



STAFF REPORT

Smart Glasses for Augmented Reality Technologies: *Global Markets to 2022*

March 2018

BCC Research Staff

Report Code: IFT155A

Table of Contents

- Chapter 1: Introduction 1**
 - Study Goals and Objectives..... 2
 - Scope of Report..... 2
 - Intended Audiences 2
 - Information Sources..... 3
 - Methodology..... 3
 - Geographic Breakdown..... 4
 - Analyst's Credentials..... 9
 - Related BCC Research Reports..... 9
- Chapter 2: Summary and Highlights 11**
- Chapter 3: Smart Glasses Market Overview and Technology Background 15**
 - History of Smart Glasses 15
 - Technology Adoption of Smart Glasses 16
 - Wearable Devices Industry Overview 17
 - Introduction to Augmented Reality 18
 - Emergence of Mixed Reality 20
 - Sales & Marketing Strategies 21
 - Value Chain Analysis 21
 - Market Drivers 23
 - Technology Advancements in Smart Glasses 23
 - Increase in Development of AR Apps and Platforms 24
 - Rise of Bring Your Own Wearable Device Trend 24
 - Productivity and Efficiency Improvements 25
 - Market Restraints 25
 - High Price and Bulky Design 25
 - Privacy Concerns 26
- Chapter 4: Market Breakdown by Form Factor 28**
 - Monocular Smart Glasses 29
 - Monocular Smart Glasses Increase the Efficiency of Workers in the Logistics Sector..... 30
 - Market Size and Forecast 30
 - Binocular Smart Glasses..... 31
 - Market Size and Forecast 32
- Chapter 5: Market Breakdown by Operating System 35**
 - Android 36
 - Android Dominance in Smart Glasses Market 37
 - Market Size and Forecast 37
 - Windows 38
 - Market Size and Forecast 39
 - Others 40
 - Market Size and Forecast 41
- Chapter 6: Market Breakdown by Display Technology 44**
 - Wave-guide Based Display Technique 45
 - Diffraction Waveguide..... 45
 - Holographic Waveguide..... 46

Polarized Waveguide	46
Reflective Waveguide	47
Others	47
Chapter 7: Market Breakdown by Application	49
Consumer Applications	50
Privacy Concerns Restraining the Adoption of Smart Glasses in Consumer Applications	51
Unfashionability of Smart Glasses Restraining Market Growth in the Consumer Segment	51
Market Size and Forecast	51
Enterprise Applications	53
Major Purchase Criteria for Enterprise Smart Glasses	53
Challenges for Adoption of Smart Glasses in Enterprise Applications	53
Market Size and Forecast	54
Manufacturing	55
Healthcare	57
Military and Defense	58
Warehouses	59
Construction and Architecture	61
Others	62
Chapter 8: Market Breakdown by Region	64
North America	66
US	68
Canada	69
Mexico	70
Europe	71
Germany	74
UK	75
France	76
Rest of Europe	77
Asia-Pacific	77
China	80
Japan	81
South Korea	82
Rest of Asia-Pacific	83
RoW	84
Chapter 9: Competitive Landscape	87
Porter's Five Forces Model	87
Bargaining Power of Suppliers	89
Bargaining Power of Buyers	89
Threat of Substitutes	89
Threat of New Entrants	90
Degree of Competition	90
Market Share Analysis	91
Strategic Analysis	92
Product Launches	94
Partnerships	95
Expansion	96
Product Development	97
Acquisitions	97

Chapter 10: Company Profiles 100

About BCC Research 132

About BCC Research..... 133

BCC Membership 133

BCC Custom Research 133

List of Tables

Summary Table: Global Market for Smart Glasses, by Form Factor, Through 2022 (\$ Millions)	11
Table 1 Introduction to Augmented Reality	19
Table 2 Global Market for Smart Glasses, by Form Factor, Through 2022 (\$ Millions).....	28
Table 3 Global Market for Monocular Smart Glasses, by Region, Through 2022 (\$ Millions).....	30
Table 4 Global Market for Binocular Smart Glasses, by Region, Through 2022 (\$ Millions)	32
Table 5 Global Market for Smart Glasses, by Operating System, Through 2022 (\$ Millions)	35
Table 6 Global Market for Android Smart Glasses, by Region, Through 2022 (\$ Millions)	37
Table 7 Global Market for Windows Smart Glasses, by Region, Through 2022 (\$ Millions)	39
Table 8 Global Market for Other Operating Systems Smart Glasses, by Region, Through 2022 (\$ Millions)	41
Table 9 Global Market for Smart Glasses, by Application, Through 2022 (\$ Millions)	49
Table 10 Global Market of Smart Glasses for Consumer, by Region, Through 2022 (\$ Millions)	52
Table 11 Global Market of Smart Glasses for Enterprise Applications, by Region, Through 2022 (\$ Millions)	54
Table 12 Global Market of Smart Glasses for Enterprise Applications, by Sector, Through 2022 (\$ Millions)	54
Table 13 Global Market for Smart Glasses, by Region, Through 2022 (\$ Millions)	65
Table 14 North American Market for Smart Glasses, by Form Factor, Through 2022 (\$ Millions)	66
Table 15 North American Market for Smart Glasses, by Operating System, Through 2022 (\$ Millions) ...	67
Table 16 North American Market for Smart Glasses, by Application, Through 2022 (\$ Millions).....	67
Table 17 North American Market for Smart Glasses, by Country, Through 2022 (\$ Millions)	68
Table 18 European Market for Smart Glasses, by Form Factor, Through 2022 (\$ Millions)	72
Table 19 European Market for Smart Glasses, by Operating System, Through 2022 (\$ Millions)	72
Table 20 European Market for Smart Glasses, by Application, Through 2022 (\$ Millions).....	73
Table 21 European Market for Smart Glasses, by Country, Through 2022 (\$ Millions)	73
Table 22 Asia-Pacific Market for Smart Glasses, by Form Factor, Through 2022 (\$ Millions).....	78
Table 23 Asia-Pacific Market for Smart Glasses, by Operating System, Through 2022 (\$ Millions).....	78
Table 24 Asia-Pacific Market for Smart Glasses, by Application, Through 2022 (\$ Millions)	79
Table 25 Asia-Pacific Market for Smart Glasses, by Country, Through 2022 (\$ Millions).....	79
Table 26 RoW Market for Smart Glasses, by Form Factor, Through 2022 (\$ Millions)	84
Table 27 RoW Market for Smart Glasses, by Operating System, Through 2022 (\$ Millions)	85
Table 28 RoW Market for Smart Glasses, by Application, Through 2022 (\$ Millions).....	85
Table 29 Smart Glasses Market, Product Launches, 2016-November 2017.....	94
Table 30 Smart Glasses Market, Partnership Agreements, 2016-November 2017	95
Table 31 Smart Glasses Market, Expansion Strategies, 2016-November 2017	96
Table 32 Smart Glasses Market, Product Development Strategies, 2016-November 2017	97
Table 33 Smart Glasses Market, Acquisition Strategies, 2016-November 2017	97
Table 34 Alphabet, Inc.'s Net Revenue, 2014-2016 (\$ Millions).....	100
Table 35 Google Inc.'s Product Portfolio	102
Table 36 Google Inc.'s Recent Developments	103
Table 37 Atheer, Inc.'s Product Portfolio.....	104
Table 38 Atheer, Inc.'s Recent Developments.....	105
Table 39 DAQRI LLC Product Description.....	106
Table 40 DAQRI LLC Recent Developments	107
Table 41 GlassUp SRL's Product Portfolio.....	108
Table 42 Meta Company's Product Portfolio.....	111
Table 43 Meta Company's Recent Developments.....	112

Table 44 Microsoft Corp.'s Net Revenue, 2014-2016 (\$ Millions).....	113
Table 45 Microsoft Corp.'s Product Portfolio	115
Table 46 Microsoft Corp.'s Recent Developments	116
Table 47 Osterhaut Design Group Inc.'s Product Portfolio.....	118
Table 48 Osterhaut Design Group Inc.'s Recent Developments.....	119
Table 49 Seiko Epson Corp.'s Net Revenue, 2014-2016 (\$ Millions)	121
Table 50 Seiko Epson Corp.'s Key Products	123
Table 51 Seiko Epson Corp.'s Recent Developments.....	124
Table 52 Sony Corp.'s Net Revenue, 2015-2017 (\$ Millions).....	125
Table 53 Sony Corp.'s Product Portfolio	127
Table 54 Sony Corp.'s Recent Developments	127
Table 55 Vuzix Corp.'s Net Revenue, 2014-2016 (\$ Millions).....	128
Table 56 Vuzix Corp.'s Product Portfolio	130
Table 57 Vuzix Corp.'s Recent Developments	131

List of Figures

Summary Figure: Global Market for Smart Glasses, by Form Factor, 2016-2022 (\$ Millions)	12
Figure 1 Mixed Reality Spectrum	20
Figure 2 Smart Glasses Value Chain	22
Figure 3 Global Market for Smart Glasses, by Form Factor, 2016-2022 (\$ Millions).....	29
Figure 4 Global Market for Monocular Smart Glasses, by Region, 2016-2022 (\$ Millions).....	31
Figure 5 Global Market for Binocular Smart Glasses, by Region, 2016-2022 (\$ Millions)	33
Figure 6 Global Market for Smart Glasses, by Operating System, 2016-2022 (\$ Millions)	36
Figure 7 Global Market for Android Smart Glasses, by Region, 2016-2022 (\$ Millions)	38
Figure 8 Global Market for Windows Smart Glasses, by Region, 2016-2022 (\$ Millions)	40
Figure 9 Global Market for Other Operating Systems Smart Glasses, by Region, 2016-2022 (\$ Millions)	42
Figure 10 Global Market for Smart Glasses, by Application, 2016-2022 (\$ Millions).....	50
Figure 11 Global Market for Smart Glasses for Consumer Applications, by Region, 2016-2022 (\$ Millions)	52
Figure 12 Global Market for Smart Glasses for Enterprise Applications, by Sector, 2016-2022 (\$ Millions)	55
Figure 13 Global Market for Smart Glasses for Manufacturing Sector, 2016-2022 (\$ Millions)	56
Figure 14 Global Market for Smart Glasses for Healthcare Sector, 2016-2022 (\$ Millions).....	58
Figure 15 Global Market for Smart Glasses for Military and Defense Sector, 2016-2022 (\$ Millions)	59
Figure 16 Global Market for Smart Glasses for Warehouse and Logistics Sector, 2016-2022 (\$ Millions).....	60
Figure 17 Global Market for Smart Glasses in Construction and Architecture Sector, 2016-2022 (\$ Millions)	61
Figure 18 Global Market for Smart Glasses in Other Application Sector, 2016-2022 (\$ Millions)	62
Figure 19 Smart Glasses Market Segmentation, by Region	64
Figure 20 Global Market Share of Smart Glasses, by Region, 2016 (%).....	65
Figure 21 U.S. Smart Glasses Market, 2016-2022 (\$ Millions).....	69
Figure 22 Canada Smart Glasses Market, 2016-2022 (\$ Millions)	70
Figure 23 Mexico Smart Glasses Market, 2016-2022 (\$ Millions)	71
Figure 24 Germany Smart Glasses Market, 2016-2022 (\$ Millions)	74
Figure 25 UK Smart Glasses Market, 2016-2022 (\$ Millions)	75
Figure 26 France Smart Glasses Market, 2016-2022 (\$ Millions)	76
Figure 27 Rest of Europe Smart Glasses Market, 2016-2022 (\$ Millions)	77
Figure 28 China Smart Glasses Market, 2016-2022 (\$ Millions).....	80
Figure 29 Japan Smart Glasses Market, 2016-2022 (\$ Millions).....	81
Figure 30 South Korea Smart Glasses Market, 2016-2022 (\$ Millions)	82
Figure 31 Rest of Asia-Pacific Smart Glasses Market, 2016-2022 (\$ Millions).....	83
Figure 32 Smart Glasses Market, Porter's Five Forces Analysis.....	88
Figure 33 Global Market Share Analysis of Smart Glasses, 2016 (%)	91
Figure 34 Strategic Analysis Share of Smart Glasses Market, 2016-2017* (%)	93
Figure 35 Smart Glasses Market Developments Share, by Company, 2016-2017* (%)	98
Figure 36 Alphabet Inc.'s Revenue Details, by Business Segment, 2016 (%).....	101
Figure 37 Alphabet Inc.'s Revenue Details, by Region, 2016 (%).....	101
Figure 38 Google Inc.'s Revenue Details, by Business Segment, 2016 (%).....	102
Figure 39 Microsoft Corp.'s Revenue Details, by Business Segment, 2016 (%).....	114
Figure 40 Microsoft Corp.'s Revenue Details, by Region, 2016 (%).....	114
Figure 41 Seiko Epson Corp.'s Revenue Details, by Business Segment, 2016 (%)	121
Figure 42 Seiko Epson Corp.'s Revenue Details, by Region, 2016 (%)	122
Figure 43 Sony Corp.'s Revenue Details, by Business Segment, 2016 (%).....	126

Figure 44 Sony Corp.'s Revenue Details, by Region, 2016 (%)..... 126
Figure 45 Vuzix Corp.'s Revenue Details, by Business Segment, 2016 (%)..... 129



About BCC Research

About BCC Research

With our unparalleled 45-year history, BCC Research provides comprehensive analysis of global market sizing, forecasting and industry intelligence, covering markets where advances in science and technology are improving the quality, standard and sustainability of businesses, economies and lives.

BCC Membership

From market sizing and forecasts, to opportunity assessments and competitive analyses, our ever-expanding library gives you the data, insights and intelligence required to ensure your project is a success. Members benefit from ongoing, unlimited access to the category or collections of their choice, and most membership packages pay for themselves within two to three reports being accessed.

Did you buy this report? You may qualify to apply your purchase price toward a full membership. Call 866/285-7215 or e-mail info@bccresearch.com to request a demo.

BCC Custom Research

Our experts provide custom research projects to those working to identify new markets, introduce new products, validate existing market share, analyze competition and assess the potential for products to impact existing markets. With impressive academic credentials and broad and deep knowledge of global industrial markets, our independent analysts and consultants develop the facts, figures, analysis and assessments to inform the decisions that will move your company ahead. Confidential inquiries to: custom@bccresearch.com or 781-205-2429.

DISCLAIMER

The information developed in this report is intended to be as reliable as possible at the time of publication and is of a professional nature. This information does not constitute managerial, legal or accounting advice, nor should it be considered as a corporate policy guide, laboratory manual or an endorsement of any product, as much of the information is speculative in nature. BCC Research and the author assume no responsibility for any loss or damage that might result from reliance on the reported information or from its use.

ISBN: 978-1-62296-631-8
March 2018