3D Medical Imaging Market - Global Outlook and Forecast 2022-2027

Market Report | 2022-08-23 | 288 pages | Arizton Advisory & Intelligence

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Report description:

The global 3D medical imaging market is expected to grow at a CAGR of 6.41% during 2022-2027.

3D medical imaging is a technology that provides enlarged, in detail images of the interior body for medical analysis by utilizing 3D imaging modalities. This technology is one of the revolutionary products which provides an enriched image of the interior body for medical analysis. Medical imaging has grown long from the initial days of CT scanners and MRIs. 3D imaging is the new trend in the medical imaging area. It utilizes medical imaging data sets to create 3D models with the help of emerging technologies like AI and Deep Learning.

3D medical imaging is a burgeoning market that is transforming radiological diagnosis and surgical planning. 3D imaging provides clear and accurate views that can quickly summarize the relationship between anatomic structures for planning surgical procedures before and during the operating room. Some of the advantages of 3D medical imaging include less damage to healthy tissues and a lower risk of complications for the patient, which contributes to lower surgical mortality. Reduced costs resulting from increased diagnostic sensitivity across all specialties and shorter operating time per procedure. 3D imaging services have become an essential component of radiologists' clinical workflows in various specialties, including vascular, orthopedic, chest, breast MR, gastrointestinal, emergency, and pediatric exams.

MARKET SYNOPSIS

The market is witnessing significant growth, expected to continue at a good pace during the forecast period. The market's healthy development is attributable to the surge in the adoption of 3D medical imaging specialties and modalities worldwide. The market is observing significant growth because of the rise in awareness of advanced imaging technologies among radiologists to quickly ease their workload with enhanced images, increased sensitivity, and accuracy. The market is also experiencing growing investments in implementing AI in medical imaging to develop advanced software for converting 2D image files to 3D images.

3D medical imaging is already used in high-income countries to improve the speed and accuracy of disease diagnosis and help

with clinical care. Also, 3D imaging technologies are instrumental in supporting treatment and advancing surgeries. Adopting 3D medical imaging solutions could also allow resource-poor countries and rural communities to overcome challenges such as the surge in disease prevalence, diagnostic errors, and delayed diagnosis.

Additionally, the 3D imaging systems trained primarily with data from high-income countries may not work well for low-and middle-income countries. Therefore, 3D imaging systems are carefully designed to reflect the diversity of health-related and socio-economic frameworks. It must be accompanied by training in digital skills, community participation, improved IT infrastructure, and awareness, especially for millions of health workers/physicians/radiologists who need digital literacy or restraining when their roles and functions are automated and who struggle with machines that make decisions and have autonomy. The market is being driven by the surge in diagnostic imaging procedures due to the rise in the prevalence of chronic illnesses and the adoption of advanced imaging techniques. Also, the increase in the geriatric population globally and its high dependency on health services propel market growth. Other factors such as R&D initiatives coupled with favorable health policies of various national governments are anticipated to boost the market growth in the forecast period.

TECHNOLOGICAL ADVANCEMENTS

a) To cater to the growing demand for 3D medical imaging technologies, vendors focus more on developing advanced 3D medical imaging technologies to meet the current unmet medical imaging needs. As a result, several companies are focused on implementing an AI implementation to generate 3D images faster with better accuracy. For instance, ImFusion company offers consulting, research, and development in advanced medical image computing technologies and computer vision built an AI tool to turn 2D ultrasound data into 3D images. PIUR IMAGING, a medical technology manufacturer in Austria, also offers AI-based remote image analysis. Its cloud-based remote expert service facilitates image analysis and speeds up time-consuming 3D measurements using AI technology.
b) Various companies are producing actual hologram systems focused on medical imaging. Digital 3D holographic imaging technology has given surgery an auspicious result. This technology can use MRI data and CT scans to produce 3 holograms of the images. These holograms give surgeons much better insights into the patient's pathological and anatomical condition. Several ongoing research studies have demonstrated how a holographic video stream of the desired anatomical structure is generated by gathering 3D images from a conventional X-ray system and a "holographic video projector."

SEGMENTATION ANALYSIS

Segmentation by Modality
- X-Ray
- Ultrasound
- CT
- MRI
- Others

Segmentation by Speciality
- Oncology
- Cardiology
- Obstetrics & gynecology
- Orthopedic
- Neurology
- Others

Segmentation by End-User

-Hospitals
-Diagnostic Imaging Centers
-Others

GEOGRAPHY ANALYSIS

North America leads the way in the adoption of 3D medical imaging systems. The presence of a large patient population and improved adoption of 3D medical imaging software and hardware are the primary reasons for its large market share. In North America, key 3D medical imaging players have a strong presence. Several high-income countries are increasing their investments in AI to implement 3D medical imaging to improve technologies. The rising prevalence of chronic diseases, rising investments in 3D technologies in the healthcare sector, and rising health expenditures are driving the growth of the 3D medical imaging market.

The increasing work pressure on radiologists with increasing medical imaging activities is raising the demand for more adoption of 3D medical imaging technologies in the region. In addition, there is also increase in the 3D medical imaging start-ups in recent years, and they have come up with more advancements with applications in various specialties is, driving the market in the region.

Europe is the second-largest market for 3D medical imaging. The presence of many prominent market players and high healthcare spending are the primary factors for the significant market share in this region. Large companies are highly engaged in mergers and acquisitions to expand their product portfolio. In the Middle East & Africa, and Latin America, lack of training and knowledge, insufficient IT infrastructure, and lack of awareness of the importance of 3D medicine imaging are hindering the growth of the 3D medical imaging market. APAC region is expected to grow faster with a CAGR of 7.16% during the forecast period.

Segmentation by Geography

-North America
oUS
oCanada
-Europe
oGermany
oFrance
oUK
oItaly
oSpain
-APAC
oChina
oJapan
oIndia
oSouth Korea
oAustralia
-Latin America
oBrazil
oMexico
oArgentina
-Middle East & Africa
oTurkey

o Saudi Arabia
o South Africa

FACTORS CONTRIBUTING TO THE GROWTH OF MARKET

- Adoption of Digital 3D Holographic Imaging in Surgical Planning
- Rising Implementation of AI in 3d Medical Imaging
- High Adoption of 3D Medical Imaging in Teleradiology
- Growing Inclination of Physicians towards 3D Medical Imaging Technologies

IMPACT OF COVID-19 PANDEMIC

The outbreak of the COVID-19 pandemic led to a boost in demand for the medical imaging market. The COVID-19 crisis has placed medical systems worldwide under unprecedented and growing pressure. The need for diagnosis increased during the pandemic, and the imaging sector hit. This led to the price of medical imaging devices being unreasonably high. Because the supply chains were blocked due to lockdown, it decreased the adoption of 3D medical imaging systems. The radiologists were only focused on selective modalities. For instance, lung ultrasound and chest X-ray were practiced highly during the COVID-19. Usage of the imaging systems such as X-rays and ultrasound increased during the pandemic.

HIGH ADOPTION IN HOSPITALS

a) Hospitals in North America and Europe have witnessed a substantial surge in the adoption of 3D medical imaging solutions. The increasing adoption rate of 3D medical imaging is due to the rise in the prevalence of patients with several health conditions who delay the diagnosis. The hospital segment accounted for a significant share of 47.58% of the global medical imaging market. Rising delayed diagnosis cases are increasing the demand for automated medical imaging technologies to reduce the work pressure on the radiologists and the hospital and thus is a major driving factor for 3D medical imaging market growth.
b) The diagnostic imaging centers segment is anticipated to grow at the highest pace at a CAGR of 7.05% during the forecast period. The growing adoption of 3D medical imaging systems and their low cost in diagnostic imaging centers attract patients. Some significant factors contribute to the highest CAGR of the diagnostic imaging centers segment.

INCREASED DEMAND FOR 3D MEDICAL IMAGING SYSTEMS IN THE ONCOLOGY SEGMENT

a) The oncology segment is the highest revenue contributor with $1,136.41 million and is also expected to grow at the highest CAGR of 7.03% during the forecast period. This is because, in the oncology specialty, 3D medical imaging systems have been highly adopted for cancer diagnosis and treatment plans. There has been an increasing investment in scaling up advanced imaging techniques in oncology, and this is one of the driving factors of the 3D medical imaging market growth in the oncology specialty.
b) Many hospitals and diagnostic imaging centers have already adopted 3D medical imaging systems in their oncology department. Several prominent vendors are already offering 3D medical imaging systems, and many emerging players are also offering 3D medical systems, which have been highly adopted in oncology, mainly for mammography.

MODALITY INSIGHTS

Among all the modalities, the X-ray segment accounted for the highest market share of 39.89% in 2021. This is because X-ray is the most common modality, and radiologists are highly using the 3D X-ray systems in hospitals and teleradiology practices at present, majorly in the areas of orthopedics and dental as vendors are highly focused on developing 3D X-ray systems for orthopedic and dental application and provide the fastest results. Several research and imaging centers have highly adopted 3D

X-ray systems. This is also because 3D X-ray systems are much more cost-effective than others. During COVID-19, X-rays remained dominant for respiratory examination (Lung).

VENDOR ANALYSIS

The market is moderately dynamic, with the presence of a few international and several local and regional vendors offering a comprehensive range of 3D medical imaging solutions. Siemens Healthineers, GE Healthcare, and Koninklijke Philips are the key players in the market. The players are also highly engaged in research and development activities. New product approvals coupled with R&D activities enable vendors to expand their presence, enhance market growth, and sustain their market position in the global market.

- Siemens Healthineers product named natural, accurate 3D imaging Multitom Rax is the world's first X-ray scanner to produce real 3D images under natural weight-bearing conditions. It examines patients in the natural positions that cause pain ? lying, sitting and standing. It eliminates the need to simulate the pressure and impact of weight artificially. It can show 3D images of the C-spine, L-spine, sinuses, hips, and more.
- In 2021, GE Healthcare introduced a digital X-ray system named Definium Tempo that will help reduce the workflow burdens on radiologists. Definium Tempo consists of live streaming video and 3D depth cameras and has already been adopted by North Central Bronx Hospital.
- In 2021, GE launched a new CT scanner, Revolution Ascend, designed to deliver better workflow through artificial intelligence (AI) technology. This unique technology will help the radiologists to generate a 3D model of the patient's body.
- Large-scale 3D medical imaging market investments through varied conglomerates and investment firms are seen in developed countries.
- Several international players focus on developing innovative products with advanced technologies such as AI implementation to expand their product portfolio.

Key Vendors
- General Electric
- Siemens Healthineers
- Koninklijke Philips

Other Prominent Vendors
- ATEC Spine
- Analogic
- Canon Medical Systems
- Carestream Health
- Dentsply Sirona
- ESAOTE
- Fuel 3D Technologies
- FUJIFILM
- Hologic
- Planmeca Oy
- Samsung Medison
- Sonavex
- Midmark
- ScreenPoint Medical
- SuperSonic Imagine

KEY QUESTIONS ANSWERED

1. How big is the 3D medical imaging market?
2. What is the growth rate of the 3D medical imaging market?
3. Who are the key players in the 3D medical imaging market?
4. What are the growth factors in the 3D medical imaging market?
5. Which region is expected to hold the largest share in the 3D medical imaging market?

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