Tech AB an Innovative<br>Dental CAD/CAM company   | 5-12       |
| 5.3.7 Astra Tech Acquires Its Japanese Distributor,<br>Denics International       | 5-13       |
| 5.4 Autocam Medical   | 5-14       |
| 5.5 Dentsply  | 5-14       |
| 5.5.1 Dentsply Dental Specialty Products  | 5-16       |
| 5.5.2 Dentsply New Products:  | 5-17       |
| 5.5.3 Dentsply International Revenue  | 5-18       |
| 5.5.4 Dentsply International Product and<br>Customer Revenue Segments Information | 5-19       |
| 5.5.5 Dentsply Market Segments  | 5-21       |
| 5.5.6 Dentsply Product Innovation   | 5-23       |
| 5.5.7 Dentsply United States  | 5-24       |
| 5.5.8 Dentsply Europe   | 5-24       |
| 5.5.9 Dentsply All Other Regions  | 5-24       |
| 5.6 DOT GmbH  | 5-25       |
| 5.7 Implant Sciences Corporation  | 5-25       |
| 5.8 LVB Acquisition / Biomet  | 5-27       |
| 5.8.1 Biomet acquired by Private Equity Consortium                                | 5-29       |
| 5.9 Mack Molding Co.  | 5-29       |
| 5.10 Nobel Biocare  | 5-29       |
| 5.10.1 Nobel Biocare Revenue  | 5-30       |
| 5.10.2 Nobel Biocare acquires Alpha-Bio Tec and Medicim                           | 5-33       |
| 5.10.3 Nobel Biocare Introduces Its New Implant NobelActive                       | 5-33       |
| 5.10.4 Nobel Biocare CAD/CAM-Based Dentistry                                      | 5-34       |
| 5.10.5 Nobel Biocare Standardized Product Facilities                              | 5-35       |
| 5.10.6 Nobel Biocare Regional Performance:  |            |

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|   |      |
|---|------|
| Increasingly Demanding Market Environment                       | 5-35 |
| 5.10.7 Nobel Biocare Revenue By Region                          | 5-38 |
| 5.10.8 Nobel Biocare Go-To-Market Approach                      | 5-39 |
| 5.10.9 Nobel Biocare Strategic Positioning                      | 5-40 |
| 5.11 OpenCell BioMed Inc. (OCBM)                                | 5-42 |
| 5.12 Orchid Orthopedic Solutions                                | 5-42 |
| 5.12.1 Orchid Keller  | 5-42 |
| 5.13 Raymor   | 5-44 |
| 5.14 Straumann  | 5-45 |
| 5.14.1 Straumann Market Share Gains in Europe and North America | 5-47 |
| 5.14.2 Straumann Innovation Pipeline                            | 5-49 |
| 5.14.3 Straumann Improves Efficiency And Market Share in 2008   | 5-51 |
| 5.14.4 Straumann Net Revenue                                    | 5-51 |
| 5.15 Weldon School of Biomedical Engineering--Purdue            | 5-52 |
| 5.16 Westlake Plastics Company                                  | 5-52 |
| 5.17 Zimmer   | 5-52 |
| 5.17.1 Zimmer Reports Fourth Quarter and 2008 Revenue           | 5-57 |
| 5.17.2 Zimmer Dental Implants                                   | 5-62 |
| 5.18 Selected Dental Implant Products and Companies             | 5-63 |

## List of Tables and Figures

### DENTAL IMPLANT EXECUTIVE SUMMARY

|  |       |
|--|-------|
| Table ES-1   | ES-2  |
| Dental Implant Market Innovations                                  |       |
| Figure ES-2  | ES-4  |
| Biomet NanoTite™ Implant OSSEOTITE® Surface Images                 |       |
| Table ES-2   | ES-6  |
| Dental Implant Sustainable Market Growth Drivers                   |       |
| Table ES-2 (Continued)   | ES-7  |
| Dental Implant Sustainable Market Growth Drivers                   |       |
| Table ES-3   | ES-8  |
| Dental Implant Market Driving Forces                               |       |
| Table ES-3 (Continued)   | ES-9  |
| Dental Implant Market Driving Forces                               |       |
| Figure ES-4  | ES-12 |
| Worldwide Dental Implant Shipments Market Shares,<br>Dollars, 2008 |       |
| Figure ES-5  | ES-15 |
| Worldwide Dental Implant Market Forecasts, Dollars,<br>2009-2015   |       |

REPORT # SH24052312      335 PAGES      132 TABLES AND FIGURES      2009

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**DENTAL IMPLANT MARKET DESCRIPTION AND MARKET DYNAMICS**

|  |      |
|--|------|
| Figure 1-1                               | 1-3  |
| Dental Implant Image                     |      |
| Table 1-2                                | 1-6  |
| Types of Dental Implant Devices          |      |
| Table 1-3                                | 1-7  |
| Dental Implant Surface Treatment Methods |      |
| Table 1-4                                | 1-7  |
| Dental Restorations Using Implants       |      |
| Table 1-5                                | 1-8  |
| Dental Implant Restoration Procedures    |      |
| Table 1-6                                | 1-10 |
| Dental Implant Target Markets            |      |

**DENTAL IMPLANT MARKET SHARES AND MARKET FORECASTS**

|  |      |
|--|------|
| Table 2-1  | 2-2  |
| Dental Implant Sustainable Market Growth Drivers                 |      |
| Table 2-1 (Continued)  | 2-3  |
| Dental Implant Sustainable Market Growth Drivers                 |      |
| Table 2-2  | 2-3  |
| Dental Implant Market Driving Forces                             |      |
| Table 2-2 (Continued)  | 2-4  |
| Dental Implant Market Driving Forces                             |      |
| Table 2-3  | 2-6  |
| Vendor Positioning Strengths                                     |      |
| Figure 2-4   | 2-8  |
| Dental Implant Market Opportunity                                |      |
| Table 2-5  | 2-9  |
| Clinicians, Surgeons Increasing Dental Implant Treatment Options |      |
| Figure 2-6   | 2-10 |
| Worldwide Dental Implant Treatment Rate                          |      |
| Figure 2-7   | 2-12 |
| Worldwide Dental Implant Shipments Market Shares, Dollars, 2008  |      |
| Table 2-8  | 2-13 |
| Worldwide Dental Implant Shipments Market Shares, Dollars, 2008  |      |
| Figure 2-9   | 2-15 |
| NobelBiocare NobelActive Implants                                |      |
| Figure 2-10  | 2-16 |
| Nobel BioCare Growth Drivers                                     |      |
| Table 2-11   | 2-17 |
| NobelBiocare Commercial Approach To Dental Implants              |      |
| Table 2-11 (Continued)   | 2-18 |
| NobelBiocare Commercial Approach To Dental Implants              |      |
| Table 2-12   | 2-19 |
| Straumann New-Generation Bone Level Implant Advances             |      |

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|   |      |
|---|------|
| Table 2-12 (continued)  | 2-20 |
| Straumann New-Generation Bone Level Implant Advances  |      |
| Figure 2-13   | 2-21 |
| Straumann Dental Market Positioning   |      |
| Figure 2-14   | 2-22 |
| Straumann Dental Tooth Replacement By Indication  |      |
| Table 2-15  | 2-25 |
| Straumann Product Innovation  |      |
| Figure 2-16   | 2-27 |
| Zimmer Dental Implants  |      |
| Figure 2-17   | 2-31 |
| Dentsply Implant System Provides Lasting Implants   |      |
| Figure 2-18   | 2-34 |
| Worldwide Dental Implant Market Forecasts, Dollars,<br>2009-2015                                      |      |
| Table 2-19  | 2-35 |
| Worldwide Dental CAD/CAM Shipment Forecasts, Dollars,<br>2009-2015                                    |      |
| Table 2-20  | 2-36 |
| Worldwide Dental Implant Shipments, Forecasts,<br>Units and Dollars, 2009-2015                        |      |
| Table 2-21  | 2-38 |
| Worldwide Dental CAD/CAM Shipments, Forecasts,<br>Dollars, 2009-2015                                  |      |
| Figure 2-22   | 2-39 |
| Worldwide Dental Regenerative Materials<br>Shipments, Dollars, 2009-2015                              |      |
| Table 2-23  | 2-40 |
| Worldwide Dental Implant, CAD/CAM,<br>Regenerative Dentistry Shipments, Forecasts, Dollars, 2009-2015 |      |
| Figure 2-24   | 2-41 |
| Worldwide Dental Implant, CAD/CAM, Regenerative<br>Dentistry Shipments, Forecasts, Dollars, 2009-2015 |      |
| Table 2-25  | 2-42 |
| Noble Biocare New Technology Doubles Addressable Market   |      |
| Figure 2-26   | 2-43 |
| Fastest Growing Sectors in Dentistry  |      |
| Figure 2-27   | 2-44 |
| Dental Implant Market Penetration   |      |
| Figure 2-28   | 2-48 |
| NobelBiocare Platform for Dental Implant Sustainable Growth   |      |
| Figure 2-29   | 2-49 |
| NobelBiocare Platform for Dental Implant Sustainable Growth   |      |
| Figure 2-30   | 2-50 |
| Dental Implant Regional Market Segments, Dollars, 2008  |      |
| Table 2-31  | 2-51 |
| Regional Dental Implant Shipment Analysis<br>Market Shares, Dollars, 2008                             |      |
| Table 2-32  | 2-52 |
| Dental Implant Regional Analysis Factors  |      |

**DENTAL IMPLANT PRODUCT DESCRIPTION**

|  |      |
|--|------|
| Table 3-1  | 3-1  |
| Nobel Biocare Dental Implant Solutions Indications                               |      |
| Figure 3-2   | 3-2  |
| Nobel Biocare Dental Implant Solutions   |      |
| Figure 3-3   | 3-3  |
| Nobel Biocare Dental Implant Solutions   |      |
| Table 3-4  | 3-5  |
| Nobel Biocare NobelActive™ Dental Implant Features                               |      |
| Figure 3-5   | 3-6  |
| Nobel Biocare NobelActive™ Dental Implant Features                               |      |
| Table 3-6  | 3-7  |
| Nobel Biocare NobelActive™ Dental Prosthetic Flexibility                         |      |
| Table 3-7  | 3-8  |
| Nobel Biocare NobelReplace™ Dental Prosthetic Flexibility                        |      |
| Table 3-8  | 3-9  |
| Nobel Biocare NobelReplace™ Comprehensive Prosthetic Flexibility                 |      |
| Figure 3-9   | 3-11 |
| Nobel Biocare Dental Implant Q2 2009 Solution Launches                           |      |
| Table 3-10   | 3-12 |
| Nobel Biocare Dental Implant Digital Dentistry Aspects                           |      |
| Figure 3-11  | 3-13 |
| Nobel Biocare Dental Implant Digital Dentistry                                   |      |
| Table 3-12   | 3-14 |
| Nobel Biocare Dental Implant Comprehensive Prosthetics                           |      |
| Table 3-13   | 3-15 |
| Nobel Biocare Dental Individualized Prosthetics<br>Comprehensive Product Line    |      |
| Table 3-13 (Continued)   | 3-16 |
| Nobel Biocare Dental Individualized Prosthetics<br>Comprehensive Product Line    |      |
| Table 3-13 (Continued)   | 3-17 |
| Nobel Biocare Dental Individualized Prosthetics<br>Comprehensive Product<br>Line |      |
| Figure 3-14  | 3-18 |
| Nobel Biocare Dental Implant Digital Dentistry                                   |      |
| Figure 3-15  | 3-19 |
| Nobel Biocare Nobel Procera Product Benefits                                     |      |
| Figure 3-16  | 3-20 |
| Nobel Biocare NobelProcera Scanner   |      |
| Figure 3-17  | 3-21 |
| Nobel Biocare Dental Implant Digital Dentistry                                   |      |
| Figure 3-18  | 3-23 |
| Nobel Biocare Dental Implant Digital Dentistry Software Features                 |      |
| Figure 3-19  | 3-24 |
| Nobel Biocare Dental Implant Digital Dentistry Treatment Planning                |      |
| Table 3-20   | 3-26 |
| Straumann Product Innovation   |      |

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|   |      |
|---|------|
| Table 3-21  | 3-27 |
| Straumann Flexibility and Ease of Use   |      |
| Figure 3-22   | 3-28 |
| Straumann Osseointegration And Secondary Stability Capabilities                             |      |
| Figure 3-23   | 3-29 |
| Straumann Comprehensive Dental Implant Solutions  |      |
| Figure 3-24   | 3-30 |
| Straumann Comprehensive Dental Solutions  |      |
| Figure 3-25   | 3-31 |
| Straumann Comprehensive Product Portfolio   |      |
| Figure 3-26   | 3-32 |
| Straumann Regeneratives Capabilities  |      |
| Figure 3-27   | 3-33 |
| Straumann Dental Implant Capabilities   |      |
| Figure 3-28   | 3-34 |
| Straumann Dental Implant Regenerative Capabilities  |      |
| Table 3-29  | 3-35 |
| Straumann Roxolid Features  |      |
| Table 3-30  | 3-36 |
| Straumann Roxolid: Next Generation, High Performance Material With Benefits                 |      |
| Figure 3-31   | 3-37 |
| Zimmer Dental Implants  |      |
| Figure 3-32   | 3-38 |
| Zimmer Tapered Screw-Vent Implant   |      |
| Figure 3-33   | 3-39 |
| Single-stage Tapered SwissPlus implant  |      |
| Figure 3-34   | 3-41 |
| Zimmer Spline Twist   |      |
| Table 3-35  | 3-43 |
| Zimmer SwissPlus implant  |      |
| Table 3-36  | 3-44 |
| Zimmer Dental SwissPlus Single-Stage Implant System   |      |
| Table 3-36 (Continued)  | 3-45 |
| Zimmer Dental SwissPlus Single-Stage Implant System   |      |
| Figure 3-37   | 3-46 |
| Zimmer MTX Grit-Blast Machined Titanium Implant Surface With Hydroxylapatite (HA) particles |      |
| Figure 3-38   | 3-48 |
| Zimmer Implant  |      |
| Table 3-39  | 3-50 |
| Astra Tech Dental Implant System™   |      |
| Table 3-39  | 3-51 |
| Astra Tech Dental Implant System Surgical components  |      |
| Table 3-39 (Continued)  | 3-52 |
| Astra Tech Dental Implant System Restorative Components                                     |      |
| Table 3-39 (Continued)  | 3-53 |
| Astra Tech Dental Implant System Restorative Components                                     |      |
| Table 3-39 (Continued)  | 3-54 |
| Astra Tech Dental Implant System Restorative Components                                     |      |
| Table 3-39 (Continued)  | 3-56 |
| Astra Tech Dental Implant System Restorative Components                                     |      |

|  |      |
|--|------|
| Table 3-39 (Continued)   | 3-57 |
| Astra Tech Dental Implant System Restorative Components                                |      |
| Table 3-40   | 3-60 |
| Astra Tech Implant System™   |      |
| Table 3-41   | 3-61 |
| Astra Tech Facilitates SimPlant™ Software From<br>Materialise Complete Planning System |      |
| Table 3-42   | 3-62 |
| Astra Tech SimPlant™ Materialise Software Program                                      |      |
| Table 3-43   | 3-63 |
| Astra Tech BioManagement Communication Tool  |      |
| Table 3-44   | 3-65 |
| Astra Tech Positioning of Nanotechnologies for<br>Life Sciences and Healthcare         |      |
| Table 3-45   | 3-69 |
| Biomet Products  |      |
| Table 3-45 (Continued)   | 3-70 |
| Biomet Products  |      |
| Table 3-46   | 3-71 |
| Biomet Nanotechnology-Based Bone Bonding Implants–                                     |      |
| Table 3-47   | 3-74 |
| Biomet Nano-Scale Calcium Phosphate (CaP) Crystals                                     |      |
| Figure 3-48  | 3-76 |
| Biomet 3i NanoTite™ Surface Instruments and Materials                                  |      |
| Figure 3-49  | 3-77 |
| Biomet 3i NanoTite™ Surface at 50,000X   |      |
| Table 3-50   | 3-80 |
| Biomet NanoTite Implants   |      |
| Figure 3-51  | 3-82 |
| Biomet NanoTite™ Implant OSSEOTITE® Surface Images                                     |      |
| Figure 3-52  | 3-83 |
| Biomet NanoTite™ Implant Surface Image   |      |
| Table 3-53   | 3-84 |
| Biomet 3i NanoTite Implant Benefits  |      |
| Figure 3-54  | 3-85 |
| Biomet 3i Innovations  |      |
| Figure 3-55  | 3-87 |
| Dentsply Ankylos Dental Implant System   |      |
| Figure 3-56  | 3-88 |
| Dentsply Ankylos Dental Implant System Load Design                                     |      |
| Figure 3-57  | 3-89 |
| Dentsply Ankylos Dental Implant Data System Design                                     |      |
| Figure 3-58  | 3-90 |
| Dentsply Ankylos Dental Implant Data<br>System Thread and Load Design                  |      |
| Figure 3-59  | 3-91 |
| Dentsply Ankylos Dental Implant Abutment Diameter                                      |      |
| Table 3-60   | 3-92 |
| Dentsply Frialit Plus Surface Esthetics Aspects  |      |
| Figure 3-61  | 3-94 |
| Dentsply Frialit Plus Stepped Implant Surface Design                                   |      |

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|   |       |
|---|-------|
| Figure 3-62   | 3-95  |
| Dentsply Friadentz Plus Stepped Implant Surface Design  |       |
| Table 3-63  | 3-96  |
| Dentsply XiVE® Plus Implants                            |       |
| Table 3-64  | 3-99  |
| Dentsply XiVE TG Implant Benefits                       |       |
| Figure 3-65   | 3-101 |
| Dentsply Bar Coping                                     |       |
| Table 3-66  | 3-102 |
| Dentsply Prefabricated Components                       |       |
| Table 3-67  | 3-104 |
| OpenCell BioMed Inc. (OCBM) CNRC Phase-2 Report Results |       |
| Table 3-67 (Continued)                                  | 3-105 |
| OpenCell BioMed Inc. (OCBM) CNRC Phase-2 Report Results |       |

## DENTAL IMPLANT TECHNOLOGY

|   |      |
|---|------|
| Figure 4-1  | 4-12 |
| Ion Bond Medthin Coating Products   |      |
| Table 4-2   | 4-13 |
| Dental Bone Grafting Materials  |      |
| Table 4-3   | 4-14 |
| Dental Bone Grafting Procedures   |      |
| Table 4-4   | 4-15 |
| Dental Bone Grafting Research and Development                             |      |
| Figure 4-5  | 4-18 |
| Dental Implant Alternative Treatments                                     |      |
| Figure 4-6  | 4-19 |
| Straumann Efficiency Gain - CAD/CAM Prosthetics                           |      |
| Figure 4-7  | 4-20 |
| Dental Implant Alternative Treatments                                     |      |
| Figure 4-8  | 4-21 |
| Dental Implant Alternative Treatments                                     |      |
| Figure 4-9  | 4-22 |
| Straumann Roxolid: Next Generation,<br>High Performance Material Benefits |      |
| Table 4-10  | 4-23 |
| NobelBiocare NobelProcera Technology                                      |      |
| Table 4-11  | 4-25 |
| Battery Chemistries At The Forefront For Implantation Devices             |      |
| Figure 4-12   | 4-33 |
| Biofilm Formation   |      |

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**DENTAL IMPLANT COMPANY PROFILES**

|  |      |
|--|------|
| Figure 5-1   | 5-5  |
| AstraZeneca Regional Sales Revenue                       |      |
| Table 5-2  | 5-8  |
| Astrazeneca Regional Revenue                             |      |
| Table 5-3  | 5-17 |
| Dentsply New Products:                                   |      |
| Table 5-4  | 5-27 |
| Biomet Target Markets                                    |      |
| Table 5-5  | 5-28 |
| Biomet Product Portfolio                                 |      |
| Table 5-6  | 5-38 |
| Nobel Biocare Revenue By Region in EUR Million           |      |
| Table 5-7  | 5-41 |
| Nobel Biocare Strategic Positioning                      |      |
| Figure 5-8   | 5-54 |
| Zimmer Analysis of Revenue by Product Segment and Region |      |
| Figure 5-9   | 5-55 |
| Zimmer Sales by Product Segment and Geographical Segment |      |
| Table 5-10   | 5-56 |
| Zimmer Positioning                                       |      |

## **ABOUT THE COMPANY**

**WINTERGREEN RESEARCH**, RESEARCH STRATEGY IDENTIFIES MARKET TRENDS THROUGH READING MARKET MATERIALS AND INTERVIEWING OPINION LEADERS. **WINTERGREEN RESEARCH TEAM** WORKS TO GATHER PRIMARY INFORMATION FROM COMPANY INTERVIEWS, INDUSTRY MATERIALS, AND COMPANY DOCUMENTS TO WRITE MARKET RESEARCH STUDIES FROM AN INDEPENDENT PERSPECTIVE. 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 AN ESSENTIAL ASPECT OF PRODUCING GOOD, RELIABLE, INDEPENDENT DATA.

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**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 SERVICES ORIENTED ARCHITECTURE, CONTENT MANAGEMENT, MID SIZE BUSINESS MIDDLEWARE, WORLDWIDE ENERGY MARKETS, SOLAR UTILITY MARKETS, SOLAR TECHNOLOGY MARKETS, THIN FILM BATTERY MARKETS, WEBCAM MARKETS, 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, NANOTECHNOLOGY, AND APPLICATION INTEGRATION MARKETS. MS. EUSTIS IS A GRADUATE OF BARNARD COLLEGE.

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