SENSOR MARKET

Global Opportunity Analysis and Industry Forecast, 2014-2022

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Proximity and Displacement Sensor Market - Global Opportunity Analysis and Industry Forecast, 2014-2022

Proximity sensors detect the existence of objects of interest in the vicinity of the sensor. Absolute displacement as well as relative displacement of objects can be measured using displacement sensors. The growing adoption of factory and process automation across diverse industries has expanded the application areas of proximity and displacement sensors. The Asia-Pacific market has experienced an increased demand from automobile and electronics manufacturing industries.
https://www.alliedmarketresearch.com/asia-pacific-proximity-and-displacement-sensor-market

Internet of Things (IoT) healthcare Market - Global Opportunity Analysis and Industry Forecast, 2014-2021

Internet of things (IoT), comprising components such as devices, network connectivity, electronics system and software, is basically the networking of connected devices or things to transmit the data between them without human intervention. The world internet of things in healthcare market, is expected to register considerable growth during the forecast period.

https://www.alliedmarketresearch.com/iot-healthcare-market

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CHAPTER 1 INTRODUCTION

1.1. REPORT DESCRIPTION

Sensors are devices that detect events or changes in their environment and then provide the corresponding output. They sense physical input such as light, heat, motion, moisture, pressure, or any other entity, and respond by producing an output on a display or transmit the information in electronic form for further processing. These define major applications in flood & water level monitoring systems, environmental monitoring, traffic monitoring & controlling, energy saving in artificial lighting, remote system monitoring & equipment fault diagnostics, and precision agriculture & animal tracking, among many more.

Recent advances in ubiquitous computing, miniature as well as mobile devices, have nurtured a vivid growth of wearable technologies. Wearable biosensor systems are an emerging trend and are expected to be revolutionary in many application areas, ranging from cardiovascular monitoring to battle field monitoring, and sports medicine. Furthermore, infrastructure systems such as smart grid, smart homes, smart water networks, and intelligent transportation connect our world through the concept of Internet of Things (IoT), where there is extensive use of sensors. The entire physical infrastructure is closely coupled with information and communication technologies, where intelligent monitoring and management can be achieved via the usage of networked embedded devices having sensors.

The world sensor market is segmented based on type, into radar sensor, optical sensor, biosensors, touch sensor, image sensor, pressure sensor, temperature sensor, proximity and displacement sensor, level sensor, motion and position sensor, humidity sensor, accelerometer and speed sensor, and others. On the basis of technology, the market comprises of complementary metal–oxide–semiconductor (CMOS), micro-electromechanical systems (MEMS), Nano-electromechanical systems (NEMS), and others. Furthermore, the market is categorized on the basis of industry vertical, which includes electronics, IT & telecommunication, industrial, automotive, aerospace & defense, healthcare, and others. The market is analyzed on the basis of four regions, namely, North America, Europe, Asia-Pacific, and LAMEA.

Key players profiled in this report are STMicroelectronics, NXP semiconductors, Infineon Technologies AG, Qualcomm Technologies, Inc., Atmel Corporation, Texas instruments Incorporated, Robert Bosch GmbH, Johnson controls, Sony Corporation, and Honeywell International Inc. among others.

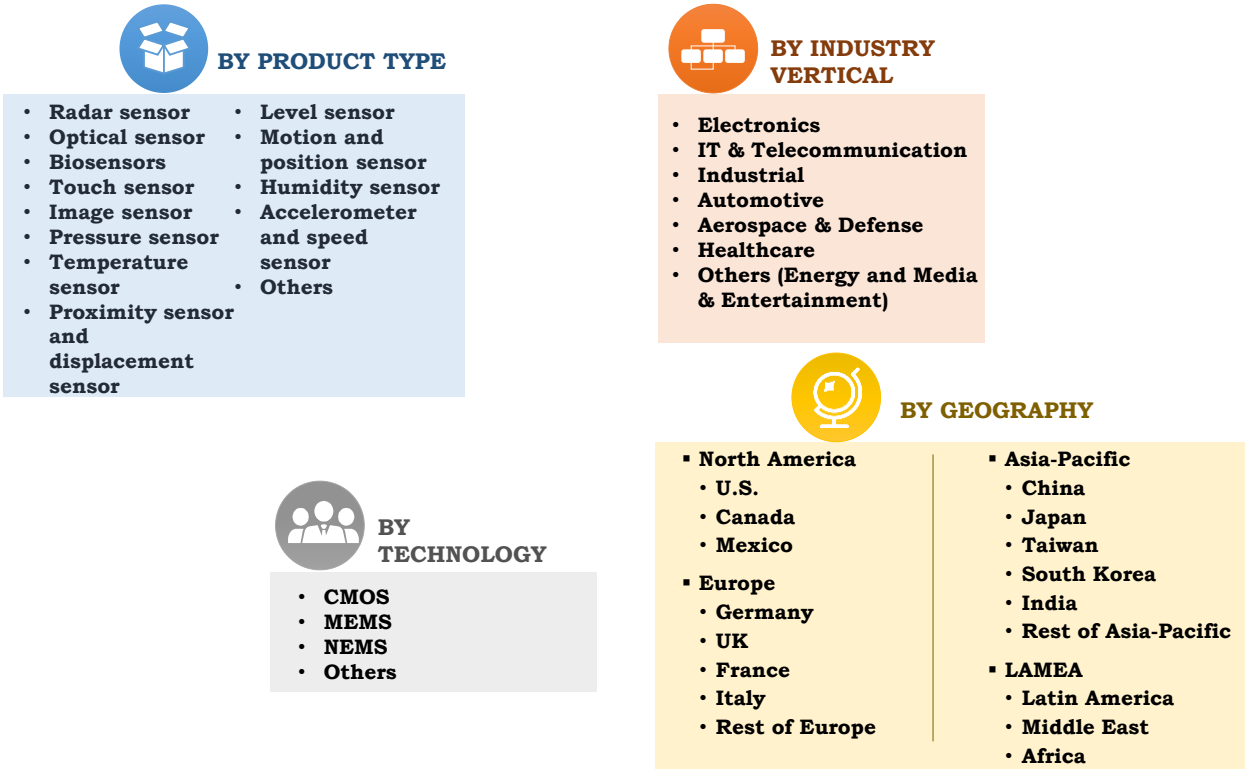
1.2. KEY BENEFITS

- ✓ The report provides an in-depth analysis of the sensor market across major geographies as well as the estimated revenues generated during the forecast period.
- ✓ Quantitative analysis of the current market and estimations from 2014 to 2022 in order to help the manufacturers of sensors to analyze the market.
- ✓ The entire projections in the report are based on analysis of the current market trends and highlight the market potential for the period of 2016–2022, in terms of value.
- ✓ The report conducts extensive analysis of the market by closely following key product positioning and monitoring the top contenders within the market framework.
- ✓ The report also provides quantitative as well as qualitative market trends to help the stakeholders in understanding the situations prevailing in the market.

1.3. KEY MARKET SEGMENTS

The world sensor market segmentation is illustrated below.

FIGURE 1. MARKET SEGMENTATIONS



Source: AMR Analysis

1.4. RESEARCH METHODOLOGY

With collective industry experience of about 200 years of its analysts and experts, Allied Market Research (AMR) encompasses the most infallible research methodology for its market intelligence and industry analysis. We not only engrave the deepest levels of markets but also sneak through its slimmest details for the purpose of our market estimates and forecasts. Our approach helps in building greater market consensus view for size, shape, and industry trends within each industry segment. We carefully factor industry trends and real developments for identifying key growth factors and future course of the market. Our research proceeds are the resultant of high-quality data, expert views and analysis, and high-value independent opinions. Our research process is designed to deliver a balanced view of the global markets and allow stakeholders to make informed decisions to attain their highest growth objectives. AMR offers its clients exhaustive research and analysis, based on a wide variety of factual inputs, which largely include interviews with industry participants, reliable statistics, and regional intelligence. The in-house industry experts play an instrumental role in designing analytic tools and models, tailored to the requirements of a particular industry segment. These analytical tools and models distill the data & statistics and enhance the accuracy of our recommendations and advice. With AMR's calibrated research process and 360-degree data evaluation methodology, the clients receive:

- Consistent, valuable, robust, and actionable data & analysis that can easily be referenced for strategic business planning
- Technologically sophisticated and reliable insights through well-audited and veracious research methodology
- Sovereign research proceeds that present a tangible depiction of the marketplace

With a strong methodology AMR ensures that its research and analysis is most reliable and guarantees sound business planning

For this research report, over 12 hours of interviews and discussion have been conducted, with a wide range of stakeholders, including upstream and downstream participants. Primary research typically is a bulk of our research efforts; but it is coherently supported by extensive secondary research. Over 2,756 product literatures, industry releases, annual reports, and other such documents of key industry participants, have been reviewed to understand the market better and gain competitive intelligence. In addition, authentic industry journals, trade association releases, and government websites have also been reviewed for generating high-value industry insights.

1.4.1. Secondary research

AMR refers to a broad array of industry sources for our secondary, which typically include; but is not limited to:

- Company SEC filings, annual reports, company websites, broker & financial reports, and investor presentations for competitive scenario and shape of the industry
- Patent and regulatory databases for understanding of technical & legal developments
- Scientific and technical writings for product information and related preemptions
- Regional government and statistical databases for macro-analysis
- Authentic new articles, web-casts, and other related releases for market evaluation
- Internal and external proprietary databases, key market indicators, and relevant press releases for market estimates and forecasts.

1.4.2. Primary research

The primary research efforts include reaching out to participants through mail, tele-conversations, referrals, professional networks, and face-to-face interactions. AMR also maintains professional corporate relations with various companies that allow us greater flexibility in reaching out to industry participants and commentators for interviews and discussions, which fulfills the following functions:

- Validates and improves the data quality and strengthens research proceeds
- Further develops analyst team's market understanding and expertise
- Supplies authentic information about market size, share, growth, and forecast

The primary research interview and discussion panels are typically composed of the most experienced industry members. These participants include, however, are not limited to:

- Chief executives and VPs of leading corporations specific to the industry
- Product and sales managers or country heads; channel partners and top-level distributors; banking, investment, and valuation experts
- Key opinion leaders (KOLs)

1.4.3. Analyst tools and models

AMR has developed set of analyst tools and data models to supplement and expedite the analysis process. Corresponding to markets, where there is significant lack of information and estimates, to translate qualitative and quantitative industry indicators into exact industry estimates. These models also allow analysts to examine the prospects and opportunities prevailing in the market to accurately forecast the course of the market.

CHAPTER 3 MARKET OVERVIEW

3.1. MARKET DEFINITION AND SCOPE

The report analyzes the world sensor market including technologies used for manufacturing and different types of sensors. Sensor is a device that detects physical input such as light, heat, motion, moisture, pressure, or any other entity, and responds by producing an output on a display or transmits the information in electronic form for further processing. The sensor types included are radar sensor, optical sensor, biosensors, touch sensor, image sensor, pressure sensor, temperature sensor, proximity sensor and displacement sensor, level sensor, motion and position sensor, humidity sensor, accelerometer and speed sensor, and others.

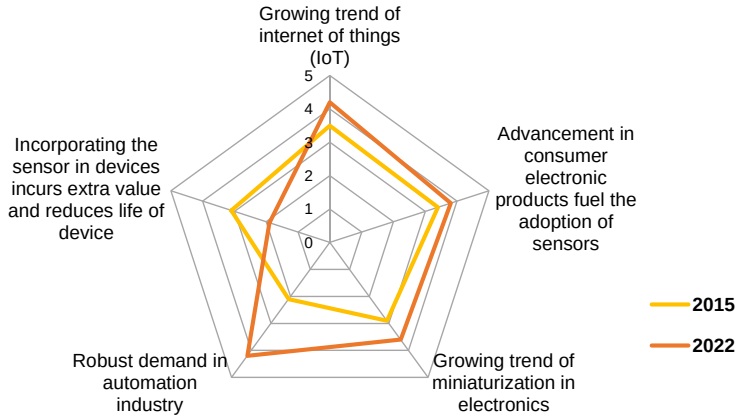
The Technology segment is sub-segmented into CMOS, MEMS, NEMS, and others; Industry vertical segment is divided into electronics, IT & telecommunication, industrial, automotive, aerospace & defense, healthcare, and others (renewable energy and media & entertainment). Geographically, the market is analyzed across North America, Europe, Asia-Pacific, and LAMEA. Asia-Pacific significantly contributed to the global market in 2015, and is projected to maintain this trend during the forecast period. It has emerged as the largest market for sensors due to considerable growth of consumer electronic and photovoltaic industries in developing countries such as China, India, and Taiwan.Further, the report covers Porter's five forces and value chain analyses of the market, which comprises of raw material suppliers, sensor manufacturers, and end users that assist stakeholders to devise appropriate strategies and develop their businesses. The key manufactures operating in the market are STMicroelectronics, NXP semiconductors, Infineon Technologies AG, Qualcomm Technologies, Inc., Atmel Corporation, Texas instruments Incorporated, Robert Bosch GmbH, Johnson controls, Sony Corporation, and Honeywell International Inc. among others.

3.2. KEY FINDINGS

3.2.1. Top Impacting Factors

Growing trend of internet of things (IoT); Sensors are intrinsic components for the Internet of Things (IoT) technology to function properly. IoT works on the basis of feedback given by various sensors installed on the devices connected together through wireless network. The number of connected devices through IoT has considerably increased in last 4-5 years, and the government initiatives in developed nations and investment by major companies ensure that this trend will continue in years to come which will foster the demand of sensors.

FIGURE 4. TOP IMPACTING FACTORS



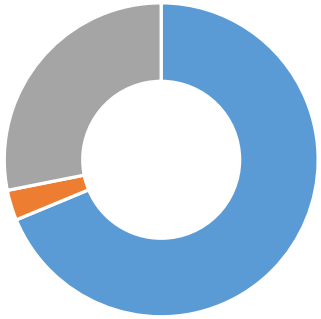
Source: Primary Research, Secondary Research, Company Releases, and AMR Analysis

3.2.2. Top winning strategies

The leading players in the world sensor market have adopted various strategies to garner additional market share. The information for strategic analysis presented in this section is gathered from the press releases and annual reports of market players; and are limited to publicly available information and primary calls. The key strategies adopted by the players include:

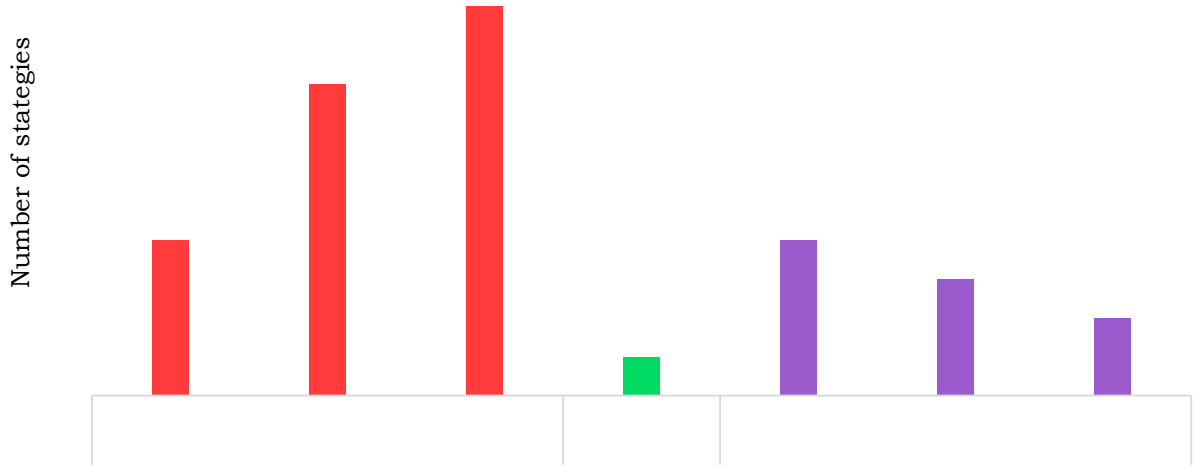
- ✓ **Product launches:** Launch of new products with improved features and applications.
- ✓ **Partnerships:** Joint ventures, agreements, or collaborations by market players in order to enhance capabilities and market reach.
- ✓ **Expansion:** Extending the market reach in terms of geographies, product portfolio, or other aspects.

FIGURE 5. TOP WINNING STRATEGIES: PERCENTAGE DISTRIBUTION (2014 – 2016)



Source: Primary Research, Secondary Research, Company Releases, and AMR Analysis

FIGURE 6. TOP WINNING STRATEGIES: NATURE AND TYPE



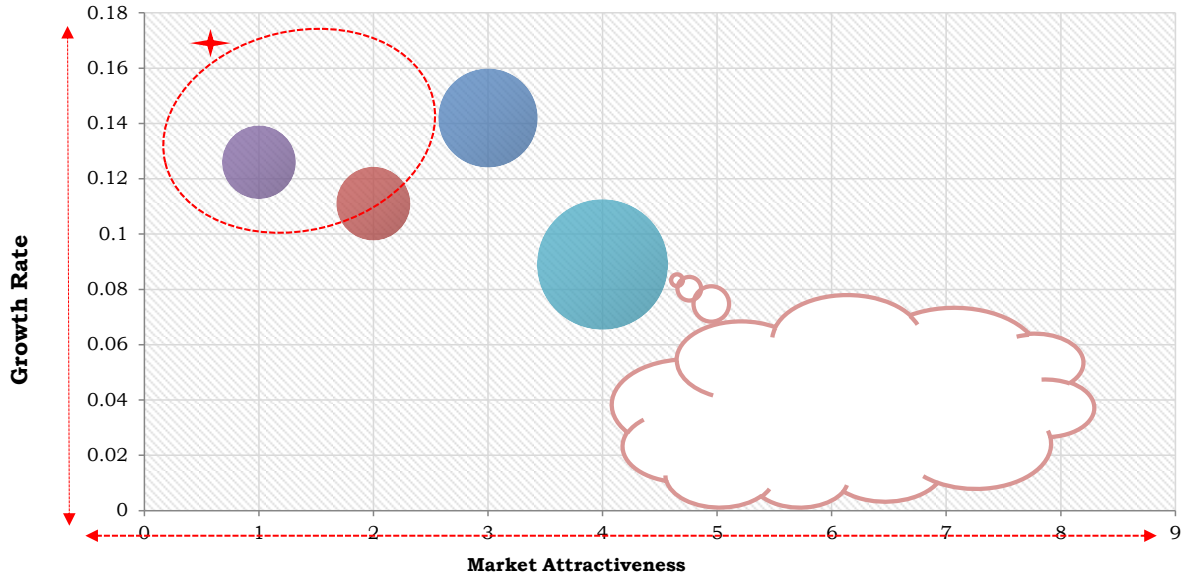
Note: The chart highlights key growth opportunities by adopting various strategies e.g. Acquisitions can help in expansions and strengthening product offerings

Source: Primary Research, Secondary Research, Company Releases, and AMR Analysis

3.2.3. Top investment pockets

The world sensor market is segmented based on type, technology, industry vertical, and geography. The technology market is further segmented into four categories mainly complementary metal–oxide–semiconductor (CMOS), micro-electro-mechanical systems (MEMS), nano-electro-mechanical systems (NEMS), and others (optical spectroscopy, microsystem technology, application-specific integrated circuit, and hybrid sensor).

FIGURE 7. TOP INVESTMENT POCKETS IN SENSOR MARKET, BY TECHNOLOGY



Note: The highlighted portion reflects the top two investment segments for stakeholders since they are growing and have higher opportunity in the World sensor market during the forecast period

Source: Primary Research, Government Publications, Company Releases, and AMR Analysis

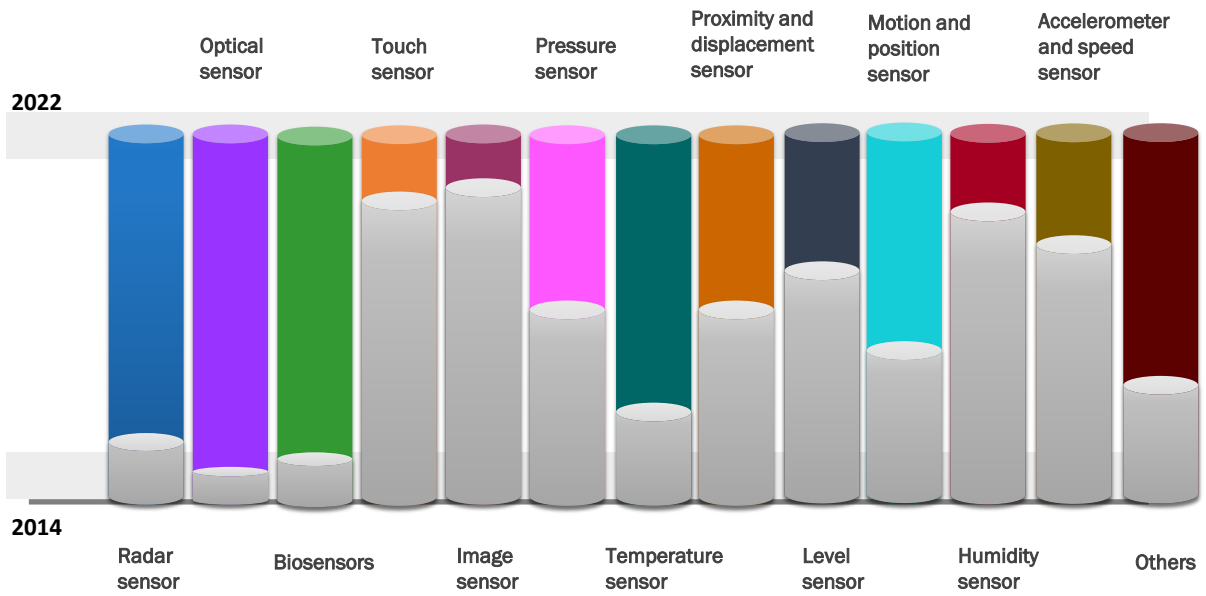
3.4. MARKET SHARE ANALYSIS, 2015

FIGURE 9. MARKET SHARE ANALYSIS, 2015

Source: Primary Research, Government Publications, Company Releases, and AMR Analysis

CHAPTER 4 WORLD SENSOR MARKET, BY TYPE

FIGURE 13. WORLD SENSOR MARKET, BY TYPE



Source: AMR analysis and Secondary Research

4.1. OVERVIEW

Sensor types comprise of image sensor, proximity sensor & displacement sensor, optical sensor, touch sensor, biosensors, level sensor, pressure sensor, temperature sensor, humidity sensor, radar sensors, accelerometer & speed sensor, motion & position sensor, and others. Image sensors have emerged as the most popular sensors and are under extensive research and development.

4.1.1. Market size and forecast

TABLE 3 SENSOR MARKET, BY TYPE, 2014–2022 ($MILLION)

Type	2014	2015	2016	2017	2018	2019	2020	2021	2022	CAGR% (2016–2022)
Radar sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Optical sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Biosensors	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Touch sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Image sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Pressure sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Temperature sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Proximity sensor and displacement sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Level sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Motion and position sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Humidity sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Accelerometer and speed sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Others	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Total	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx

Source: Primary Research, Government Publications, Company Releases, and AMR Analysis

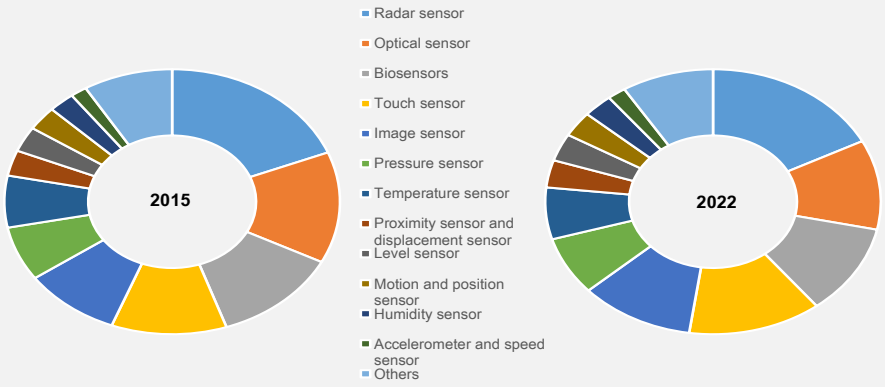
FIGURE 14. WORLD SENSOR MARKET, BY TYPE, REVENUE & CAGR

TYPE

SENSOR MARKET, BY TYPE, 2014–2022

PRODUCT TYPES	MARKET SIZE (2022)	CAGR % (2016-2022)
Radar sensor		
Optical sensor		
Biosensors		
Touch sensor		
Image sensor		
Pressure sensor		
Temperature sensor		
Proximity sensor and displacement sensor		
Level sensor		
Motion and position sensor		
Humidity sensor		
Accelerometer and speed sensor		
Others		

SENSOR MARKET, BY TYPE, 2015–2022 ($MILLION)



Source: AMR analysis and Secondary Research

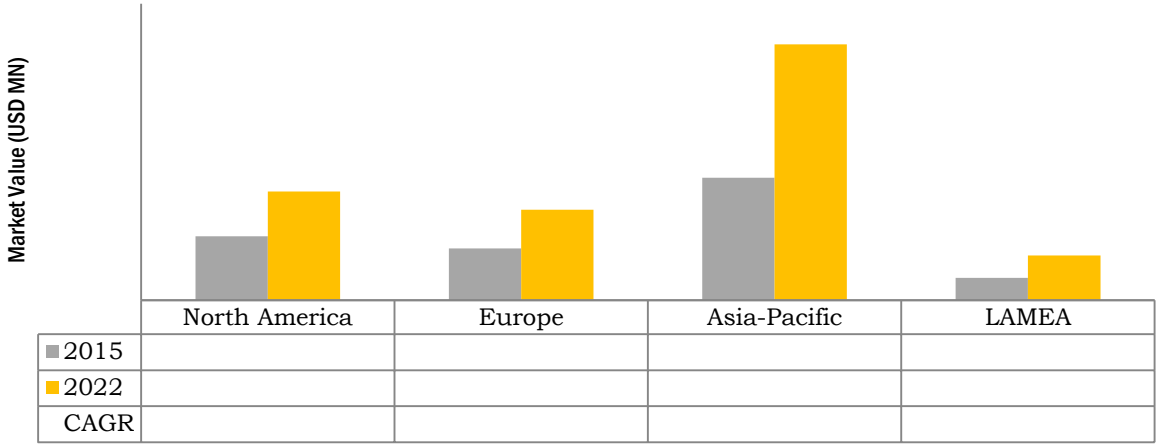
4.2. RADAR SENSOR

Radar sensors transmit radiations at radio frequency and use the intercepted return to derive the properties of the earth's surface. Radar sensors provide very unique advantages in varied applications in automotive, aerospace & defense, industrial, security & surveillance, traffic monitoring & management, environmental & weather monitoring, medical, healthcare, agricultural sectors, and applications in construction machines and smart electronic devices.

4.2.1. Key market trends

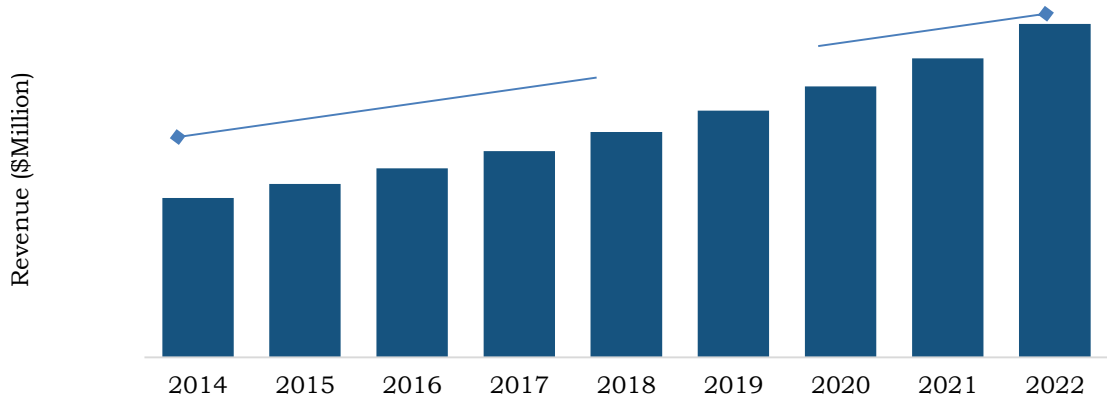
Applications involving radar systems have come a long way over the years. Radar sensors are a standard technique for tank level probing in various industrial applications. Therefore, radar sensor could become feasible as a replacement for expensive laser-interferometer based calibration devices in the future. For instance, in 2015, NXP acquired Freescale which gave it a strong portfolio of microcontrollers, especially for radar. This has strengthened NXP's foothold in the market for self-driving cars. Radar systems are also used to assist visually impaired individuals in navigation.

FIGURE 15. RADAR SENSOR MARKET ANALYSIS, 2015-2022 ($MILLION)



Source: Primary Research, Government Publications, Company Releases, and AMR Analysis

FIGURE 16. MARKET REVENUE & FORECAST OF RADAR SENSOR MARKET, 2014–2022 ($MILLION)



Source: Primary Research, Government Publications, Company Releases, and AMR Analysis

4.2.2. Growth factors and opportunities

The major factors for the growth of radar sensor market are increasing benefits of radar sensors compared to other remote sensing technologies, increasing adoption of radar sensors for various applications, and comfort, safety & assistance features offered by the usage of radar sensors.

4.2.3. Market size and forecast

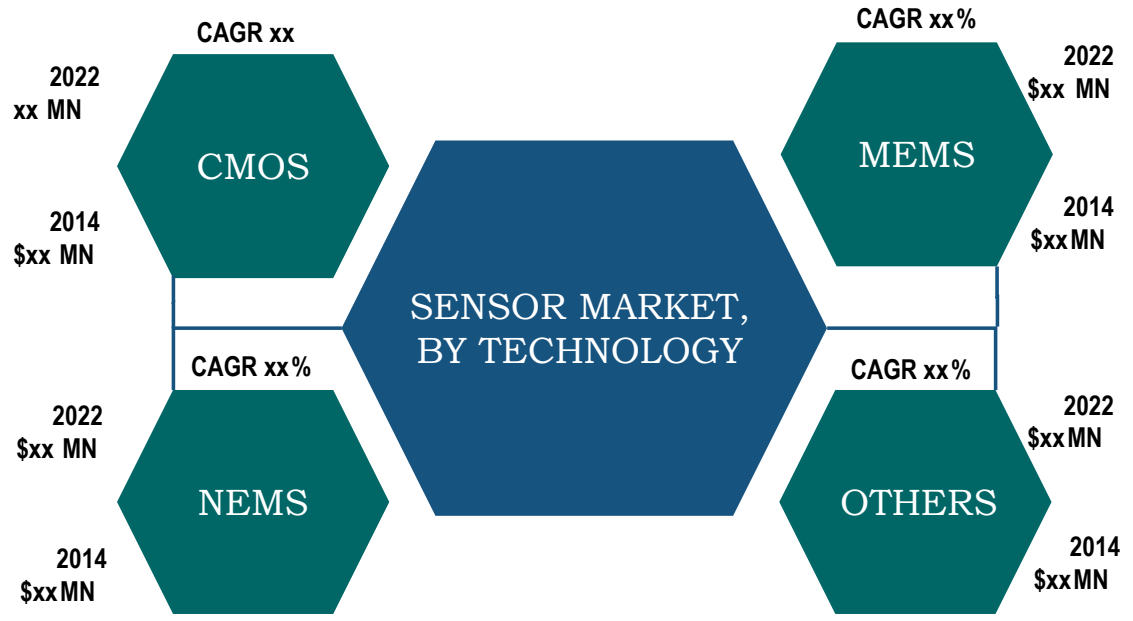
RADAR SENSOR MARKET, BY REGION, 2014–2022 ($MILLION)

Region	2014	2015	2016	2017	2018	2019	2020	2021	2022	CAGR% (2016–2022)
North America	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Europe	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Asia-Pacific	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
LAMEA	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Total	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx

Source: Primary Research, Government Publications, Company Releases, and AMR Analysis

CHAPTER 5 WORLD SENSOR MARKET, BY TECHNOLOGY

FIGURE 41. WORLD SENSOR MARKET, BY TECHNOLOGY



Source: AMR Analysis

5.1. OVERVIEW

The sensor market comprises of various technologies which include CMOS, MEMS, NEMS, and others (optical spectroscopy, microsystem technology, ASIC, and hybrid sensor). These sensor technologies are majorly used in distinct sensors, such as CMOS technology is used majorly in image sensors, MEMS technology based sensors comprise of pressure sensor, accelerometer, gyroscope, pressure sensor, and biosensor among others. NEMS is relatively new technology and it is used in relays, mass spectrometer, and healthcare related sensors among others.

5.1.1. Market size and forecast

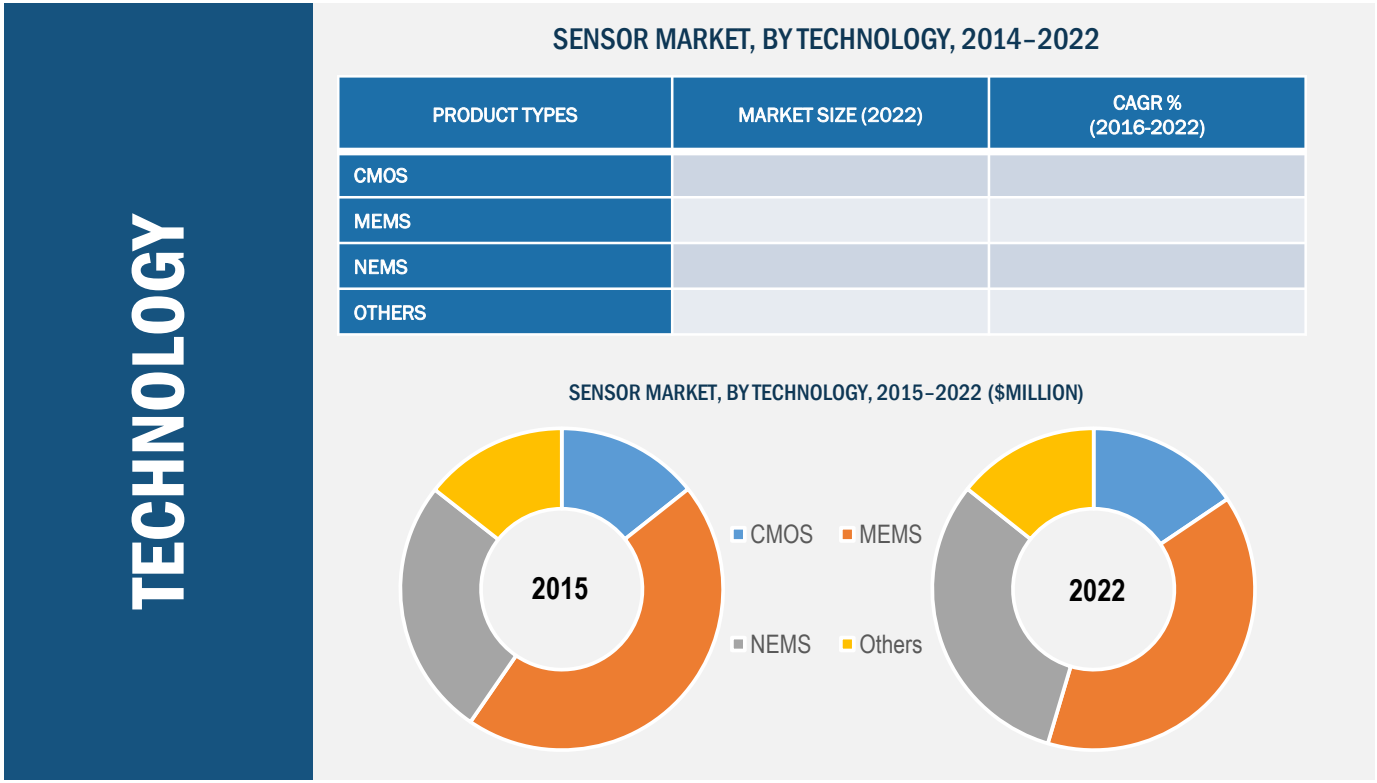
The world sensor market, by technology, is estimated to reach a market size of $XX million by 2022, as compared to $XX million in 2015, growing at a CAGR of XX% from 2016 to 2022.

TABLE 17 SENSOR MARKET, BY TECHNOLOGY, 2014–2022 ($MILLION)

Technology	2014	2015	2016	2017	2018	2019	2020	2021	2022	CAGR % (2016–2022)
CMOS	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
MEMS	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
NEMS	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Others	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Total	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx

Source: Primary Research, Government Publications, Company Releases, and AMR Analysis

FIGURE 42. WORLD SENSOR MARKET, BY TECHNOLOGY, REVENUE & CAGR



Source: AMR Analysis

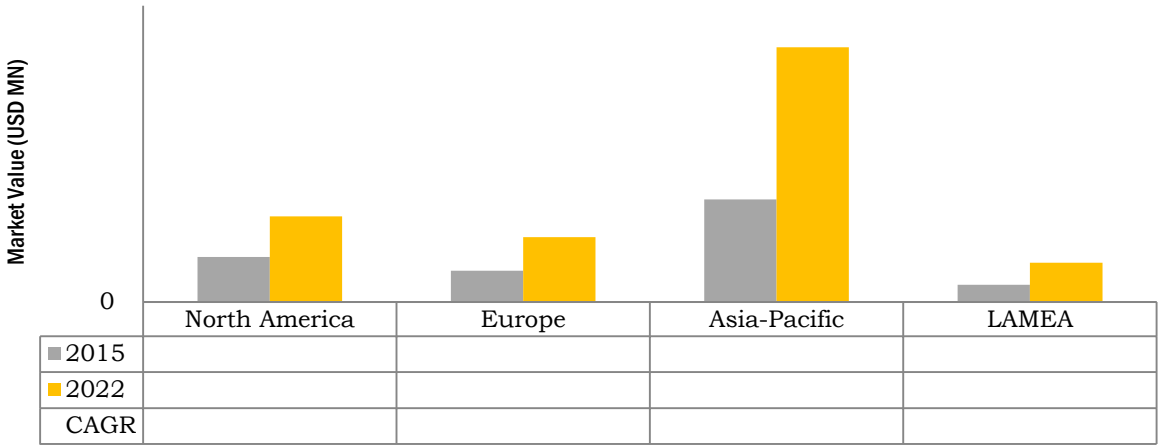
5.2. CMOS

The Complementary metal–oxide–semiconductor (CMOS) technology with active pixels is used in image sensors that are used in cameras, and widely used across various appliances such as smartphones, tablets, laptops, and low-end digital and surveillance cameras. Low cost, decent picture quality, and application in various devices such as mobile phones, tablets, and laptops among others are the factors driving the growth in the demand of CMOS sensor across the globe.

5.2.1. Key market trends

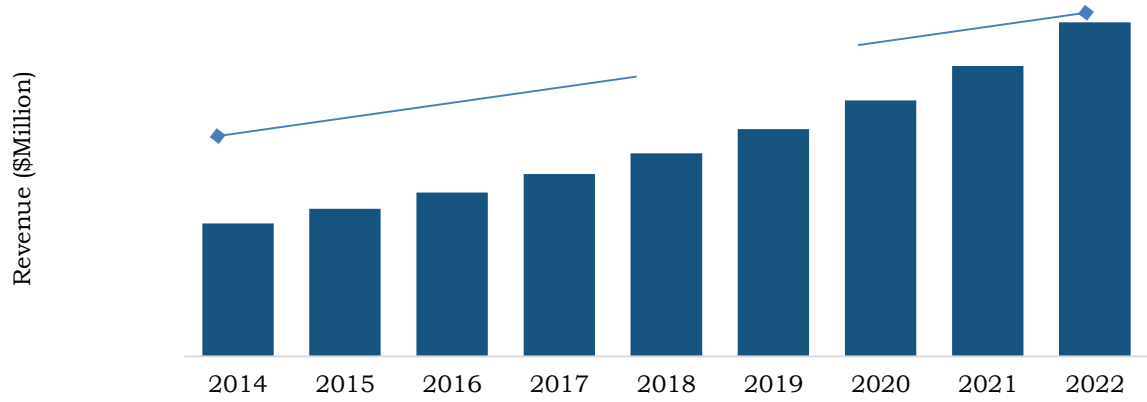
The CMOS technology holds almost three fourth of the whole image sensor market, however, in overall sensor market the CMOS technology shares the least share as it is majorly used in image sensor only. The major companies manufacturing image sensors, such as, Sony, Panasonic, Samsung, and Canon among others, invest heavily on research & development to keep ahead of the others in the market. For instance, in the year 2014, Sony has launched the world's highest sensitive CMOS image sensor for automotive cameras. Furthermore, Canon has launched an image sensor with global shutter mode of operation which creates pictures without any distortion.

FIGURE 43. CMOS SENSOR MARKET ANALYSIS, 2015-2022 ($MILLION)



Source: Primary Research, Government Publications, Company Releases, and AMR Analysis

FIGURE 44. MARKET REVENUE & FORECAST OF CMOS SENSOR MARKET, 2014–2022 ($MILLION)



Source: Primary Research, Government Publications, Company Releases, and AMR Analysis

5.2.2. Growth factors and opportunities

The innovation in consumer electronics has increased the penetration of camera in daily life through smartphones, tablets, laptops, and personal computers among others. These low end cameras use CMOS image sensor as these sensors comparatively incur less cost and produce decent image quality. Growing industrialization has considerably increased the need of cameras for security and surveillance, most of which use CMOS image sensors owing to its easy availability and less price. The growing smartphone industry and growth in security and surveillance has opened new opportunities for CMOS image sensors and the market is anticipated to grow in years to come.

5.2.3. Market size and forecast

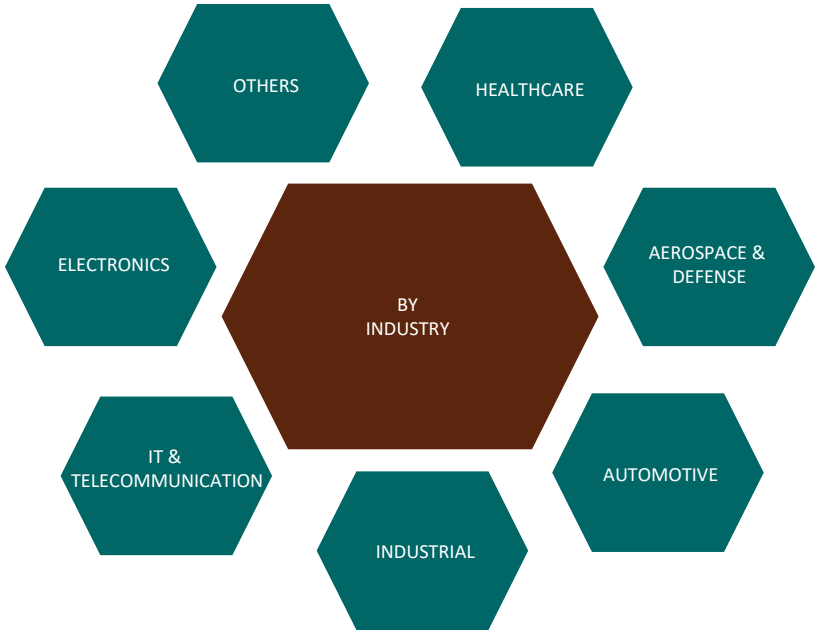
TABLE 18 CMOS SENSOR MARKET, BY REGION, 2014–2022 ($MILLION)

Region	2014	2015	2016	2017	2018	2019	2020	2021	2022	CAGR% (2016–2022)
North America	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Europe	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Asia-Pacific	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
LAMEA	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Total	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx

Source: Primary Research, Government Publications, Company Releases, and AMR Analysis

CHAPTER 6 WORLD SENSOR MARKET, BY INDUSTRY VERTICAL

FIGURE 51. WORLD SENSOR MARKET, BY INDUSTRY VERTICAL



Source: Primary Research, Government Publications, Company Releases, and AMR Analysis

6.1. OVERVIEW

On the basis of industry verticals, sensor market is segmented into electronics, IT & telecommunication, Industrial, Automotive, Aerospace & Defense healthcare, and others (Energy and Media & Entertainment). The electronics segment dominates the overall sensor market by claiming about two third part of the overall market share as it includes devices such as smartphones, laptops, digital cameras, T.V. sets, and digital recorders among others which incorporate a wide range of sensors like accelerometer, gyroscope, image sensor, pressure sensor, fingerprint scanner, and touch sensor among others for their operation. The sensors are used in other industry verticals such as industrial sector, aerospace & defense, and others for enabling automation.

6.1.1. Market size and forecast

TABLE 22 SENSOR MARKET, BY INDUSTRY VERTICAL, 2014–2022 ($MILLION)

Industry Vertical	2014	2015	2016	2017	2018	2019	2020	2021	2022	CAGR% (2016–2022)
Electronics	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
IT & Telecommunication	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Industrial	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Automotive	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Aerospace & Defense	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Healthcare	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Others	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Total	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx

Source: Primary Research, Government Publications, Company Releases, and AMR Analysis

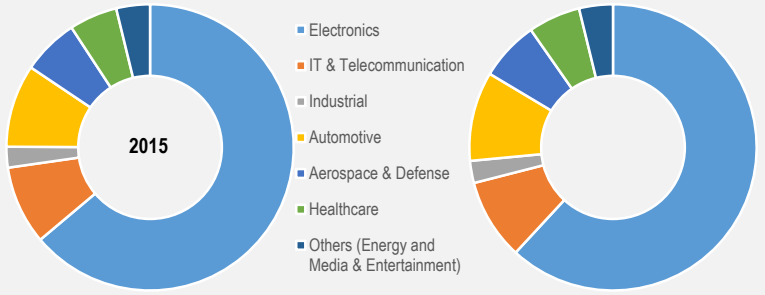
FIGURE 52. WORLD SENSOR MARKET, BY INDUSTRY VERTICAL, REVENUE & CAGR

INDUSTRY

SENSOR MARKET, BY TECHNOLOGY, 2014–2022

PRODUCT TYPES	MARKET SIZE (2022)	CAGR % (2016-2022)
Electronics		
IT & Telecommunication		
Industrial		
Automotive		
Aerospace & Defense		
Healthcare		
Others		

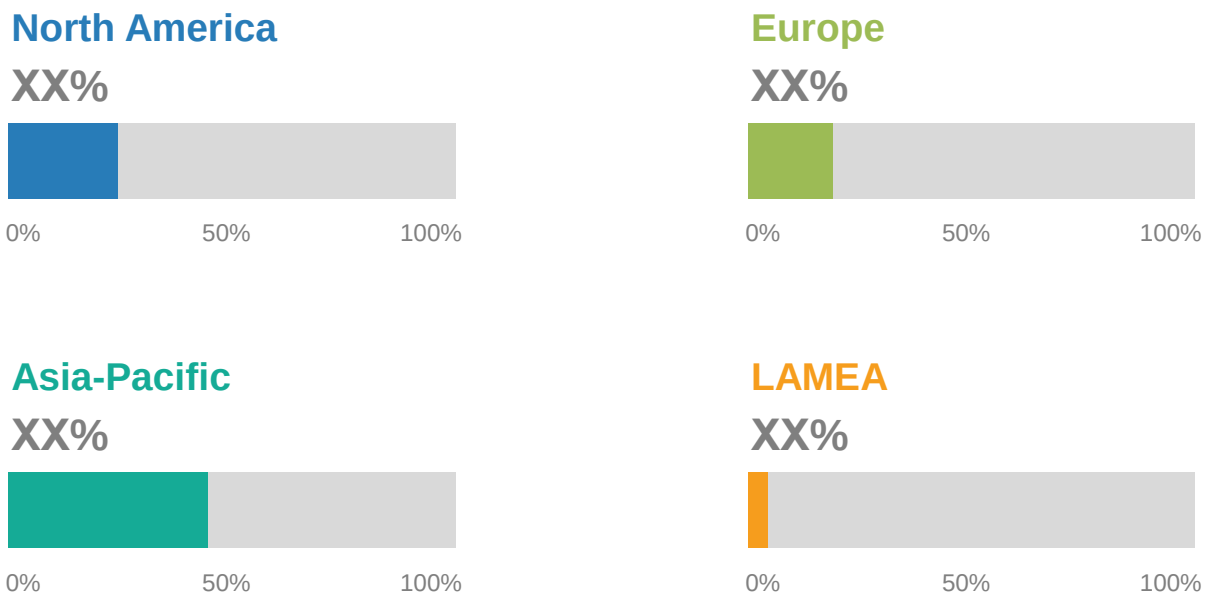
SENSOR MARKET, BY INDUSTRY, 2015–2022 ($MILLION)



Source: Primary Research, Government Publications, Company Releases, and AMR Analysis

CHAPTER 7 WORLD SENSOR MARKET, BY GEOGRAPHY

FIGURE 67. WORLD SENSOR MARKET, BY GEOGRAPHY



Source: AMR Analysis

7.1. OVERVIEW

The geographical analysis of world sensor market covers North America, Europe, Asia-Pacific, and LAMEA. North American region includes U.S., Canada, and Mexico. Europe is segmented into Germany, UK, France, Italy, and Rest of Europe which includes the remaining European countries. Asia-Pacific includes China, India, Japan, South Korea, Taiwan, and Rest of Asia-Pacific. LAMEA region includes Latin America, Middle East, and Africa.

The sensor market is diversified and has global presence based on sensor production and supply. Asia-Pacific leads the market of sensor technology throughout the analysis period followed by North America and Europe. This trend is prevailing, owing to the expanding electronics industry and investment by companies on research development to fulfill the need of automated systems.

TABLE 30 SENSOR MARKET, BY REGION, 2014–2022 ($MILLION)

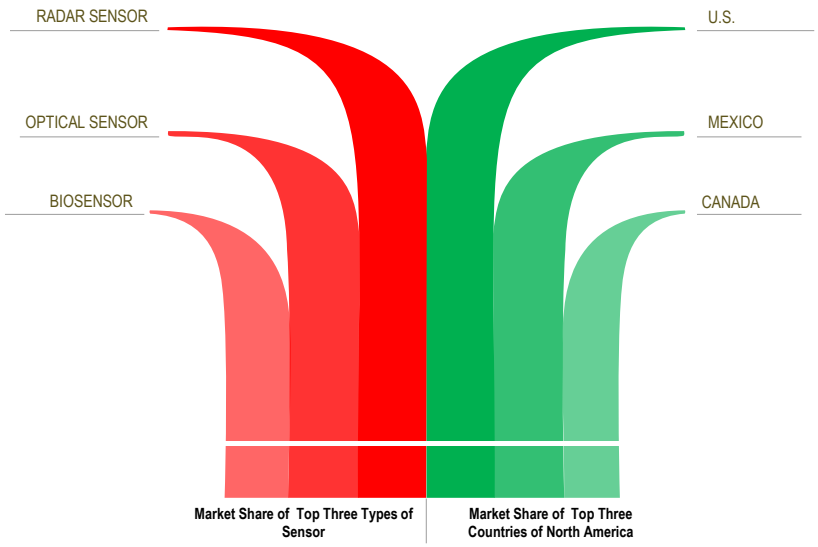
Region	2014	2015	2016	2017	2018	2019	2020	2021	2022	CAGR% (2016–2022)
North America	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Europe	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Asia-Pacific	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
LAMEA	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Total	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx

Source: Primary Research, Government Publications, Company Releases, and AMR Analysis

7.2. NORTH AMERICA

North America has emerged as the second largest region in world sensor market however; the growth in world sensor market in North America region is expected to be the slowest as compared to the other parts of the world. The reason behind sluggish growth rate is that most of the companies of the region have located their production facilities outside the region mostly in countries such as China, South Korea, and Japan among others, owing to reduced costs and availability of cheap labor along with raw materials.

FIGURE 68. NORTH AMERICA SENSOR MARKET



Source: Primary Research, AMR Analysis

7.2.1. Key market trends

Consumer electronics dominate the sensor market in overall North America region. Rising demand of smartphones and other electronics products, ongoing research and development regarding driverless cars by major American companies such as Google & Tesla, and growing aviation industry drives the need of sensors such as image sensor, radar sensor, touch sensors, and optical sensors are gaining a grip in the market over other type of sensors. The MEMS technology based sensors which include gyroscope, accelerometer, speed sensor, pressure sensor, and proximity sensor among others have more implementation than other technologies as these are highly used in electronics and aerospace & defense, two industries which constitute more than two third of the overall North American sensor market. The market is anticipated to witness a slow paced growth as compared to all the four regions owing to a comparatively saturated electronics market in comparison to Asia-Pacific and Europe.

7.2.2. Growth factors and opportunities

The sensor market in the region is predominant by electronics industry, which is followed by IT & telecom, industrial, and automotive sector. The growth prospect of sensor market in the region is majorly propelled by the increasing number of electronic devices which incorporate a major share of overall sensors used in the region. Automation in automotive industry and growing trend of driverless cars is yet another reason behind the growth of sensor market as the sensors such as proximity sensor, image sensor, and displacement sensor among others are an integral part of any driverless cars. The investments by leading players operating in the region are anticipated to drive the growth of sensor market in the North America.

7.2.3. Market size and forecast

FIGURE 69. NORTH AMERICA SENSOR MARKET, REVENUE & CAGR, 2015-2022

Percentage share 2015–

Canada has the highest CAGR%

Radar sensor have the highest share in the region.

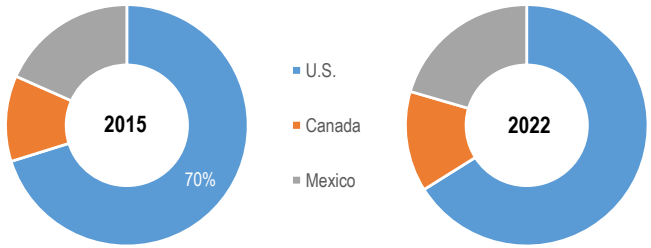
NORTH AMERICA SENSOR MARKET, 2015 ($MILLION)

COUNTRY	MARKET SIZE	CAGR % (2014-2022)
U.S.		
Canada		
Mexico		

FACTORS SUPPORTING THE GROWTH OF THE SENSOR MARKET IN NORTH AMERICA

- The sensor market in the region is predominant by electronics iXXXXXXXXXXXXXX
- automation in automotive industry andXXXXXXXXXXXXXXX
- The growth prospect of sensor market iXXXXXXXXX

SENSOR MARKET SIZE, 2015-2022 ($MILLION)



NORTH AMERICAN SENSOR MARKET, BY TECHNOLOGY (2015)

CMOS	MEMS
$ XX Million	$XX Million
NEMS	OTHERS
$XX Million	$XX Million

Source: Primary Research, AMR Analysis

TABLE 31 NORTH AMERICA: SENSOR MARKET, BY TYPE, 2014–2022 ($MILLION)

Type	2014	2015	2016	2017	2018	2019	2020	2021	2022	CAGR% (2016–2022)
Radar sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Optical sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Biosensors	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Touch sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Image sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Pressure sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Temperature sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Proximity sensor and displacement sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Level sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Motion and position sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Humidity sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Accelerometer and speed sensor	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Others	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Total	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx

Source: Primary Research, Government Publications, Company Releases, and AMR Analysis

TABLE 32 NORTH AMERICA: SENSOR MARKET, BY TECHNOLOGY, 2014–2022 ($MILLION)

Technology	2014	2015	2016	2017	2018	2019	2020	2021	2022	CAGR% (2016–2022)
CMOS	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
MEMS	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
NEMS	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Others	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Total	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx

Source: Primary Research, Government Publications, Company Releases, and AMR Analysis

TABLE 33 NORTH AMERICA: SENSOR MARKET, BY INDUSTRY VERTICAL, 2014–2022 ($MILLION)

Industry Vertical	2014	2015	2016	2017	2018	2019	2020	2021	2022	CAGR% (2016–2022)
Electronics	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
IT & Telecommunication	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Industrial	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Automotive	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Aerospace & Defense	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Healthcare	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Others	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Total	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx

Source: Primary Research, Government Publications, Company Releases, and AMR Analysis

TABLE 34 NORTH AMERICA: SENSOR MARKET, BY COUNTRY, 2014–2022 ($MILLION)

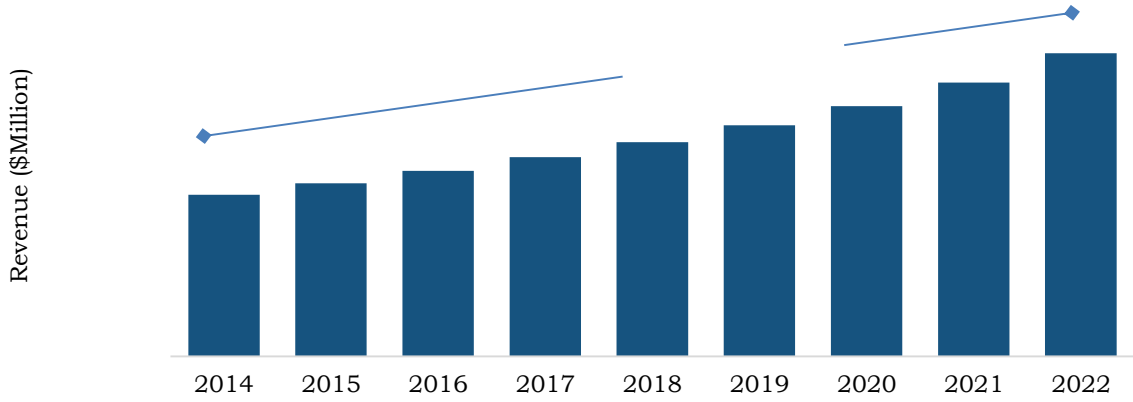
Country	2014	2015	2016	2017	2018	2019	2020	2021	2022	CAGR% (2016–2022)
U.S.	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Canada	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Mexico	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Total	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx

Source: Primary Research, Government Publications, Company Releases, and AMR Analysis

7.2.4. U.S.

7.2.4.1. Market size and forecast

FIGURE 70. U.S.: SENSOR MARKET SIZE, 2014-2022 ($MILLION)



Source: Primary Research, Government Publications, and AMR Analysis

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