3D Motion Capture - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

Market Report | 2024-02-17 | 153 pages | Mordor Intelligence

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Report description:

The 3D Motion Capture Market size is estimated at USD 248.33 million in 2024, and is expected to reach USD 467.74 million by 2029, growing at a CAGR of 13.5% during the forecast period (2024-2029).

3D motion capture (mocap) systems combine multiple devices, mainly high-quality cameras, sensors, communication devices, and accessories. These systems are used to record the real-time motion of an object or individual to obtain the desired level of animation in entertainment fields, such as in films and games.

Key Highlights
-Technological advancements in computer vision technology, as well as an increase in demand and inclination for high-quality 3D animations, are driving market expansion. One of the primary reasons for utilizing 3D motion capture is to shorten the creation cycle for complicated 3D CGI figures for cinema, television, or video games.
-The wide usage of these systems in various applications, including robotics, and the significant growth in the robotics sector are analyzed to boost the market growth rate during the forecast period.
-Moreover, virtual reality is an interactive, computer-generated representation of a three-dimensional environment. However, most interactions take place through a headset or through specialized digital gloves. Additionally, it is believed that using VR might be a relatively isolated experience. Currently, a variety of applications can be used to generate and animate VR. For instance, Google has developed a Daydream Lab that enables users to animate 3D models within computer programs. Google's Daydream Lab has discovered a technique to use VR to quickly and easily produce 3D animation with the aid of two animation-based applications, Animator and Puppeteer.
-A 3D motion-capturing system contains several critical hardware and software components, all of which must be tightly integrated to provide a compelling user experience. The camera is the first component that captures the raw data representing

the user's actions. Generally, this raw data is then processed to reduce the noise in the signal (for example, in the case of 3-D cameras) or to compute the depth map.
-The launch of the metaverse post the COVID-19 pandemic and the related strategic developments are expected to contribute to the growth of the market. The growing demand for virtual events resulting in the implementation of advanced technologies may also contribute to the market growth rate during the forecast period.

3D Motion Capture Market Trends

Engineering and Industrial Applications to Witness Significant Growth

- 3D motion capture is becoming a valuable part of engineering and industrial applications, as it can quickly measure small, fast movements and, therefore, can be used as a process controller. It can also be used to analyze the vibrations on vehicles or equipment or as a tool in virtual industrial design.
- In industrial applications, 3D motion capture enables real-time, precise, and low-latency measurement of market movements. Further, by providing body angles, Mocap enables industrial consumers to effectively identify and correct ergonomic issues that can lead to injury or analyze other human factors for industry or the military. By tracking anything a marker can be attached to, the system is also used to validate robotic control systems and measure deformation or an object's aerodynamic behavior in a wind tunnel. Cortex integrates with a wide range of control systems.
- Moreover, the rising technological advancements of Industry 4.0 have opened up new possibilities for industrial processes that require advanced sensing solutions. 3D Motion capture (MoCap) sensors, such as visual cameras and inertial measurement units (IMU), are frequently adopted in industrial settings to support solutions in robotics, additive manufacturing, teleworking, and human safety.
- In industrial applications, it is crucial to produce ergonomically practical product designs, and they can be used for evaluating and measuring the performance of industrial robots. Other applications include vessel tracking above and underwater, aerodynamics tests, automotive development, interior design, and control design. Future advancements in motion tracking systems will find significant application in the industrial landscape, generating the demand for 3D motion capture systems over the forecast period. Moreover, as technology advances, the use of motion capture is expected to grow in military training and marine and underwater applications worldwide.

Asia-Pacific is Expected to be the Fastest Growing Region

- China is one of the most significant and potential markets for 3D motion capture as companies are aiming to expand visual effects, VR, virtual assistants, and film industry investment. Additionally, many international digital production companies invested in the country as part of their expansion.
- Globally, India is the largest and one of the most creative cinema industries, with the presence of many regional film industries, such as Bollywood, Mollywood, Sandalwood, and Tollywood. Evolving technology has caused many changes in the visual effects industry, and one trend that bears a unique promise, especially in India, is motion capture.
- Since motion capture is significantly beneficial for planning action/stunt sequences and crowd scenes, major companies are investing in India. In addition, various regional motion capture companies are providing various mocap services, from planning and installation to support and maintenance. Thus, this is driving significant demand in various end-user segments across the country.
- In addition, medical colleges in the country are adopting 3D motion capture solutions for scientific research purposes. CMC Vellore, a medical college backed by the government, partnered with Phase Space Motion Capture for gait analysis with this

technology, leveraging real-time feedback capabilities.
- The 3D motion capture market in Japan is expected to witness significant growth over the forecast period, owing to the usage of advancing technology in the gaming industry, the anime industry, and increasing motion capture studios, coupled with demand in the media and animation sector.
- The motion capture market in the Rest of the Asia-Pacific has been predicted to gain substantial applications in the life science, sports, gaming, biomechanical, and media industries over the forecast period.

3D Motion Capture Industry Overview

The 3D motion-capturing market comprises several global and regional players and a fairly-contested market space. The market is further witnessing a rise in the number of smaller and more technologically-advanced players. This market is characterized by growing levels of product penetration, moderate/high product differentiation, and high levels of competition. Overall, the intensity of competitive rivalry is moderate and is expected to grow over the forecast period.

In September 2022, Motion Analysis Corporation launched BaSix, a new range of cameras, which consists of three light cameras, namely BaseCam, Icefall, and the Lhotse. These cameras are used with active marker rigs (BaSixmarkers) and either BaSix Go software or the premium solution, Cortex.

In April 2022, Toronto-based firm "The Other End" partnered with PhaseSpace for its real-time motion capture system by installing PhaseSpace's Impulse X2E system to offer producers and creators access to faster and more flexible real-time motion capture of an actor's or object's movement on a virtual production stage to save on costs and increase creative control and to become its exclusive Canadian Partner.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

Table of Contents:

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