



# 4K Ultra-high Definition (UHD) Technologies: *Global Markets to 2022*

March 2018

*Anand Bhandari*

Report Code: IFT140A

# Table of Contents

- Chapter 1: Introduction ..... 2**
  - Study Goals and Objectives..... 2
  - Reasons for Doing This Study..... 2
  - Scope of Report..... 2
  - Information Sources..... 3
  - Methodology..... 3
  - Geographic Breakdown..... 4
  - Analyst’s Credentials..... 8
  - Related BCC Research Reports..... 8
  
- Chapter 2: Summary and Highlights..... 10**
  
- Chapter 3: Market and Technology Background ..... 13**
  - Factors Driving Market Growth ..... 13
    - High Demand Across Various Applications ..... 13
    - Increasing Disposable Income ..... 14
    - Increasing Television Sales ..... 15
    - Improved Features ..... 16
    - Rising Usage in PCs and Other Mobile Devices ..... 17
    - Growing Demand for Larger Screens and Higher Resolution..... 19
    - Increasing 4K Content ..... 19
    - Narrow Spectrum of Wavelength and Resolution ..... 20
    - Increasing Number of Service Providers ..... 22
  - Factors Restraining Market Growth..... 22
    - High Internet Bandwidth..... 22
    - High Cost is a Concern for the Growth of the Market..... 24
    - Need for Format Conversion ..... 26
    - Alternative Technologies..... 27
    - High Power Consumption..... 28
    - Opportunities ..... 30
  
- Chapter 4: Market Breakdown by Screen Size ..... 35**
  - Under 40 Inches ..... 36
  - 40 to 49 Inches..... 38
  - 50 to 55 Inches..... 41
  - 60 to 65 Inches..... 44
  - 70 Inches and Above..... 47
  
- Chapter 5: Market Breakdown by Display Technology ..... 51**
  - LED ..... 52
  - OLED..... 53
  - QLED..... 55
  
- Chapter 6: Market Breakdown by End Use ..... 58**
  - Television ..... 59
  - Monitors..... 61
  - Projectors..... 63
  - Smartphones..... 64

Virtual Reality Headsets .....	67
4K Recording Devices .....	69
4K Consumer Cameras .....	71
4K Video Cameras .....	71
4K DSLRs and Mirrorless Cameras .....	72
4K Smartphones and Tablets .....	73
Drones with 4K Cameras .....	74
<b>Chapter 7: Market Breakdown by Region .....</b>	<b>76</b>
North America .....	78
United States .....	82
Canada .....	84
Europe .....	86
Germany .....	92
U.K. ....	95
France .....	96
Spain .....	96
Italy .....	97
Rest of Europe .....	98
Asia-Pacific .....	98
India .....	104
China .....	105
Japan .....	106
Rest of Asia-Pacific .....	107
Rest of the World .....	108
Brazil .....	112
Mexico .....	113
South Africa .....	115
<b>Chapter 8: Company Profiles .....</b>	<b>117</b>
<b>About BCC Research .....</b>	<b>132</b>
About BCC Research .....	133
BCC Membership .....	133
BCC Custom Research .....	133

# List of Tables

Summary Table: Global Market for 4K UHD Technology, by Technology Type, Through 2022 (\$ Millions)	11
Table 1 Latest 4K UHD Televisions	15
Table 2 Comparison of Different Types of TV Screens	17
Table 3 4K UHD Laptops (\$)	18
Table 4 Smartphones with 4K UHD Video Recording Capabilities (\$)	18
Table 5 Bandwidth for Live Streaming	23
Table 6 50- to 55-Inch 4K UHD Television Price Comparison (\$)	25
Table 7 Popular Video Convertors	27
Table 8 Power Consumption of Common 4K UHD TVs (Watts)	30
Table 9 Global Market for 4K UHD Technology, by Screen Size, Through 2022 (\$ Millions)	35
Table 10 Global Market for 4K UHD Screens Under 40 Inches, by Region, Through 2022 (\$ Millions)	36
Table 11 Various 4K UHD Monitors Available Under 40 Inches	38
Table 12 40- to 49-Inch 4K UHD TVs (\$)	39
Table 13 Global Market for 40- to 49-Inch 4K UHD TVs, by Region, Through 2022 (\$ Millions)	39
Table 14 Comparison of 40- to 49-Inch 4K UHD TV Brands and Models	40
Table 15 50- to 55-Inch 4K UHD TVs Available (\$)	42
Table 16 Global Market for 50- to 55-Inch 4K UHD TVs, by Region, Through 2022 (\$ Millions)	42
Table 17 Comparison of 50- to 55-Inch 4K UHD TV Brands and Models	44
Table 18 60- to 65-Inch 4K UHD TVs Available (\$)	44
Table 19 Global Market for 60- to 65-Inch 4K UHD TVs, by Region, Through 2022 (\$ Millions)	45
Table 20 Comparison of 60- to 65-Inch 4K UHD TV Brands and Models	46
Table 21 70-Inch-Plus 4K UHD TVs Available (\$)	47
Table 22 Global Market for 70-Inch-Plus 4K UHD TVs, by Region, Through 2022 (\$ Millions)	48
Table 23 Comparison of 70-Inch Plus 4K UHD TV Brands and Models	49
Table 24 Global Market for 4K UHD Technology, by Technology Type, Through 2022 (\$ Millions)	51
Table 25 Global Market for 4K UHD LED, by Region, Through 2022 (\$ Millions)	53
Table 26 Global Market for 4K UHD OLED, by Region, Through 2022 (\$ Millions)	54
Table 27 Global Market for 4K UHD QLED, by Region, Through 2022 (\$ Millions)	56
Table 28 Global Market for 4K UHD Technology, by End Use, Through 2022 (\$ Millions)	58
Table 29 Descriptions and Prices of the Top Five 4K UHD TV Models (\$)	59
Table 30 Global Market for 4K UHD TVs, by Region, Through 2022 (\$ Millions)	60
Table 31 Global Market for 4K UHD Monitors, by Region, Through 2022 (\$ Millions)	62
Table 32 Global Market for 4K UHD Projectors, by Region, Through 2022 (\$ Millions)	63
Table 33 Smartphones and Tablets with 4K Technology	65
Table 34 Smartphones with 4K Technology (\$)	66
Table 35 Global Market for 4K UHD Smartphones, by Region, Through 2022 (\$ Millions)	67
Table 36 Global Market for 4K UHD Virtual Reality Headsets, by Region, Through 2022 (\$ Millions)	68
Table 37 4K UHD VR Headsets (\$)	69
Table 38 Global Market for 4K UHD Recording Devices, by Region, Through 2022 (\$ Millions)	70
Table 39 Consumer Cameras with 4K Technology (\$)	71
Table 40 Video Cameras with 4K Technology (\$)	72
Table 41 DSLRs and Mirrorless Cameras with 4K Technology (\$)	72
Table 42 Smartphones and Tablets with 4K Technology	73
Table 43 Drones with 4K Technology (\$)	74
Table 44 Global Market for 4K UHD Technology, by Region, Through 2022 (\$ Millions)	76
Table 45 Top Five 4K UHD TV Models and Their Prices (\$)	77

Table 46 North America Market for 4K UHD Technology, by Technology Type, Through 2022 (\$ Millions)	78
Table 47 North American Market for 4K UHD Technology, by End Use, Through 2022 (\$ Millions)	79
Table 48 North American Market for 4K UHD Technology, by Screen Size, Through 2022 (\$ Millions)	80
Table 49 North American Market for 4K UHD Technology, by Country/Region, Through 2022 (\$ Millions)	81
Table 50 Most Popular 4K UHD TV Models in North America (\$)	82
Table 51 4K UHD Television Channels in the U.S.	83
Table 52 Apple Products That Use 4K UHD Technology (\$)	84
Table 53 Prices of 4K UHD TVs in Canada (\$)	85
Table 54 4K Television Channels in Canada	86
Table 55 European Market for 4K UHD Technology, by Technology Type, Through 2022 (\$ Millions)	87
Table 56 European Market for 4K UHD Technology, by End Use, Through 2022 (\$ Millions)	88
Table 57 European Market for 4K UHD Technology, by Screen Size, Through 2022 (\$ Millions)	89
Table 58 European Market for 4K UHD Technology, by Country/Region, Through 2022 (\$ Millions)	90
Table 59 UHD Content Offerings in the German Market (\$)	94
Table 60 Asia-Pacific Market for 4K UHD Technology, by Technology Type, Through 2022 (\$ Millions)	99
Table 61 Asia-Pacific Market for 4K UHD Technology, by End Use, Through 2022 (\$ Millions)	100
Table 62 Asia-Pacific Market for 4K UHD Technology, by Screen Size, Through 2022 (\$ Millions)	101
Table 63 Asia-Pacific Market for 4K UHD Technology, by Country/Region, Through 2022 (\$ Millions)	102
Table 64 International Deployment of 4K as of 2015	104
Table 65 Rest of the World Market for 4K UHD Technology, by Technology Type, Through 2022 (\$ Millions)	109
Table 66 Rest of the World Market for 4K UHD Technology, by End Use, Through 2022 (\$ Millions)	110
Table 67 Rest of the World Market for 4K UHD Technology, by Screen Size, Through 2022 (\$ Millions)	111
Table 68 Global 4K UHD Channels	112
Table 69 Brazilian Products with 4K UHD Technology (\$)	113
Table 70 Ultra HD 4K Television Brands Sold in Mexico (\$)	114
Table 71 South African Companies and Their Products (\$)	115

# List of Figures

Summary Figure: Global Market for 4K UHD Technology, by Technology Type, 2016-2022 (\$ Millions) ..	11
Figure 1 Comparison of Annual Energy Consumption of 4K UHD and HD TVs, by Screen Size, 2015 (kWh)	29
Figure 2 Global Market for 4K UHD Technology, by Screen Size, 2016–2022 (\$ Millions) .....	36
Figure 3 Global Market for 4K UHD Screens Under 40 Inches, by Region, 2016–2022 (\$ Millions).....	37
Figure 4 Global Market for 40 to 49-Inch 4K UHD TVs, by Region, 2016–2022 (\$ Millions).....	40
Figure 5 Global Market for 50- to 55-Inch 4K UHD TVs, by Region, 2016–2022 (\$ Millions) .....	43
Figure 6 Global Market for 60- to 65-Inch 4K UHD TVs, by Region, 2016–2022 (\$ Millions) .....	46
Figure 7 Global Market for 70-Inch Plus 4K UHD TVs, by Region, 2016–2022 (\$ Millions) .....	48
Figure 8 Global Market for 4K UHD Technology, by Technology Type, 2016–2022 (\$ Millions).....	51
Figure 9 Global Market for 4K UHD LED, by Region, 2016–2022 (\$ Millions) .....	53
Figure 10 Global Market for 4K UHD OLED, by Region, 2016–2022 (\$ Millions).....	55
Figure 11 Global Market for 4K UHD QLED, by Region, 2016–2022 (\$ Millions).....	56
Figure 12 Global Market for 4K UHD Technology, by End Use, 2016–2022 (\$ Millions).....	59
Figure 13 Global Market for 4K UHD TVs, by Region, 2016–2022 (\$ Millions).....	61
Figure 14 Global Market for 4K UHD Monitors, by Region, 2016–2022 (\$ Millions).....	62
Figure 15 Global Market for 4K UHD Projectors, by Region, 2016–2022 (\$ Millions) .....	63
Figure 16 Global Market for 4K UHD Smartphones, by Region, 2016-2022 (\$ Millions).....	67
Figure 17 Global Market for 4K UHD Virtual Reality Headsets, by Region, 2016-2022 (\$ Millions).....	68
Figure 18 Global Market for 4K UHD Recording Devices, by Region, 2016–2022 (\$ Millions).....	70
Figure 19 Global Market for 4K UHD Technology, by Region, 2016–2022 (\$ Millions).....	77
Figure 20 North American Market for 4K UHD Technology, by Technology Type, 2016–2022 (\$ Millions)	78
Figure 21 North American Market for 4K UHD Technology, by End Use, 2016–2022 (\$ Millions) .....	79
Figure 22 North American Market for 4K UHD Technology, by Screen Size, 2016–2022 (\$ Millions) .....	80
Figure 23 North American Market for 4K UHD Technology, by Country/Region, 2016–2022 (\$ Millions)	81
Figure 24 Drop in 4K Television Prices, 2014 vs. 2015 (\$) .....	84
Figure 25 European Market for 4K UHD Technology, by Technology Type, 2016–2022 (\$ Millions).....	87
Figure 26 European Market for 4K UHD Technology, by End Use, 2016–2022 (\$ Millions).....	88
Figure 27 European Market for 4K UHD Technology, by Screen Size, 2016–2022 (\$ Millions).....	89
Figure 28 European Market for 4K UHD Technology, by Country/Region, 2016–2022 (\$ Millions) .....	90
Figure 29 UHD TV Sales in Germany, 2015–2016 .....	93
Figure 30 Asia-Pacific Market for 4K UHD Technology, by Technology Type, 2016–2022 (\$ Millions).....	99
Figure 31 Asia-Pacific Market for 4K UHD Technology, by End Use, 2016–2022 (\$ Millions).....	100
Figure 32 Asia-Pacific Market for 4K UHD Technology, by Screen Size, 2016–2022 (\$ Millions).....	101
Figure 33 Asia-Pacific Market for 4K UHD Technology, by Country/Region, 2016–2022 (\$ Millions).....	102
Figure 34 Rest of the World Market for 4K UHD Technology, by Technology Type, 2016–2022 (\$ Millions)	109
Figure 35 Rest of the World Market for 4K UHD Technology, by End Use, 2016–2022 (\$ Millions).....	110
Figure 36 Rest of the World Market for 4K UHD Technology, by Screen Size, 2016–2022 (\$ Millions)...	111



*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 towards a full membership. Call 866/285-7215 or e-mail [info@bccresearch.com](mailto: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](mailto: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: 978-1-62296-645-5

March 2018