EffeMarket

Artificial Intelligence in Medical Imaging Market Report: 2027

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Executive Summary

Artificial Intelligence (AI) is a branch of science related to computer systems that can perform tasks that normally require human Intelligence. AI uses analytical models and digital inputs to gather large streams of data. AI models can then quickly process this data and react with human-like intelligence. Some AI technology uses Deep Learning and Machine Learning to constantly learn and develop its knowledge. AI-driven technologies are expected to replace enterprise software. Currently, AI has impacted almost every industry sector. On the software side, there will soon be more sophisticated Artificial Intelligence-based platforms as technology trends towards platforms becoming open-sourced. Today's Artificial Intelligence is called Narrow or Weak AI, since it can perform simple tasks (e.g., facial recognition, internet searches, or driving a car). Although AI technologies have not yet reached their full potential, Narrow AI is already present in cars, internet search engines, Amazon.com shopping suggestions, and many other devices.

All industries use some form of AI devices, but the healthcare industry is expected to use AI technology the most. AI healthcare is often used for things like patient care, drug discovery, and personalized treatment. Artificial Intelligence can review an image and identify potential findings within it by searching a patient's history related to the particular anatomy scanned.

AI is unlikely to replace radiologists anytime soon, but it will increase the value they provide. In most countries there are not enough radiologists to meet the growing demand for imaging and diagnostic healthcare services. This shortage is expected to get worse in future: as imaging services grow, the population ages and chronic diseases grow faster than new radiologists are entering the field. AI algorithms read medical images by identifying patterns within the image the way radiologists do. AI systems are trained to recognize normal anatomy through typical scans from CT, magnetic resonance imaging (MRI), ultrasound or nuclear imaging. Knowledge regarding the automated analysis of medical images has spread rapidly, though the impact of AI on the radiology field will probably occur gradually.

The global Artificial Intelligence market is projected to reach approximately $139 billion by 2027. This would be an increase from $8.2 billion in 2013, at a growth rate of 40 percent from 2017 to 2027. Advancements in image and voice recognition technology are critical to offering enhanced drones, self-driving cars, and robotics, thus promoting the expansion of the Artificial Intelligence market.

Global investment for Artificial Intelligence has come from three different sources:

- direct investment by industrial and IT companies,
- acquisition and development of small, established AI companies
- venture capital funding of AI startups.

In 2016, the overall global investment in Artificial Intelligence was more than $5 billion an increase of more than 60 percent over 2015. In 2015, the investments are estimated to be roughly $3.1 billion, or 6 percent of total VC investments that totaled $55 billion in 2015.

In 2016, the global diagnostic imaging equipment market was valued at $22.7 billion at a growth rate of 2 percent. X-rays are the most common diagnostics imaging tool used worldwide, while PET and PET-CT scanning are widely considered the best. The medical imaging and diagnostics industry has become saturated with companies in recent years compared to other Artificial Intelligence application area in the healthcare industry. Nineteen out of the 24 imaging & diagnostics companies raised their first equity funding round since January 2015. (This includes seed or Series A rounds, as well as a first-round raised by stealth startup Imagen Technologies.)

Deep Learning (DL) is a subset of AI that is stimulated by the working of human brain. Deep Learning algorithms can help clinicians and radiologists diagnose diseases and plan treatments. Deep Learning is making rapid advances in diagnostic radiology. It is estimated that the total global computer-aided diagnostics software market could be worth $16 billion. In 2016 the market was valued at $1 billion, and the progression in medical software businesses and imaging device companies could average 20-35 percent growth rate per year. This will continue as Deep Learning improves their throughput and generates new products and services in coming decade.

The current business strategy among many large companies in diagnostic imaging is to leverage licensing agreements and work collaboratively with technology suppliers, rather than to acquire these companies outright. In order to make up for the lack of commercial funding available from traditional venture capital resources for imaging technology, most of the key imaging OEM's have established corporate venture funds. For example, Siemens Venture Capital Healthcare, Philips Healthcare Incubator, and the GE Healthymagination Fund.

Philips is the most active assignee in the year 2017. Most of the patents of Philips during the year 2017 focus on the devices which can be used for medical imaging. Philips has the priority filing in USA in this year. Apart from Philips, Siemens has been the second most active assignee in the domain in the year 2017.

The growth of the global Artificial Intelligence market is directly correlated with prevailing economic conditions across the globe. The rising level of disposable income has propelled the spending trends on healthcare. In addition, the improving global economy is expected to take a step further in the years ahead and catalyze the growth of AI in healthcare industry. Artificial Intelligence technologies will be quickly assimilated into analytics practices, providing consumers exceptional access to powerful insights that drive action. To improve, the healthcare industry is currently in need of Artificial Intelligence to provide knowledgeable, actionable insights from large sets of patient data and to create a unified informatics architecture.

An important trend in diagnostic medical imaging is a growing interest in fusion and multimodality imaging. As the market for diagnostic imaging equipment matures, new opportunities are emerging for imaging modalities that can be used by mobile doctors or health-care workers in the field. Another major trend is the idea of smaller, portable imaging machineries. The global medical imaging market is facing increasing competition from refurbished systems due to the high cost of devices and installation in developing markets.

IBM/Merge, Philips, Agfa, and Siemens have already started incorporating AI into their medical imaging software systems. The implementation of AI technology into medical imaging has particular challenges:

- diagnoses are not always confirmed

- classifications and concepts are not always unanimous, nor are they eternal
- the structures of the human body present great variation in terms of normal dimensions and textures, andthis variation potentially masks pathological conditions

Key Questions Answered by the Report:

The report provides detailed market analysis of the Artificial Intelligence market at global and regional levels, in addition to Artificial Intelligence in the healthcare market. The major regions covered are the US, Europe, Japan and Australia. The report also covers a detailed description of top Artificial Intelligence applications in the healthcare industry with market size information and a case study.

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