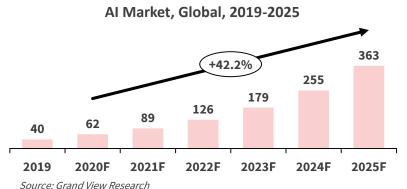# Global AI Market

Market Overview

- The global artificial intelligence market size was valued at USD 39.9 billion in 2019 and is expected to grow at a compound annual growth rate (CAGR) of 42.2% from 2020 to 2027

AI Market, Global, 2019-2025

+42.2%

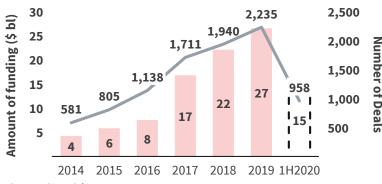| 2019 | 2020F | 2021F | 2022F | 2023F | 2024F | 2025F |
| 40 | 62 | 89 | 126 | 179 | 255 | 363 |

Source: Grand View Research

- The continuous research and innovation directed by the tech giants are driving the adoption of advanced technologies in industry verticals, such as automotive, healthcare, retail, finance, and manufacturing

- However, technology has always been an essential element for these industries, but AI has brought technology at the center of the organizations. For instance, from self-driving vehicles to crucial life-saving medical gear, AI is being infused virtually to every apparatus and program

- AI is proven to be the significant revolutionary element of the upcoming digital era. Tech giants like Amazon.com, Inc.; Google LLC; Apple Inc.; Facebook; International Business Machines Corporation; and Microsoft are investing significantly in the research and development of AI. These companies are working for making AI more accessible for enterprise use-cases

- The essential facet accelerating the rate of innovation in the field of AI is accessibility to historical datasets. Since the data storage and recovery has become more economical, healthcare institutions and government agencies are building unstructured data accessible to the research domain

- Furthermore, progress in profound learning and Artificial Neural Networks (ANN) has also fueled the adoption of AI in several industries, such as aerospace, healthcare, manufacturing, and automotive. ANN is substituting conventional machine learning systems to evolve precise and accurate versions

- For instance, recent advancements in computer vision technology, such as Generative Adversarial Networks (GAN) and Single Shot MultiBox Detector (SSD), have led to digital image processing techniques

- The continuous research in computer vision has built the foundation for digital image processing in security and surveillance, healthcare, transportation, other sectors.

Funding to Artificial Intelligence Startups

- Funding to artificial intelligence startups has been on the rise. In 2019, AI startups received a record $28.5B in funding across over 2,300 deals — a 20% increase in funding to the sector (For comparison, in 2018 there were about 1,900 agreements for a total of $22.1 billion, and in 2017 - about 1,700 deals for $16.8 billion)[1]

- Earlier, the National Venture Capital Association announced that although total venture capital fell in 2019, investors contributed a record $18.4 billion to the development of AI startups in the United States

- Despite the ongoing coronavirus pandemic, 2020 has seen sustained momentum — AI deals declined in Q1'20, but funding jumped by 51% from the previous quarter to hit $8.4B[1]

AI Startup Funding, Global, 2014 - 2020

Year	Amount of funding ($ bl)	Number of Deals
2014	4	581
2015	6	805
2016	8	1,138
2017	17	1,711
2018	22	1,940
2019	27	2,235
1H2020	15	958

Source: CB Insights

Top 100 Most Promising AI Startups in The World

Market Overview

- The CB Insights 4th annual AI 100 finalists include AI startups from 13 countries, pushing the boundaries of AI research and commercial adoption across 15 industries and a broad range of cross-industry applications

- **The 2020 AI 100 startups have raised over $7.4B** in funding across 300+ deals from 600+ unique investors

- **The list includes 10 unicorns** focused on a diverse range of AI solutions. One unicorn on the list is Faire, a wholesale marketplace that uses machine learning to match local retailers with goods that are predicted to sell well in their specific locations. Butterfly Network, another unicorn on the list, is building a portable ultrasound device that uses AI-assisted diagnostics. Meanwhile, enterprise-focused unicorn DataRobot provides tools to help companies develop AI applications

- **The list includes early-stage startups** like Caspar AI, which has struck deals with companies like Panasonic and The Wolff Company to develop smart home solutions. Another early-stage company on the list is Israel-based Razor Labs, which has provided AI services to mining companies
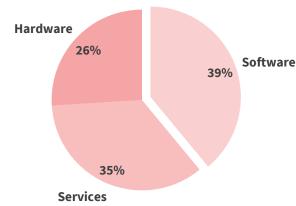
Global AI Market at a Glance (1/2)

Solution Insights

- Software led the artificial intelligence market and accounted for more than 39.0% share of the global revenue in 2019

- This high share is attributed to the prudent improvements in information storage capacity, high computing power, and parallel processing capabilities to deliver high-end AI software in dynamic end-use verticals

- Artificial intelligence software solutions include libraries for designing and deploying AI applications, such as those for primitives, linear algebra, inference, sparse matrices, video analytics, and multiple hardware communication capabilities

- The need for enterprises to understand and analyze visual content to gain meaningful insights is expected to spur the adoption of AI software over the forecast period

- Artificial intelligence services include installation, integration, and maintenance and support undertakings. The segment is projected to grow at a significant rate in the AI market in the future

- AI hardware includes chipsets such as Graphics Processing Unit (GPU), CPU, Application-specific Integrated Circuits (ASIC), and Field-programmable Gate Array (FPGA). Currently, the AI hardware market is dominated by GPUs and CPUs due to their high computing capabilities required for AI frameworks
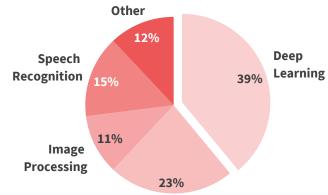
AI Market Segmentation, Global, 2019, %

- Hardware 26%
- Software 39%
- Services 35%

Source: Grand View Research

Technology Insights

- Deep learning led the market and accounted for more than 39.0% share of the global revenue in 2019

- This high share is attributed to its prominence because of its complicated data-driven applications, including text/content or speech recognition

- Deep learning offers lucrative investment opportunities as it helps in overcoming challenges of high data volumes

- For instance, in March 2018, NVIDIA Corporation announced a strategic partnership with Arm Limited to bring deep learning inferencing to the Internet of Things (IoT) and consumer electronics devices in the global marketplace

- Machine and deep learning cover significant investments in AI. It includes both AI platforms and cognitive applications, including tagging, clustering, categorization, hypothesis generation, navigation, and visualization, which facilitate the development of advisory, intelligent, and cognitively-enabled solutions

- Growing deployment of cloud-based computing platforms and on-premises hardware equipment for the safe and secure restoration of large volumes of data has paved the way for the expansion of the analytics platform

- Rising investments in research and development by leading players will also play a crucial role in increasing the uptake of AI technologies
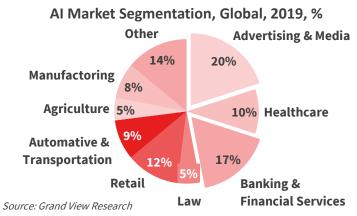
AI Market Segmentation, Global, 2019, %

- Other 12%
- Speech Recognition 15%
- Image Processing 11%
- Natural Language Processing 23%
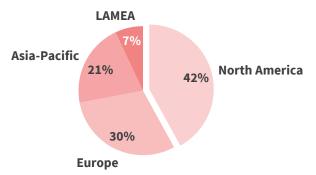- Deep Learning 39%

Source: Grand View Research

Global AI Market at a Glance (2/2)

End-use Insights

- The advertising and media segment led the market and accounted for more than 20.0% share of the global revenue in 2019

- However, the healthcare sector is anticipated to gain a leading share by 2027. This segment has been segregated based on use-cases, such as robot-assisted surgery, dosage error reduction, virtual nursing assistants, clinical trial participant identifier, hospital workflow management, preliminary diagnosis, and automated image diagnosis

- The BFSI segment includes financial analysis, risk assessment, and investment/portfolio management solicitations. Artificial intelligence has witnessed a significant share in the BFSI due to high demand for risk and compliance applications in the sector

AI Market Segmentation, Global, 2019, %

Source: Grand View Research

AI Market Segmentation, Global, 2019, %

Source: Grand View Research

Regional Insights

- North America dominated the AI market. This high share is attributable to favorable government initiatives to encourage the adoption of AI across various industries

- In 2019, U.S. President Donald J. Trump launched the American AI Initiative as the nation's strategy for promoting leadership in artificial intelligence

- Asia Pacific is anticipated to witness significant growth in the market for artificial intelligence. This growth owes to the significantly increasing investments in artificial intelligence

- In 2018, Baidu, a China-based tech giant, announced that it has entered into definitive agreements with investors concerning the divestiture of its Financial Services Group (FSG), providing wealth management, consumer credit, and other business services
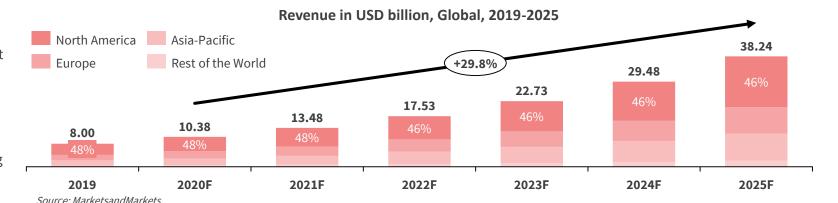
Covid – 19 Pandemic

- The Covid-19 pandemic has emerged as an opportunity for AI-enabled computer systems to fight against the epidemic as several tech giants and start-ups are working on prevent, mitigate, and contain the virus

- For instance, the Chinese tech giant Alibaba's research institute Damo Academy has developed a diagnostic algorithm that can detect new coronavirus cases with the chest Computed Tomography (CT) scan

- COVID-19 outbreak is expected to stimulate AI market growth of next-generation tech domains, including AI, owing to the mandated work-from-home (WFH) policy due to this pandemic

- For instance, LogMeIn, Inc., a U.S.-based company that provides SaaS and cloud-based customer engagement and remote connectivity, has experienced a significant increase in new sign-ups across its all product portfolios amid the pandemic

- Also, tech companies are expanding their product offerings and services to widen availability across the globe. For instance, in April 2020, Google LLC launched an AI-enabled chatbot, called Rapid Response Virtual Agent for call centers. This chatbot is built to respond to issues customers might be experiencing due to coronavirus (COVID-19) outbreak over voice, chat, and other social channels

The Global Artificial Intelligence in Marketing Market

Market Overview

- The market is expected to be valued at USD 6.46 Billion in 2018 and is likely to reach USD 40.09 Billion by 2025, at a CAGR of 29.79% during the forecast period

- Growth in the adoption of customer-centric marketing strategies, increase in demand for virtual assistants, and increased use of social media for advertising are the major factors driving the demand for AI-based marketing and sales solutions

Revenue in USD billion, Global, 2019-2025

Legend: North America, Asia-Pacific, Europe, Rest of the World

+29.8%

Year	Value	%
2019	8.00	48%
2020F	10.38	48%
2021F	13.48	48%
2022F	17.53	46%
2023F	22.73	46%
2024F	29.48	46%
2025F	38.24	46%

Source: MarketsandMarkets

Drivers

The increasing growth of digital data in the form of speech, videos and images from different social media sources including IoT and consumer analytics is driving the need for data mining and analytics

Cloud AI

Several businesses have already moved part of their operations to the cloud, which has encouraged vendors to develop cloud-based solutions. Migrating to the cloud has benefits such as enhanced flexibility, control, and scalability

Deep Learning

The Deep Learning segment is estimated to dominate the global AI market. It has applications in computer vision, natural language processing, social network filtering, etc. Machine Vision segment is estimated to witness the highest growth in the future

Software

Software holds a major share of the overall AI in marketing market owing to the developments in AI software, including application program interfaces (language, speech, vision, and sensor data) along with machine learning algorithms, to realize various applications for sales and marketing

North America

North America dominated the artificial intelligence market, which is stemmed from increased investments in artificial intelligence and deep learning research. The high adoption of image and pattern recognition in the region is expected to open new growth opportunities over the forecast period
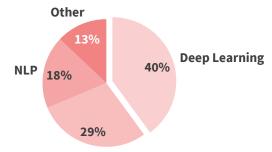
Global AI in Marketing Market at a Glance

Market Overview

- Implementation of artificial intelligence (AI) has been increased by Google, Facebook, Amazon, IBM, Microsoft, and other technological companies for more effective advertising and marketing strategies

- Further, the use of AI for automatically drafting narrative texts and articles about data-oriented topics in media is prevalent these days

- The data volume has increased exponentially, with the increase in the use of mobiles, internet, social media, and low-cost sensors, which led to the development and innovations in techniques for analyzing and managing large data sets for better customer engagement

- Ads that adapt according to the user reactions are projected to be a major growth factor for customer engagement and to further expand the market

- For instance, in 2018, Lexus released the first AI scripted advertisement, in which Lexus leveraged IBM Watson to examine 15 years of car and luxury brand campaigns data

- Moreover, leveraging various AI platforms for improvement in advertisements and creating newer and effective models for attracting customers are huge growth opportunities for the market

AI In Marketing

- **Chatbots:** intelligent chatbots are supplying borderline magic customer service. In several cases, they're better at generating personalized content than humans

- **Hyper personalized content creation:** AI tools can be used to automatically generate personalized email content, offers messages, reports, etc

- **High-quality analitics:** AI tools can scrape data from numerous points that can be consolidated into a final analysis. This will identify opportunities of success and give creative solutions for content fabrication

- **Lifetime of customers:** AI-powered churn prediction can help to analyze omnichannel events and identify dropping client engagement. AI-powered churn prediction helps keep more of your clients engaged, leading to higher lifetime value and profits

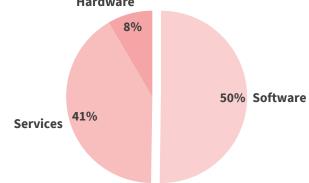### Marketing AI Market Segmentation, Global, 2019, %

Other 13%
NLP 18%
Machine Learning 29%
Deep Learning 40%

Source: Grand View Research

Technology Solutions

- The software solution segment dominated the AI market with 50% of the overall market share

- Software solution segment was followed by services segment, which constituted 41% of the market share

Marketing AI Market Segmentation, Global, 2019, %
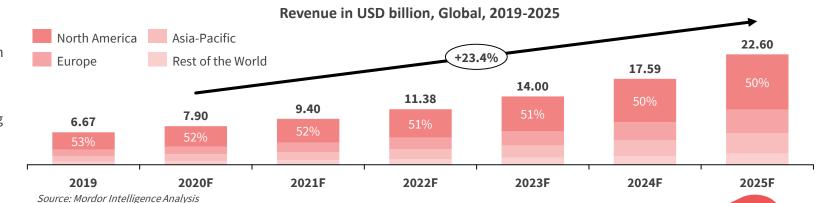

Hardware 8%
Services 41%
Software 50%

Source: Grand View Research

- AI can be helpful in advertising and media as it can provide analytics, voice recognition, consumer behaviour prediction, digital assistance and automation

- The software framework provides libraries for designing and deploying artificial intelligence applications. It includes libraries for inference, primitives, video analytics, sparse matrices, linear algebra, and multi-hardware communication capabilities

Global AI in Fintech Market

Market Overview

- AI and machine learning have benefited the banks and fintech as they can process huge amounts of information about customers

- The studied market is expected to witnessing growth, due to the advancements in natural language processing (NLP), which is being implemented in chatbots, and contract intelligence, where AI reads the free text in contracts and also reads non-compliance in the documents

Revenue in USD billion, Global, 2019-2025

Legend:
- North America
- Europe
- Asia-Pacific
- Rest of the World

+23.4%

2019	2020F	2021F	2022F	2023F	2024F	2025F
6.67	7.90	9.40	11.38	14.00	17.59	22.60
53%	52%	52%	51%	51%	50%	50%

Source: Mordor Intelligence Analysis

Global Fintech AI
The global AI in fintech was estimated at **USD 6.67 billion in 2019**, and it is expected to reach **USD 22.60 billion by 2025**

Solution Segment
The solution segment held the largest market share (**72.51%**) in 2019, and it is expected to **register the highest CAGR of 23.95%** during the forecast period

Cloud AI
In terms of deployment type, **cloud** occupied the largest market share (**81.31%**) in 2019, and it is expected to witness a **CAGR of 24.65%** during the forecast period

Fraud Detection AI
By application segments, **chatbots** occupied the largest market share with **36.51%** in 2019. **The fraud detection segment** is expected to witness **the highest CAGR of 24.57%** during 2020F-2025F

North America & Asia-Pacific
North America held the largest market share with **52.85%** in 2019. **Asia-Pacific** is expected to register a **CAGR of 25.33%** during the forecast period

The Fintech 250: The Top Fintech Companies of 2020

Market Overview

- The 2020 Fintech 250 cohort has raised approximately $49.2B in aggregate funding across nearly 900 deals since 2015, and includes startups at different investment stages of development, from early-stage companies to well-funded unicorns

- **Funding trends:** In 2020 year-to-date (YTD), these 250 private companies have raised $10.3B in equity funding across 120 deals (as of 8/26/20)

- **Global representation:** 46% of the 2020 Fintech 250 are based outside the US. After the US, the UK is home to the most Fintech 250 companies (38), followed by India (20)

- **Top VC investor:** Ribbit Capital is the most active investor in this year's Fintech 250 companies. Since 2018, Ribbit has participated in 45 deals to this cohort of companies, including to Hippo, Nubank, Upgrade, Robinhood, and BharatPe

- **Top deal of 2020:** Grab raised a $856M Series I in Q1'20 with participation from investors Mitsubishi UFJ Financial Group and TIS INTEC Group

- **Most well-funded:** Grab is the most well-funded company on the Fintech 250 list, having raised approximately $9.7B across 22 rounds since 2014

Global AI in Fintech Market - Financial Services

Market Overview

- AI is further on its way to becoming mainstream in Financial Services within the short term

- For instance, according to a survey conducted by Cambridge Centre for Alternative Finance in 2020, 85% of all respondents in the survey used some forms of AI
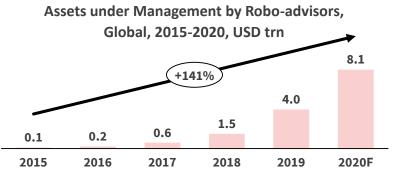
Sub-categories of AI-Enabled Analytics	Proportion Currently Using Analytics Category
Sales Analytics	66 %
Credit Analytics	55 %
Market Sentiment Analytics	53 %
Corporate Finance Analytics	34 %
Macroeconomic Forecasting	29 %
M&A Analytics	14 %

Source: CCAF

- The fintech industry is witnessing a significant increase in the number of start-ups. These players are also highly attracted to the adoption of artificial intelligence to automate and expand their businesses

- Aire, Kabbage, and Kasisto are some of the most prominent start-ups in financial sector that invested in AI. For instance, Kabbage uses AI algorithms that assess the risks of lending money to a certain customer. It allows the managers of the company to sanction loans in minimal time

Asset Management

- AI is being incorporated for Roboadvisors for asset management solutions

- According to a study from the University of Indiana, In the long run, robo-analysts appear to make more profitable stock recommendations than human research analysts[1]

- AI powered Robo-advisors analyze web data, including social media data, to analyze the realtime behavior of people for providing insights into optimal asset allocation strategies

- For instance, with a combination of Big Data analytics and AI, live data from various social media outlets is being collected

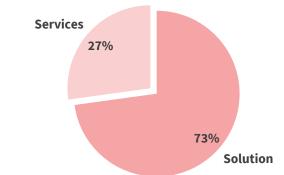- It is analyzed to help traders anticipate the fluctuations in a company's stock price

Assets under Management by Robo-advisors, Global, 2015-2020, USD trn

+141%

2015	2016	2017	2018	2019	2020F
0.1	0.2	0.6	1.5	4.0	8.1

Source: Business Insider

Technology Solutions

- AI techniques are increasingly being integrated into a wide variety of technology solutions, including fraud detection, and digital assistants (bots), among others

- The growth of big data, flexible cloud platforms, the expansion of global commerce, and changes in the regulatory landscape are the factors driving opportunities for artificial intelligence solutions in the Fintech sector

Ai in Fintech Market Segmentation, Global, 2019, %

- Services 27%
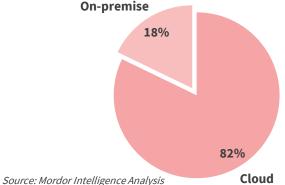- Solution 73%

Source: Mordor Intelligence Analysis

- AI solutions allow organizations to extract a better picture of their compliance-related issues, as well as data management

- Software tools help in deploying AI-enabled solutions in the finance sector to extract a large amount of data, as well as accurate and complete data on time

Global AI in Fintech Market - Application Services

Cloud-based Services

- Since fintech companies are relatively new and offer services that are disruptive in nature cloud-based services have become practical solutions

- They allow financial organization to use them on a pay-per-use basis. Such changes in business models of software service vendors have helped several small- and medium-sized organizations to turn toward cloud-based AI fintech solutions
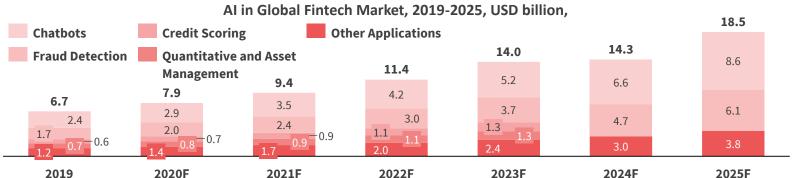
Ai in Fintech Market Segmentation, Global, 2019, %

On-premise 18%

Cloud 82%

Source: Mordor Intelligence Analysis

- Recently, Temenos, the banking software company, launched new transparent AI (XAI) models delivered as SaaS, in order to help banks and credit unions speed up digital onboarding and loan processing for economic relief to SMEs and retail customers during COVID-19 crisis

Global Ai in Fintech Market Segmentation by Application

- **Chatbots** are assistants in their pure form and can help businesses save up to 30% of the amount spent on customer requests servicing.
  Chatbots can work 24/7 and notify the Fintech services users about any changes concerning their financial account or transaction. It improves customer satisfaction and is a strategically important parameter in customer retention.

AI in Global Fintech Market, 2019-2025, USD billion,

Legend: Chatbots | Credit Scoring | Other Applications | Fraud Detection | Quantitative and Asset Management

	2019	2020F	2021F	2022F	2023F	2024F	2025F
Total	6.7	7.9	9.4	11.4	14.0	14.3	18.5
	2.4	2.9	3.5	4.2	5.2	6.6	8.6
	1.7	2.0	2.4	3.0	3.7	4.7	6.1
	0.6	0.7	0.9	1.1	1.3	3.0	3.8
	0.7	0.8	0.9				
	1.2	1.4	1.7	2.0	2.4		

Source: Mordor Intelligence Analysis

- **In credit scoring**, the use of AI omits the probability of biases and helps the decision maker to back their decision based on data-driven inferences. AI uses structured and unstructured data that are available to the financial services to improve the customer experience and engagement, to detect outliers and anomalies, reduce costs, find predictability in patterns, and increase forecast reliability

- **Fraud detection and management** are imperative for financial institutions, now more than ever, as firms are faced with new and more sophisticated threats to client data, in addition to security breaches. Fraud prevention and detection represent the most significant area of concern, for the financial institutions. This segment is likely to become one of the prominent drivers of IT expenditure. Thus, AI capable of avoiding these frauds is expected to experience increased adoption, in Fintechs
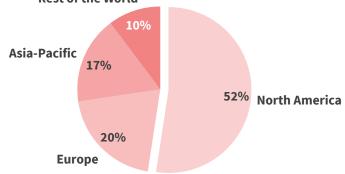
- **Investment advisory services**, for instance, are undergoing radical changes with the growth and evolution of automated wealth advisers. These advisers have the capabilities to assist the investors without the intervention of a human adviser, and can also be used in combination with a human adviser. It extends the ability to provide tailored, actionable advice to its investors with ease of access, at a partially lower cost

Global AI in Fintech Market – Geographical Segmentation

Ai in Fintech Market Segmentation, Global, 2019, %

Source: Mordor Intelligence Analysis

North America

- North America is one of the largest and most advanced markets for AI in the world. The region has also registered the maximum adoption of AI in fintech solutions, due to its early implementation in most application areas

- The strong economy, robust presence of prominent AI software and system suppliers, and combined investment by government and private organizations for the development and growth of R&D, are poised to drive the demand for AI in the fintech market

- Fintech firms in the region are grappling with unprecedented opportunities and challenges in digital finance, due to changing customer expectations, emerging new technologies, and fluctuating regulations

- According to the World Payments Report published by World Bank, this region has one of the highest penetration, in terms of citizens' bank accounts, and has the highest concentration of ATMs per 100,000 people

- According to Baker McKenzie, the ongoing economic expansion in the United States has attracted considerable investment in the fintech sector. Payments and Insuretech continue to dominate the landscape of the fintech sector in the country. According to CB Insights, the country's fintech startups have witnessed 70+ mega-rounds of funding accounting to more than USD 100 million in 2019

Europe

- Europe holds a significant share of the global AI market. The major driving factor in the region is the government's initiatives in boosting the adoption of AI. Considerable activity in the fintech sector is one of the most prominent drivers for the region's AI market

- Over the past few years, the region has gone through several regulatory changes, such as MIFID II and PSD2, and was affected significantly by the Brexit. The United Kingdom is the most prominent country in the European union and was considered to be the next fintech hub of Europe. Due to the uncertainty of Brexit, financial and banking service providers have shifted their key operations from the UK to other regions

- Banks and financial service providers in the region are using Artificial intelligence (AI) to enhance the customer experience. They are utilizing AI in Chabots, InsureTec, banking robots, and other multichannel customer support services

Asia-Pacific

- Asia Pacific is the fastest-growing market for AI adoption globally. Similar to Europe, the Asia Pacific region has been witnessing increasing demand from the fintech sector. China and India continue to be the largest FinTech ecosystems, based on investments and a number of startups, and Singapore continues to position itself as a leader in the Southeast Asian region, given its supportive startup and FinTech ecosystem

- China leads the Asia-Pacific region in FinTech development, with its focus on the new technologies. In many other Asia-Pacific markets, FinTech is still defined by alternative lending, mobile payments, and robo-advice

- India is leading the way for digital banking. The United Payments Interface (UPI) aims to make peer-to-peer transactions as fast and easy as sending a text message. The other integral focus of UPI is interoperability