COMPUTER GRAPHICS MARKET

By Software (CAD/CAM, Visualization/Simulation, Digital video, Imaging, Modeling/Animation), Service (Consulting, Training & Support, Integration), End-User (Enterprise and SMB)

MarketsandMarkets is a global Market research and consulting Company based in the U.S. We publish strategically analyzed Market research reports and serve as a business intelligence partner to Fortune 500 Companies across the world. MarketsandMarkets also provides multi-client reports, Company profiles, databases and custom research Services.

MarketsandMarkets covers thirteen Industry verticals, including advanced materials, automotive and transportation, banking and financial Services, biotechnology, chemicals, Consumer goods, energy and power, food and beverages, industrial automation, medical Devices, pharmaceuticals, semiconductor and electronics, telecommunications and IT.

Copyright © 2014 MarketsandMarkets
All Rights Reserved. This document contains highly confidential information and is the sole property of MarketsandMarkets. No part of it may be circulated, copied, quoted, or otherwise reproduced without the approval of MarketsandMarkets.
1 INTRODUCTION

1.1 OBJECTIVES

- To define and measure the computer graphics market with respect to software, service, end user, vertical, and region
- To analyze the market structure by identifying various sub-segments of the global computer graphics market
- To strategically analyze each submarket with respect to individual growth trends and contribution to the overall market
- To analyze market opportunities for stakeholders by identifying high-growth segments of the global computer graphics market
- To strategically profile the key players of the computer graphics ecosystem and to comprehensively analyze their products and core competencies in each segment
- To provide an illustrative and detailed segmentation of the global computer graphics market by end-user verticals and applications
- To forecast the revenues of the computer graphics market and its various sub-markets with respect to five main regions, namely North America (NA), Europe, Asia-Pacific (APAC), Middle East and Africa (MEA), and Latin America (LA)
- To track and analyze the market scenario on the basis of technological developments, Mergers and Acquisitions (M&A), and Venture Capital (VC) funding

1.2 REPORT DESCRIPTION

Objects that can be represented in the form of images or visuals are known as graphics. Often graphics are misinterpreted with texts or sound that comprises letters and numbers, rather than images. Computer graphics are majorly images that are displayed on-screen and are created and manipulated by the computer. These images are either two-dimensional (2D) or three-dimensional (3D). Earlier, computers were only capable of creating 2D images, as technology was not so advanced. For creating computer graphics the basic requirement is a
personal computer or desktop. Besides that, new as well as special software and devices are needed for computer graphics.

As users of computer graphics realize the benefits associated with upcoming 3D software, many industries have started using computer graphics to promote their brand and products. Also, industrial sectors such as manufacturing, automobile, and aerospace and defense have adopted and implemented high-end computer graphics software into their systems in order to design products and their ancillaries with more efficiency. While industries look forward for better prices and multiple options in computer graphics software, leading software developers are creating software with variable options such as creating 3D objects and editing.

MarketsandMarkets believes that the changing user behavior toward the new software with various presets is propelling the growth in the computer graphics market. Though the adoption of computer graphics was initially gradual, due to concerns about cost, trained labor, and high configuration requirements, these solutions are now witnessing wide acceptance across various verticals. The convenience of flexibility and the seamless support for creating characters and objects in high definition are expected to bring more demand for these solutions. To serve an audience with different and more realistic 3D visuals, solution providers and their industry partners are addressing the installation challenges by making software and support tools that adhere to the compliance standards. The consolidation of new and advanced computer graphics software within the existing systems will improve workforce productivity and enhance the ability to produce more realistic 3D images with minute details.

The computer graphics market is segmented on the basis of software: Computer-Aided Design/Computer-Aided Manufacturing (CAD/CAM), visualization/simulation, digital video, imaging, and modeling/animation; services: consulting, training and support, and integration; end user: Small and Medium Businesses (SMBs) and enterprises. The report is further segmented on the basis of regions and verticals.
1.3 MARKETS COVERED

The computer graphics research is a comprehensive study of the global market for computer graphics software solutions. The report forecasts the revenues and trends for computer graphics software in the following sub-markets:

**On the basis of software:**
- CAD/CAM
- Visualization/simulation
- Digital video
- Imaging
- Modeling/animation
- Others

**On the basis of service:**
- Consulting
- Integration
- Training and support

**On the basis of end user:**
- Small and Medium Businesses (SMBs)
- Enterprises

**On the basis of vertical:**
- Aerospace and defense
- Automobile
- Entertainment and advertising
• Academia and education
• Healthcare
• Manufacturing
• Architecture, building, and construction
• Others

On the basis of region:
• North America (NA)
• Europe
• Asia-Pacific (APAC)
• Latin America (LA)
• Middle East and Africa (MEA)

1.4 STAKEHOLDERS
• Software companies
• Software developers
• Computer hardware vendors
• Systems integrators
• Consultants
• Distributors
• Enterprise owners
• Architecture and engineering firms
• Automobile firms
• Equipment and device manufacturers
• Graphic designers
• Advertising agencies
1.5 RESEARCH METHODOLOGY

The computer graphics research study is a result of thorough secondary and primary research followed by market forecast using various data triangulation methods and proprietary market estimation models.

1.5.1 KEY DATA

Secondary sources such as directories, blogs, whitepapers, articles, and databases such as Factiva, Hoovers were used to identify and collect technical and commercial information for this extensive study of the computer graphics market.

Key vendors in the computer graphics ecosystem were identified and studied individually to understand their product offerings, their business and pricing models, and their customer segments. This data was further scrutinized based on individual revenues, contributions from various regions and business segments.

The primary research for this study comprised discussions with subject matter experts and senior executives of various computer graphics solution providers. These discussions helped to understand market dynamics and to obtain and verify critical information and market trends. The surveys and interviews were not just confined to the leading market players, but also included the start-ups and prominent regional players; this helped to understand the regional focus and adoption trends of computer graphics. Respondents were led through a discussion guide to gather qualitative and quantitative inputs on their operations, strategies, revenues, and key developments in the market.
### COMPUTER GRAPHICS MARKET: RESEARCH METHODOLOGY

**Secondary Research**
- Market ecosystem
- Value chain
- Key players
- Market segmentation
- Annual reports of key industry players
- Regional adoption
- Market Trends
- Use cases
- Technological Developments

**Primary Research**
- Product portfolio
  - Trends and market validation for market segments
- Competitive landscape
- Market dynamics

**Market Crackdown**
- Top-down approach
- Bottom-up approach
- Data triangulation
- Qualitative and quantitative analysis
- Market analysis
- Market estimates
- Market forecasts

Source: MarketsandMarkets Analysis

#### 1.5.2 DATA TRIANGULATION & MARKET FORECASTING

The data from discussions was consolidated, checked for consistency, and further collated into the MarketsandMarkets model. Both, bottom-up and top-down approaches were applied to arrive at the right numbers.

**Bottom-up:** Company-wise revenue from computer graphics software’s was considered for sizing the market. This was further scrutinized based on the company’s share in the market and its offerings. This data was further collated to arrive at the overall market size.
**Top-down:** Upon estimation and validation of the main market size, percentage split for the market sub-segments was done based on consolidated inputs from key players, with respect to regional adoption trends, pervasiveness across different end users, business models, and corresponding industry verticals and size.

**FIGURE 2**

**DATA TRIANGULATION**

1. **FORECAST ASSUMPTIONS**

- The global economic climate will be favorable till the end of 2019. A positive economic climate means positive spending by enterprises with focus on improving individual productivity and business agility.

- The computer graphics market players will continue to invest in technological solutions to address the need of those customers who require realistic view of each and every object they wish to manufacture.
• The demand for computer graphics and 3D animation and molding software will continue to increase with technological development and usage of smart devices such as tablets and phones.

• The computer graphics software providers are upgrading their offerings, launching new products, training the workforce to address the new challenges, and are coming up with innovative features such as virtual reality and augmented reality.

• The dollar fluctuations will not affect the market forecast to a significant extent. Fall in the dollar price will enhance the revenue growth opportunities for the U.S. multinationals, whereas stability in the dollar value will stabilize the price of overseas transactions.

• The revenue and financial information mentioned on a company’s website or its annual report is assumed to be true. The authenticity of financials has a big role to play in the overall market sizing exercise.

• The qualitative analysis in the computer graphics market research study is solely based on the understanding of the market and its trends by the team of experts involved in making this report.

• In computer graphics market, the scope is limited to software and services excluding hardware.
2 EXECUTIVE SUMMARY

2.1 OVERALL MARKET SIZE

MarketsandMarkets expects an increasing adoption of computer graphics software solutions across the globe for better overall efficiency. The uptake of these solutions is increasing rapidly, as organizations are now focusing on the quality of the product they wish to offer to their customers. The computer graphics software solutions are expected to gain attention of the users with time, as the features of computer graphics are giving quite realistic approach to the end users.

MarketsandMarkets forecasts the computer graphics market to grow from $XX billion in 2014 to $XX billion by 2019, at a Compound Annual Growth Rate (CAGR) of XX% during the forecast period. The table given below highlights the overall size of the computer graphics market which equals the sum of revenues from software and services.

![TABLE 1](image)

**COMPUTER GRAPHICS MARKET SIZE, BY SOLUTION, 2014-2019 ($ BILLION)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Software</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
</tr>
<tr>
<td>Services</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
</tr>
<tr>
<td>Total</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
</tr>
</tbody>
</table>

Source: MarketsandMarkets Analysis

The table and the figure given below highlight the Year-Over-Year (Y-O-Y) growth trend for the computer graphics market during the forecast period. The market revenue for services in the computer graphics market is expected to grow at a rate of XX% for the period 2018-2019.
TABLE 2

COMPUTER GRAPHICS MARKET GROWTH, 2015-2019 (Y-O-Y %)

<table>
<thead>
<tr>
<th>Solution</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
</tr>
<tr>
<td>Services</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
</tr>
</tbody>
</table>

Source: MarketsandMarkets Analysis

FIGURE 3

COMPUTER GRAPHICS MARKET GROWTH, 2015-2019 (Y-O-Y %)

Source: MarketsandMarkets Analysis
**Disclaimer:** MarketsandMarkets strategic analysis services are limited publications containing valuable market information provided to a select group of customers in response to orders. Our customers acknowledge, when ordering, that MarketsandMarkets strategic analysis services are for our customers’ internal use and not for general publication or disclosure to third parties. Quantitative market information is based primarily on interviews and therefore, is subject to fluctuation.

MarketsandMarkets does not endorse any vendor, product or service depicted in its research publications. MarketsandMarkets strategic analysis publications consist of the opinions of MarketsandMarkets' research and should not be construed as statements of fact. MarketsandMarkets disclaims all warranties, expressed or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.

MarketsandMarkets takes no responsibility for any incorrect information supplied to us by manufacturers or users.

All trademarks, copyrights and other forms of intellectual property belong to their respective owners and may be protected by copyright. Under no circumstance may any of these be reproduced in any form without the prior written agreement of their owner.

No part of this strategic analysis service may be given, lent, resold or disclosed to non-customers without written permission.

Reproduction and/or transmission in any form and by any means including photocopying, mechanical, electronic, recording or otherwise, without the permission of the publisher is prohibited.