

Organizations to Leverage Artificial Intelligence to Transform their Businesses

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Artificial intelligence (AI) will be an integral approach to streamline productivity, reduce infrastructure cost, and improve the experience and outcome of every customer. AI enables dynamic services architecture, and a well-executed AI strategy provides a company competitive advantage over its rivals and strengthens the shareholder value-creating capabilities of its brands at the same time. Diverse applications across various industries such as agriculture, healthcare, BFSI, manufacturing, automotive, and media and advertising drive the adoption of AI technology [1]. Increasing productivity and improving customer satisfaction are other major factors that drive the market growth. The availability of big data, coupled with AI algorithms for an extensive range of applications, is fueling the growth of the AI market (Figure 1).

According to Sachin Garg – Associate Director at Markets and Markets, Artificial Intelligence Market was valued at USD 16.06 billion in 2017 and is expected to reach USD 190.61 billion by 2025, at a CAGR of 36.62% during the forecast period. AI constitutes various technologies that are vital in developing its ecosystem [2]. The AI market has been segmented on the basis of technology into machine learning (ML), natural language processing (NLP), and context awareness computing, and computer vision. Machine learning identifies patterns and learn from data and experiences to make predictions and recommendations [3]. Deep learning is the fastest growing machine learning technology which uses artificial neural networks to learn multiple levels of data, including texts, images, and sounds. Intelligent virtual assistant use NLP to provide proactive recommendations for product substitutes, handles high-volume-low-value communications, enables customers to effectively answer questions about their account, gets technical support, and fills out applications or forms and others which is driving the market for NLP in AI market (Figure 2).

Semiconductor chipset manufacturers are trying to rebrand themselves by increasingly adopting AI technology. GPU/CPU manufacturers such as NVIDIA, AMD, Intel, Qualcomm, Huawei, and Samsung have significantly invested in the development of AI chips and AI-enabled solutions to improve consumer-centric services [4]. Currently, AI-optimized chipsets are deployed in massive data centers or high-end servers as low-end computers are incapable of handling big data effectively. “The Artificial Intelligence Chipsets Market was worth USD 5.19 billion in 2017 and is expected to reach USD 59.26 billion by 2025, at a CAGR of 35.5% from 2018 to 2025”, said Mr. Sachin Garg (Figure 3).

Nowadays, companies are adopting new and faster ways to interact with their customers. Customer relationship management (CRM) systems, product reviews, and media comments are some key measures selected by companies to understand their customers at a granular level, thereby creating an effective marketing plan for their target audience [5]. AI helps marketers visualize programmatic advertising to focus on building strong and long-lasting client relationships. As far as possible, advertisements need to be relevant and personal to the target audience. The in-depth analysis of different market trends and developments is provided in the Artificial Intelligence in Marketing Market report published by Markets and Markets.

In the healthcare industry, big data comprises information generated from clickstream analysis and web and social media analytics; readings from medical devices such as sensors, ECGs, X-rays, and pulse oximeters; healthcare claims and other billing records; electronic medical records (EMRs); prescriptions; and biometric data; among other sources. Using complex computer algorithms, AI platforms can analyze unstructured data and allow physicians to scrutinize large volumes of datasets quickly and choose an optimal course of action. The Artificial Intelligence in Healthcare Market is estimated to be worth USD 33.65 billion by 2025, growing at a CAGR of 51.23% between 2018 and 2025 [6].

Digitization in the manufacturing industry has increased the capability to access, analyze, and manage vast volumes of data while rapidly developing the information architecture in the factory. Predictive maintenance and machinery inspection services are expected to be the major applications of AI in manufacturing. AI is redefining the responsibilities of robots in manufacturing setups in which intelligent robots that perform functions such as vision recognition, sound and movement detection, and torque control sensing are used. The in-depth analysis of different market trends and developments is provided in the Artificial Intelligence in Manufacturing Market report released by Markets and Markets.

The constantly increasing cybercrimes are forcing organizations to deploy cutting-edge security technologies such as AI in their security solutions. Cyber criminals are involved in distributed denial-of-service (DDoS) attacks, website defacement, customer account hijacking, and other malicious activities. Owing to the increase in the deployment of security solutions and services, the AI in Security Market is expected to witness significant growth in the next few years.

The Automotive AI market based on application has been segmented into autonomous vehicle, human-machine interface (HMI), and semiautonomous driving. The rising demand for enhanced user experience and convenience features is the key factor driving the growth of HMI in the AI market. The AI market for autonomous vehicles is estimated to grow at the highest CAGR between 2018 and 2025 [7]. Moreover, the concept of an intelligent car that gives a user an experience of advanced technologies, coupled with effective vehicle controls such as advanced cruise control and self-parking, is further elevating the growth of the automotive AI market [8].

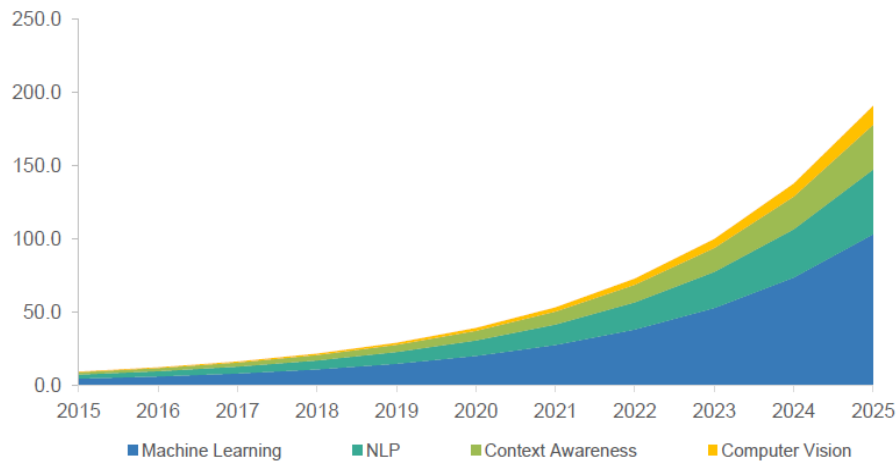
Agriculture is one of the emerging applications of AI. The adoption of AI technologies for applications such as yield monitoring, field

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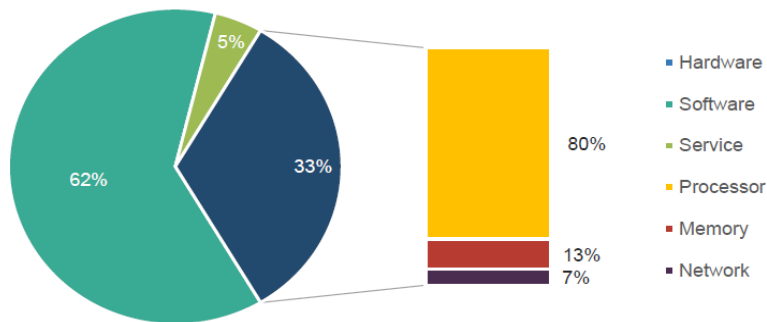
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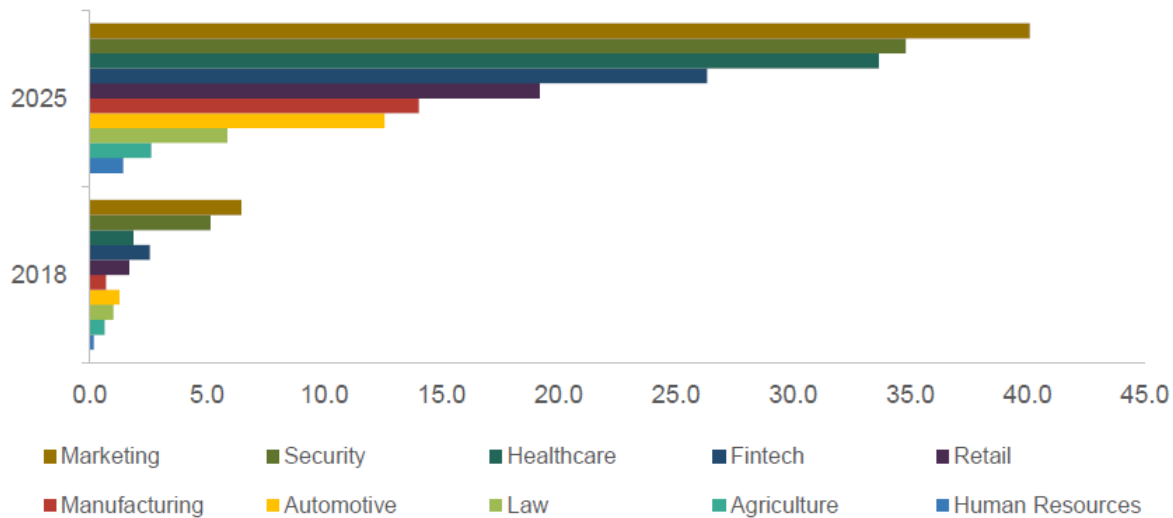
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Source: Markets and Markets Analysis
Figure 1: Artificial intelligence market, by technology (USD Billion).



Source: Markets and Markets Analysis
Figure 2: Artificial intelligence chipsets market, 2018.



Source: Markets and Markets Analysis
Figure 3: Artificial intelligence market, by End-User industry, 2018 Vs. 2025 (USD Billion).

mapping, crop scouting, weather tracking and forecasting, and irrigation management is driving the growth of the AI in Agriculture Market [9]. Moreover, AI is likely to be increasingly adopted for drone analytics owing to the rising use of drones in diagnosing and mapping crop health and making real-time decisions.

AI has emerged as an ideal solution to analyze unstructured data and produce meaningful outcomes. Using complex computer algorithms, AI platforms can analyze unstructured data and allow engineers to scrutinize large volumes of data from various sensors, inspection devices, public databases, and other sources in a short span of time; this helps choosing a quick and optimal course of action [10]. Some crucial aviation applications wherein AI is used include virtual assistants, smart maintenance, manufacturing, training, surveillance, and flight operations. The AI in Aviation Market is likely to be valued at USD 2.22 billion by 2025, growing at a CAGR of 46.65% during the forecast period [11].

According to Mr. Garg, AI-integrated robots are gaining traction with the increasing requirement of social robots for human interaction and assistance, among others. Companies such as Hanson Robotics, Softbank Robotics, ASUS, Jibo, NTT DATA, Blue Frog Robotics, MJI, AKA LLC, Pillo, UBTECH, and Sharp Corporation develop interactive humanlike robots that can recognize emotions and adapt behaviour [12]. The Global Artificial Intelligence (AI) in Robots Market based on robot type has been segmented into industrial robots (used by large-scale enterprises) and service robots (robotic systems that are designed considering the demand from individual and service industries) [13].

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