

# 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 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 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 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 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

## 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 – Prevention Instead Of Intervention For Esthetics	2-31
2.4 Dental Implant Market Forecasts	2-32
2.4.1 Dental Implant Market Forecasts Reflect 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 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

## 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) Treatment Planning Software Partnership	3-10
3.1.4 Nobel Biocare Digital Dentistry	3-10
3.1.5 Nobel Biocare Small Diameter Implants And 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™ - CAD/CAM Patient-Specific Abutments For All 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 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 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 Surface Complexity At The Sub-Micron Scale	3-73
3.5.9 Biomet 3i Navigator™ System -Instrumentation For 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

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 – 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 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 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.</b>	<b>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 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 Spores Circulating In The Vascular System	4-7
4.3.2	Thin Coatings Can Be Applied To Biomedical Devices With The Aim Of Providing Resistance To Bacterial Colonization	4-8
4.3.3	Silver Nanoparticle Based Antibiotic Approaches	4-9
4.3.4	Fabrication Of A Surface Layer Of Covalently Immobilized Antibiotic Molecules	4-10
4.4	Medthin Coating Products	4-12
4.5	Astra Tech Follow-Up Research Summary Of The Radiographic Data Showing An Average Bone Loss	4-15
4.6	Low Temperature Growth Of Thin Film Coatings For The Surface Modification Of Dental Prostheses	4-17
4.7	Battery Technology for Dental Implants	4-24

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 CAD/CAM Scientific Program	5-11
5.3.6 Astra Tech acquires Astra Tech AB an Innovative Dental CAD/CAM company	5-12
5.3.7 Astra Tech Acquires Its Japanese Distributor, 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 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:	

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, Dollars, 2008	
Figure ES-5	ES-15
Worldwide Dental Implant Market Forecasts, Dollars, 2009-2015	

## 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	

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, 2009-2015	
Table 2-19	2-35
Worldwide Dental CAD/CAM Shipment Forecasts, Dollars, 2009-2015	
Table 2-20	2-36
Worldwide Dental Implant Shipments, Forecasts, Units and Dollars, 2009-2015	
Table 2-21	2-38
Worldwide Dental CAD/CAM Shipments, Forecasts, Dollars, 2009-2015	
Figure 2-22	2-39
Worldwide Dental Regenerative Materials Shipments, Dollars, 2009-2015	
Table 2-23	2-40
Worldwide Dental Implant, CAD/CAM, Regenerative Dentistry Shipments, Forecasts, Dollars, 2009-2015	
Figure 2-24	2-41
Worldwide Dental Implant, CAD/CAM, Regenerative 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 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 Comprehensive Product Line	
Table 3-13 (Continued)	3-16
Nobel Biocare Dental Individualized Prosthetics Comprehensive Product Line	
Table 3-13 (Continued)	3-17
Nobel Biocare Dental Individualized Prosthetics Comprehensive Product 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	

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 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 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 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	

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, 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	

## 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	