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Explainable AI - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2024 - 2029)

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Abstracts

The Explainable AI Market size is estimated at USD 8.63 billion in 2024, and is expected to reach USD 21.19 billion by 2029, growing at a CAGR of 19.69% during the forecast period (2024-2029).

Key Highlights

Explainable AI refers to the growth of artificial intelligence (AI) systems that can provide coherent and transparent explanations for their decision-making processes. AI models have achieved unparalleled performance in various domains. Explainable AI seeks to enhance trust, responsibility, and interpretability in AI systems. It is closely tied to more general growth and advancements in technology. As technology continues to evolve and enhance, explainable AI allows for the development and execution of more refined and transparent AI systems.

The advancements in digital transformation and progressive technologies, often referred to as Industry 4.0, are a driving trend behind the demand for explainable AI (XAI). This development has led to the successful adaptation of diverse industries by embracing digital technologies. Integrating XAI methods with Industry 4.0 technologies allows precise and high-quality applications, making firms more agile and customer-focused. Industry 4.0 leverages AI for predictive maintenance and fault detection, lowering unplanned downtime. With XAI, operators can understand the reason behind AI's predictions and recommendations. This transparency is crucial for maintenance personnel, permitting them to make informed findings about when and how to conduct maintenance activities.

The global explainable AI market is growing due to the rising regulatory and compliance

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requirements in various industries, such as finance, retail, and healthcare, to provide fairness, responsibility, and ethical use. Nations and regulatory bodies have recognized the significance of transparency and accountability in AI systems to assure ethical service and prevent biases or prejudiced outcomes. As a result, the preface of the General Data Protection Regulation (GDPR) in Europe and different guidelines from organizations, such as the Financial Stability Board (FSB), underline the need for explainability in AI algorithms, thus creating a promising outlook for the market. Moreover, a growing number of firms are adopting explainable AI solutions in adherence with these regulations and guidelines to provide transparent and interpretable AI systems, which, in turn, is positively influencing the market growth.

Fraud detection is a primary application area of explainable AI where it predicts fraudulent attacks and determines which attack has a more elevated threat. Cybersecurity is an increasing concern for companies and governments. Vendors of cybersecurity solutions are increasingly utilizing AI and explaining an AI algorithm's findings brings several benefits, including greater confidence in the system and a better understanding of its operation. Explainable AI solutions are being used in several areas of cybersecurity, enhancing the market growth. XAI consulting services specialize in assisting institutions adopt and implement AI solutions that are transparent, interpretable, and accountable.

Cloud-based solutions are an essential component of the present digital environment. The expanding trend of multi-cloud operation, as well as the growing need for cloud-based intelligence services, drives the demand in the market under study. The latest XAI technologies add unique and increased value to cloud computing. This aspect not only improves overall process viability but is also necessary for incorporating new technology. Explainable AI software can also help bridge the gap between cloud computing and modern breakthroughs. It also assists in satisfying the needs of new enterprises and startups.

On the contrary, the costs of business consulting, research and development, computing power, and cost to build minimal viable products are incurred before implementation. Factors such as automatic data preparation, delivering the infrastructure, processing, and making it actionable for systems and employees constitute the total cost for performance. The implementation cost is high and depends on the size of the industry. A significant challenge in the market is replacing the human workforce with AI. AI technology is the next step in maximum productivity, replacing individual craftsmanship with the factory production line.

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Explainable AI Market Trends

BFSI Segment is Expected to Hold Significant Share of the Market

The emerging field of XAI can enable banks to navigate such transparency and trust issues and provide greater clarity on AI governance. Due to insufficient customer onboarding processes, financial institutions lose millions of dollars. It becomes difficult for many banks to evaluate their health by applying for a loan. Explainable AI provides a system for eligibility checks and risk management while maintaining transparency. XAI forecasts the key insights to track the banks' performance. For example, Akira AI provides accurate, dynamic, and automated predictions, helping it to make better decisions for supply chain management and customer churn.

XAI is unprecedentedly transforming the BFSI industry. These technologies are revolutionizing accounting by automating routine tasks, reducing errors, improving accuracy, and improving efficiency. According to a report by ICAEW, AI can save 16% of the total cost of the finance function, and 88% of accounting experts believe AI will enhance their working lives in the next few years. Deception detection and prevention are another area where AI and technology transform accounting. Traditional auditing methods depend on manual sampling and testing, which can be time-consuming and prone to errors. AI-powered auditing tools can analyze large amounts of data quickly and accurately, identifying anomalies and questionable transactions. This enables auditors to focus on high-risk areas and potential frauds, lowering the risk of financial loss and reputational damage for businesses.

AI improves the cash management of banks by predicting loan demand, payment speed, and ATM requirements. Banks are using historical cash data to build models that predict cash availability. These insights give banks the right amount of money where and when anyone needs it. The operations of automated teller machines (ATMs) in various regions can be monitored by AI tools and financial institutions can know which ATMs have cash shortage and can be refilled again without causing any inconvenience to the customer. For instance, according to Japanese Bankers Association, as of September 2023, regional banks had installed over 28.5 thousand ATMs and cash dispensers (CDs) across Japan. The Japan Post Bank recorded almost 31.5 thousand ATMs and CDs.

There are various banks and financial institutions that are incorporating XAI to provide better services to their customers. For instance, in September 2023, Temenos unveiled a generative AI solution that automatically categorizes banking transactions. The

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technology empowers banks to offer personalized insights, create unique digital banking experiences, and provide relevant products. The company stated that Temenos is at the forefront of AI in banking. The first to bring true explainable AI to the financial services industry, which helps financial institutions explain in simple business language to customers and their clients alike how AI-based decisions are taken.

According to Nvidia survey 2023, data analytics was the most used AI-enabled application in the financial services industry in 2023. Based on the survey, 69% of the respondents used AI for data analytics, followed by data processing. Other common AI use cases were natural language processing and large language models. The adoption of AI in financial businesses increased significantly since 2022, and it is anticipated to increase even further in the coming years. Such huge adoption of AI in finance sector would drive the growth of the market.

North America is Expected to Hold Significant Share of the Market

North America has a robust innovation ecosystem supported by strategic federal investments in advanced technology, in addition to the presence of forward-thinking scientists and entrepreneurs who come together from around the world and renowned research centers that have accelerated the development of AI in the North American region. The industry is anticipated to benefit from many US government initiatives related to AI. For instance, the Expanding AI Innovation through Capacity Building and Part II program was launched by the US National Science Foundation in coordination with the US Department of Agriculture, the US Department of Homeland Security, the Science and Technology Directorate, the National Institute of Standards and Technology, National Institute of Food and Agriculture, and the US Department of Defense.

The National Security Commission on Artificial Intelligence's final report proposed that Congress is expected to increase federal R&D funding for AI by a factor of two annually, up to a total of USD32 billion by fiscal year 2026. The federal R&D budget will be increased by 28% from FY 2021 authorized levels to more than USD 204 billion under the Biden administration's fiscal 2023 budget plan. The National AI Research Institutes, both new and established, would get some of those funds. To address the difficulties of AI research and workforce development, these institutes bring together the commercial sector, organizations, academics, and federal, state, and municipal authorities. Such government initiatives for the development of AI will create an opportunity for the market

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studied to grow.

In addition, Statistics Canada, like many other national statistical agencies, has embraced machine learning and artificial intelligence and is increasingly utilizing alternative data sources to enhance and modernize its many statistical systems. Machine learning techniques are frequently needed to exploit these new data sources because of their volume and speed. Since AI is promoting economic development and high-quality employment in Canada, the government of Canada is dedicated to funding initiatives to accelerate the adoption of AI throughout the economy and society. For instance, the federal government announced an investment of USD 443 million recently in the Pan-Canadian Artificial Intelligence Strategy's second phase. The Pan-Canadian Artificial Intelligence Strategy's second phase will assist in maximizing AI's potential for Canadians' benefit, speed up reliable technology development, and promote diversity and collaboration within the AI community.

Various retail firms in the North American region are adopting AI to provide better services to customers. For example, ThredUp, an online consignment business, introduced Goody Boxes, comprising different used apparel items tailored to each customer's style. Customers keep and pay for the things they want while returning the ones they do not want. An AI algorithm recalls each customer's preferences so that future boxes are more tailored to their interests. Customers prefer non-subscription boxes overlooking individual parts. Tesla’s self-driving cars are one of the examples of AI and IoT working in tandem. With the incorporation of AI, self-driving cars predict the behavior of cars and pedestrians in various circumstances. For instance, they can determine road conditions, weather, optimal speed and get smarter with each trip.

Most manufacturers partner with firms that can provide complete services to support a large-scale XAI solution. Vendors like Microsoft are helping manufacturing organizations with their AI offerings. The increasing adoption of AI within manufacturing institutions enables increased efficiencies in defect detection, quality assurance, assembly line integration, assembly line optimization, and generative design. New computer vision technologies are being developed, powered by AI and deep learning, making it possible to automate visual inspection to match the increasing global demand.

Explainable AI Industry Overview

The XAI market is semi-consolidated, with a few prominent players such as IBM

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Corporation, Microsoft Corporation, Amelia US LLC, Google LLC, and Arthur.ai. To increase market share, corporations continually spend on strategic partnerships or acquisitions and solution and services development. The following are some recent market developments:

In March 2024, Apple Inc. acquired DarwinAI, an AI visual quality assurance startup that provides an end-to-end solution for improving product quality while increasing production efficiency. Darwin AI's patented XAI platform has been adopted by numerous Fortune 500 companies. Apple’s acquisition of DarwinAI aligns with its longstanding practice of discreetly assimilating innovative technology firms into its ecosystem.

In July 2023, Fujitsu Limited announced a strategic agreement with Informa D&B to deliver new value by bringing XAI to the business and financial information industry. This collaboration brings with it a new era of decision-making through the incorporation of explainable AI technology. Fujitsu and Informa are committed to bringing transformative innovation to the industry through the introduction of this technology, which will allow Informa's 4.5 million users in Spain access to highly sophisticated data in an agile and efficient manner, significantly improving the quality of business information solutions.

Additional Benefits:

The market estimate (ME) sheet in Excel format

3 months of analyst support

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