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PDF

Market Analysis Report

### Large Language Model Market Size, Share & Trends Analysis Report By Application (Customer Service, Content Generation), By Deployment, By Industry Vertical, By Region, And Segment Forecasts, 2024 - 2030

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Report Summary

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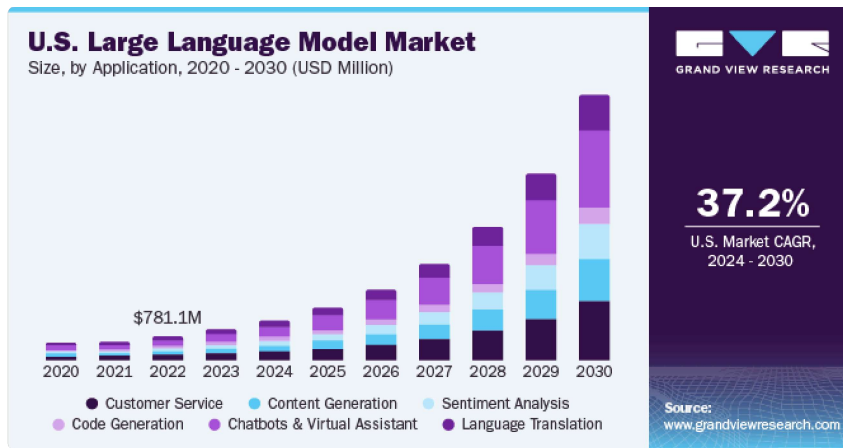
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## Large Language Model Market Trends

The global large language model market size was estimated at USD 4.35 billion in 2023 and is projected to grow at a compound annual growth rate (CAGR) of 35.9% from 2024 to 2030. The integration of a zero human intervention feature in training systems is a driving force behind the acceleration of the large language models (LLMs) market. This capability increases efficiency by enabling models to autonomously learn and adapt without continual manual oversight, significantly reducing time and resource demands.



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It promotes scalability, enabling LLMs to accommodate expanding data volumes and workloads effortlessly. For instance, in June 2023, Databricks, Inc., a software company headquartered in the U.S., completed a USD 1.3 billion acquisition of MosaicMLL, a U.S.-based provider specializing in Large Language Models and model-training software. This strategic move aims to enhance Databricks' generative AI capabilities. Databricks plans to integrate MosaicMLL's models, training, and inference capabilities into its lakehouse platform, empowering enterprises to create [generative AI \(/https://www.grandviewresearch.com/industry-analysis/generative-ai-market-report\)](#) applications.

Techniques such as transfer learning and self-supervised learning have enhanced LLMs by enabling them to use pre-trained knowledge and adapt to new tasks more effectively. Advances in hardware, particularly GPUs (Graphics Processing Units) and TPUs (Tensor Processing Units) have accelerated training and inference processes, enabling the handling of larger and more complex models. These technological advancements empower LLMs by enhancing their performance through better contextual understanding, improved memory handling, and more efficient training processes. This factor increases the models' acceptance by companies intending to use them for improved efficiency in operations, an edge in the marketplace, and financial sustainability.

The abundant availability of internet data has been a driving force propelling the LLM market forward in significant ways. This wealth of data serves as a foundational resource for LLMs, enabling them to learn from diverse and extensive sources, leading to substantial enhancements in their performance and adaptability. Access to such a vast array of information facilitates more comprehensive and nuanced learning, enabling LLMs to understand the context better, improve language comprehension, and develop their abilities in various language-related tasks. The wealth of available internet data drives continuous improvements in LLM technology and broadens their real-world applications across various industries. This expansion enhances their attractiveness for a diverse set of uses, ultimately accelerating the adoption and growth of LLMs in the market.



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## Market Concentration & Characteristics

Advancements in machine learning algorithms, especially in [natural language processing](https://www.grandviewresearch.com/industry-analysis/natural-language-processing-market-report) and neural network architectures, are important in defining the capabilities of the large language models. Furthermore, the continuous flow of diverse and extensive datasets contributes to more sophisticated learning, empowering the model to adjust and enhance its comprehension of language nuances and contexts. For instance, in August 2023, Tenable, Inc., a cybersecurity firm based in the U.S., introduced ExposureAI, an advanced security solution driven by generative AI. This tool uses large language models to turn a ton of threat data into useful insights. This tool is part of Tenable's platform called Tenable One. The company also launched Exposure Graph, a special data system to power ExposureAI and make it even smarter.

Alternative services to large language models in language-related tasks include rule-based systems, task-specific models for targeted functions, hybrid approaches combining different techniques, smaller pre-trained models, and human-based solutions. While these substitutes serve specific purposes and might excel in certain tasks or domains, they generally need more comprehensive adaptability, contextual understanding, and overall versatility that define LLMs. These alternatives often trade-off between task specificity, computational efficiency, and the depth of linguistic comprehension, making them suitable for particular use cases but not as universally applicable as LLMs in handling diverse language-related applications.

 [Large Language Model Market Concentration & Characteristics](#)

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Regulation significantly molds the market by establishing ethical guidelines, data privacy standards, and compliance necessities. These regulations, often focused on ensuring responsible AI development, addressing biases, and safeguarding privacy, influence how LLMs collect, process, and utilize data. Rigorous protocols, particularly in sectors such as healthcare or finance, may restrict the deployment of LLMs due to concerns related to the handling of sensitive information. Moreover, global standards harmonize practices but also create barriers for smaller players, impacting innovation and market dynamics. 

## Industry Vertical Insights

Based on industry vertical, the retail and e-commerce segment held the largest market revenue share of 27.24% in 2023. LLMs facilitate personalized recommendations and shopping experiences by analyzing customer preferences, behavior, and purchase history, enhancing satisfaction and boosting sales. Amid the shift to online shopping, LLMs assist retailers in comprehending digital consumer behavior and preferences, adapting to the rapidly evolving digital market. They drive advanced search features and recommendation engines, improving product discovery and ultimately resulting in higher conversions and improved customer retention. LLMs aid in evaluating market trends, conducting sentiment analysis, and understanding customer sentiments regarding products or brands. This empowers retailers to enhance marketing strategies, develop focused campaigns, and optimize sales pathways.

 Global Large Language Model market share and size, 2023

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The media and entertainment segment expected to grow at the fastest CAGR over a forecast period. LLMs enable personalized content recommendations, enhancing user engagement by suggesting movies, shows, articles, or music based on individual preferences, leading to increased consumption and retention. LLMs assist content creators by generating ideas, suggesting storylines, or assisting in scriptwriting, thereby enhancing productivity. Moreover, LLMs enable innovative storytelling formats, such as interactive narratives or personalized experiences, enhancing audience engagement and immersion. LLMs facilitate language translation and localization of content, enabling global reach and accessibility, appealing to diverse audiences worldwide.

## Regional Insights

North America held the largest revenue share of 31.92% in 2023. North America's pivotal position as a center for technological innovation, housing multiple premier AI research institutions and tech companies, nurtures the evolution and progress of LLM technology, contributing to its dominance in the market. Various sectors in North America, such as tech, finance, healthcare, and entertainment, are early adopters of LLMs. This early adoption drives demand, encourages further innovation, and solidifies the region's leadership in LLM development and utilization. Moreover, the region offers access to a vast array of resources, including computing infrastructure, data, and collaboration opportunities.

 Large Language Model Market Trends, by Region, 2024 - 2030

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Asia Pacific is anticipated to witness significant CAGR over the forecast period. The Asia-Pacific region has a vast and diverse market with a growing digital population. This market expansion presents ample opportunities for the adoption and utilization of LLMs across various industries and consumer segments. The region is witnessing the emergence of innovative startups and tech companies specializing in [AI \(https://www.grandviewresearch.com/industry-analysis/artificial-intelligence-ai-market\)](https://www.grandviewresearch.com/industry-analysis/artificial-intelligence-ai-market) and natural language processing. These entities are contributing to the development and adoption of LLMs, bringing unique solutions to the market.

## Application Insights

Based on application, the [chatbots \(https://www.grandviewresearch.com/industry-analysis/chatbot-market\)](https://www.grandviewresearch.com/industry-analysis/chatbot-market) and virtual assistant segment held the largest market revenue share of 26.4% in 2023. Chatbots and virtual assistants are highly practical implementations of LLMs, focusing on conversational interactions, customer service, and task automation, making them more accessible and user-friendly. They offer immediate and personalized responses,



enhancing user engagement by providing real-time support, guidance, and information retrieval. Moreover, their user-friendly nature has led to widespread consumer acceptance, prompting businesses to use them as a preferred means of customer interaction. Businesses find it easier to integrate chatbots and virtual assistants into their existing systems and customer support channels.

The customer service segment accounted to register a significant CAGR over a forecast period. LLMs enable scalable solutions in customer service, handling multiple queries simultaneously without a proportional increase in resources, ensuring businesses accommodate fluctuating demands efficiently. LLMs provide consistent and accurate responses, ensuring uniformity in customer interactions and thereby maintaining brand identity and service quality. These systems can automate everyday tasks, enabling human agents to concentrate on intricate or specific customer requirements, thereby enhancing the quality of service delivery.

## Deployment Model Insights

Based on the deployment model, the on-premise segment led the market in 2023 with the largest revenue share of 57%. On-premise solutions offer more customization options and control over the infrastructure, allowing organizations to customize LLMs to their specific needs and integrate them more seamlessly with existing systems. Some organizations, particularly in highly governed industries such as finance or healthcare, opt for on-premise solutions to retain authority over their data, ensuring alignment with industry standards. Businesses with concerns about the sensitivity of their data may opt for On-premise solutions to maintain direct control over data access and storage, reducing reliance on external providers.

The cloud segment is anticipated to register a fastest CAGR over a forecast period. Cloud-based LLM solutions offer scalability, allowing businesses to quickly scale their computational resources up or down based on demand. This flexibility accommodates varying workloads and evolving needs without requiring significant infrastructure changes. Cloud solutions often operate on a pay-as-you-go model, which eliminates the need for substantial upfront investments. This cost structure allows businesses to optimize expenses, paying only for the resources they use. Cloud-based LLMs offer accessibility from anywhere with an internet connection, enabling remote access and collaboration among geographically dispersed teams.

## Key Companies & Market Share Insights


Some of the key players operating in the market include Microsoft Corporation; Google LLC; Amazon.com, Inc.; and Baidu, Inc.

- Microsoft Corporation is a multinational technology company renowned for its software products, services, and devices. Its diversified portfolio includes operating systems, productivity software such as Microsoft Office, cloud computing via Azure, gaming with Xbox, and business tools such as Dynamics 365. With a strong focus on AI, Microsoft Research actively explores Large Language Models and Natural Language Processing (NLP). Their AI efforts, including Microsoft Turing, emphasize advancing language-centric technologies across their suite of products and services
- Google LLC, a subsidiary of Alphabet Inc., is a multinational technology company known for its internet-related products and services. It offers a wide array of products, including cloud computing and software applications such as Gmail, Google Drive, YouTube, and Android operating systems for mobile devices. Google pioneered the development of Large Language Models such as BERT and Transformer, contributing significantly to advancements in natural language understanding and processing. These models have been integrated into various Google services, molding the company's AI-centric approach across its array of products and platforms
- Tencent Holdings Limited and Yandex NV are some of the emerging market participants in the LLMs market.
- Tencent Holdings Limited, is a Chinese multinational conglomerate, operates across an expansive spectrum of industries, dominating sectors such as social networking, gaming, entertainment, e-commerce, cloud services, and financial technology. Additionally, Tencent has a presence in e-commerce platforms and provides cloud computing and financial technology solutions
- Yandex NV, an internet services company in Russia, boasts an extensive portfolio of services spanning search engines, email, mapping, cloud services, ride-hailing, and food delivery. Yandex heavily invests in A.I. and machine learning, integrating these technologies across its services to enhance user experience and optimize functionalities such as search and navigation

### Key Large Language Model Companies:

- ▶ Alibaba Group Holding Limited
- ▶ Amazon.com, Inc.
- ▶ Baidu, Inc.
- ▶ Google LLC
- ▶ Huawei Technologies Co., Ltd.
- ▶ Meta Platforms, Inc.
- ▶ Microsoft Corporation
- ▶ OpenAI LP
- ▶ Tencent Holdings Limited
- ▶ Yandex NV

## Recent Developments

- In December 2023, Google LLC, a technology company based in the U.S., has unveiled an unprecedented Large Language Models (LLM) named  VideoPoet, which is multimodal and capable of generating videos. This groundbreaking model introduces video generation functionalities previously unseen in LLMs. Google's scientists assert that VideoPoet is a robust LLM designed to process various multimodal inputs of text, images, video, and audio to produce videos

- In December 2023, [Microsoft Corporation](https://www.microsoft.com/en-us/research/publication/insightpilot-an-llm-empowered-automated-data-exploration-system/) (https://www.microsoft.com/en-us/research/publication/insightpilot-an-llm-empowered-automated-data-exploration-system/) has launched InsightPilot, an automated data exploration system powered by a Large Language Models (LLM). This innovative system is specifically designed to simplify the data exploration process. InsightPilot incorporates a set of meticulously designed analysis actions aimed at simplifying the exploration of data. When presented with a natural language question, InsightPilot integrates with the LLM to execute a sequence of analysis actions, facilitating the exploration of data and the generation of valuable insights
- In September 2022, Meta Platforms, Inc., a U.S.-based technology company, collaborated with Microsoft Corporation to unveil Llama 2, a Large Language Models, marking an extension of their artificial intelligence partnership. The objective behind Llama 2 is to present a high-performing Large Language Models (LLM) that excels across diverse domains, serving both research and commercial needs while establishing competition with established LLMs

### Large Language Model Market Report Scope

Report Attribute	Details
Market size value in 2024	USD 5.62 billion
Revenue forecast in 2030	USD 35.43 billion
Growth rate	CAGR of 35.9% from 2024 to 2030
Base year for estimation	2023
Historical data	2017 - 2022
Forecast period	2024 - 2030
Quantitative units	Market revenue in USD million/billion, and CAGR from 2024 to 2030
Report coverage	Revenue forecast, company ranking, competitive landscape, growth factors, and trends
Segments covered	Application, deployment, industry vertical, region
Regional scope	North America; Europe; Asia Pacific; Latin America; MEA
Country scope	U.S.; Canada; UK; Germany; France; China; Japan; India; South Korea; Australia; Brazil; Mexico; KSA; UAE; South Africa
Key companies profiled	Alibaba Group Holding Limited; Amazon. com Inc; Baidu Inc; Google LLC; Huawei Technologies Co Ltd; Meta Platforms Inc; Microsoft Corporation; OpenAI LP; Tencent Holdings Limited; Yandex NV
Customization scope	Free report customization (equivalent up to 8 analyst's working days) with purchase. Addition or alteration to country, regional, and segment scope.
Pricing and purchase options	Avail customized purchase options to meet your exact research needs. <a href="https://www.grandviewresearch.com/checkout/select-license/large-language-model-llm-market-report">Explore purchase options (https://www.grandviewresearch.com/checkout/select-license/large-language-model-llm-market-report)</a>

### Global Large Language Model Market Report Segmentation

This report forecasts revenue growth at global, regional, and country levels and provides an analysis of the latest industry trends in each of the sub-segments from 2017 to 2030. For this report, Grand View Research has segmented the global large language model market report based on application, deployment, industry vertical, and region.



To learn more about this report, [request a free sample copy \(https://www.grandviewresearch.com/industry-analysis/large-language-model-llm-market-report/request/rs6\)](https://www.grandviewresearch.com/industry-analysis/large-language-model-llm-market-report/request/rs6).

• **Application Outlook (Revenue, USD Million, 2017 - 2030)**

- Customer Service
- Content Generation
- Sentiment Analysis
- Code Generation
- Chatbots And Virtual Assistant
- Language Translation

• **Deployment Outlook (Revenue, USD Million, 2017 - 2030)**

- Cloud
- On-premises

• **Industry Vertical Outlook (Revenue, USD Million, 2017 – 2030)**

- Healthcare
- Finance
- Retail And E-commerce
- Media And Entertainment
- Others (Education, Legal, Gaming)

• **Regional Outlook (Revenue, USD Million, 2017 - 2030)**

- North America
  - U.S.
  - Canada
- Europe
  - UK
  - Germany
  - France
- Asia Pacific
  - China
  - Japan
  - India
  - South Korea
  - Australia
- Latin America
  - Brazil
  - Mexico
- Middle East and Africa (MEA)
  - KSA
  - UAE




- South Africa

### Frequently Asked Questions About This Report

How big is the large language model market?	▼
What is the large language model market growth?	▼
Which segment accounted for the largest large language model market share?	▼
Who are the key players in large language model market?	▼
What are the factors driving the large language model market?	▼

Key questions answered by the report

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