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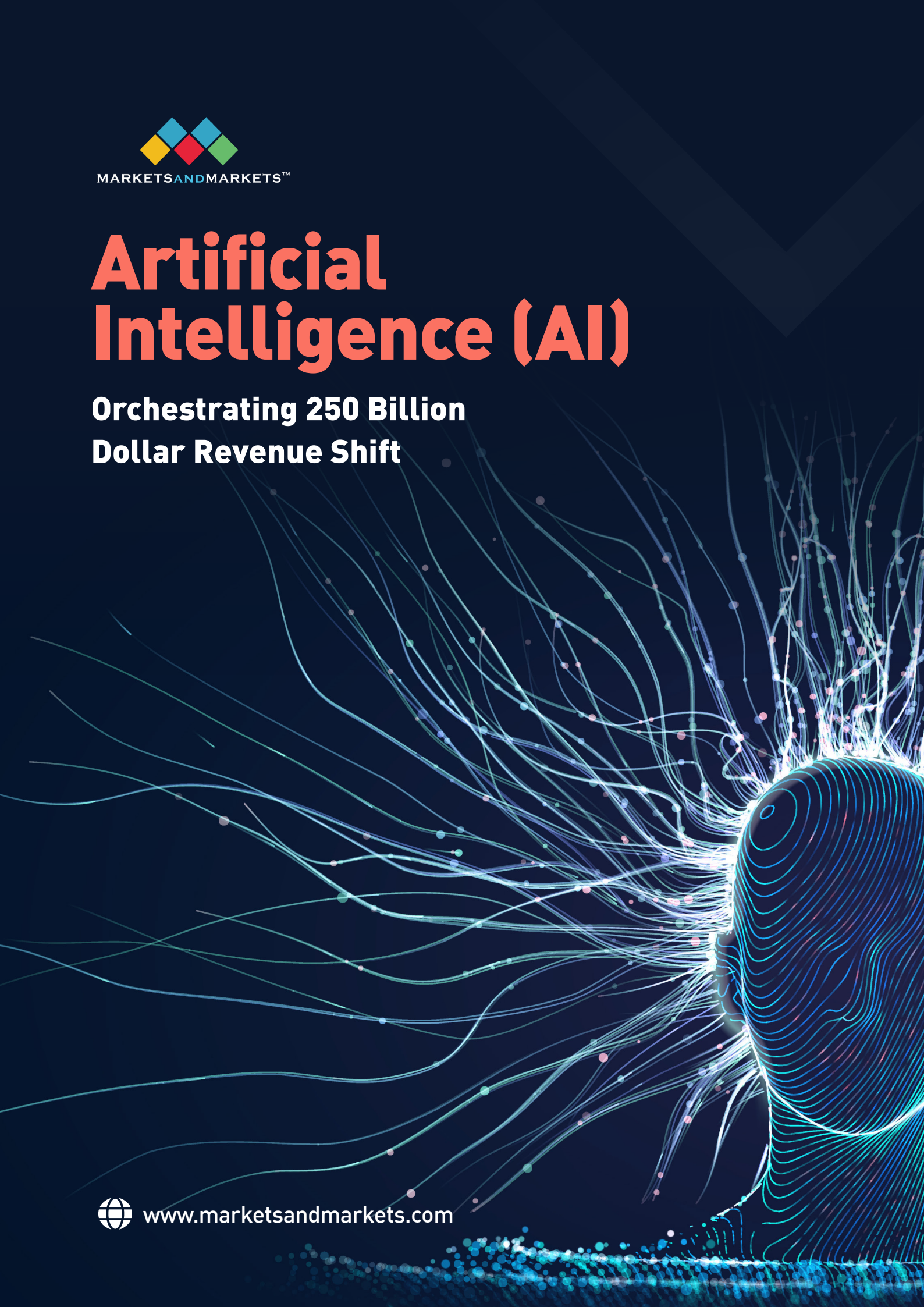
Artificial Intelligence (AI)

Orchestrating 250 Billion Dollar Revenue Shift



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01

CURRENT MARKET SCENARIO

Over the past few years, Artificial Intelligence (AI) has frequently been cited as an emerging technology, impacting a multitude of industries. However, before the COVID-19 pandemic, business leaders were not racing to understand the role AI could play in optimizing their business operations, boosting profitability, and driving innovation.

In a 2021 survey of global executives, McKinsey found that only 56 percent of all respondents report AI adoption in at least one function, up from 50 percent in 2020. The newest results suggest that AI adoption since last year has increased most at companies headquartered in emerging economies, which includes China, the Middle East and North Africa: 57 percent of respondents report adoption, up from 45 percent in 2020.

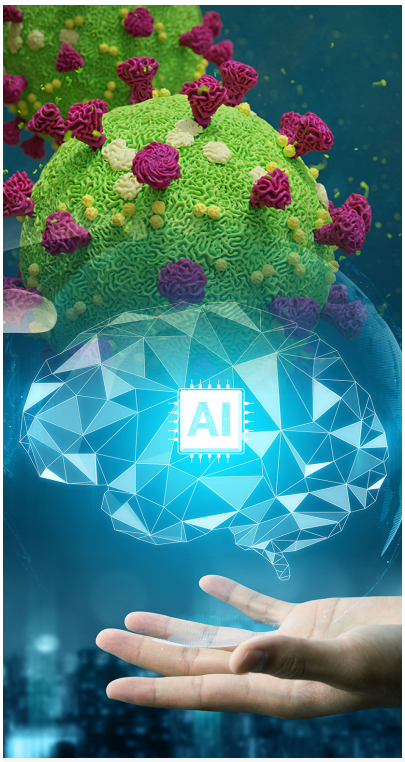
ACCORDING TO A 2021 SURVEY CONDUCTED BY PWC

58%
of survey respondents have increased investments in AI for workforce planning,

48%
are ramping up investments for simulation modeling and supply chain resilience

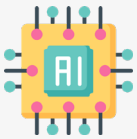
43%
are upping investments in AI for scenario planning

42%
for demand projection.



IMPACT ON ARTIFICIAL INTELLIGENCE IN THE POST COVID-19 PERIOD

The COVID-19 outbreak itself was first identified using AI, thus forcing companies to become "digital-first". The pandemic caused economic and business disruptions, making organizations speed up their pilots and large-scale implementations and make them live in weeks or months instead of years. Considering the urgent need for digital transformation, businesses of all sizes and industries are finding that with the use of AI and automating routine tasks, the speed and scale required to achieve operational efficiencies and maintain their relationships with customers has increased.



- One airline saw cancellation requests explode from an average of 500 to 4,000 per day.
- A large bank had to promptly update six million loan records, a project that would take an estimated 100 people working for two years.
- Meal delivery service, Sun Basket, faced a sudden 50% spike in its volume when the pandemic hit and needed to transform its customer service quickly.

Investing in AI tools can improve profitability in a moment when many businesses are doing more with less. But AI does not just drive efficiency — it delivers value.

- In the McKinsey survey, a majority of executives at companies that were using AI stated that it led to higher revenue, and 44% said it reduced costs.
- According to recent Salesforce research, 73% of customers expect companies to understand their needs and expectations, but only half feel that companies generally do so. At the same time, 62% say they are open to businesses using AI to improve their experiences.

AI/Machine Learning (ML) tools can help bridge this gap by helping humans do their jobs better and enabling seamless and customized engagements at scale.

02 ARTIFICIAL INTELLIGENCE ECOSYSTEM AND MARKET INTERCONNECTIONS

AI has gone through a revolution over the last five to ten years. The market map consists of various participants in the AI ecosystem, such as hardware and devices, software tools, platforms, and services. Many innovative startups have emerged significantly in the recent past, and this is likely to help increase the adoption of AI in the future. The ecosystem is complex and gives rise to possibilities of coming up with new applications with a combination of different technologies, systems, and innovations.

FIGURE 1 ARTIFICIAL INTELLIGENCE ECOSYSTEM

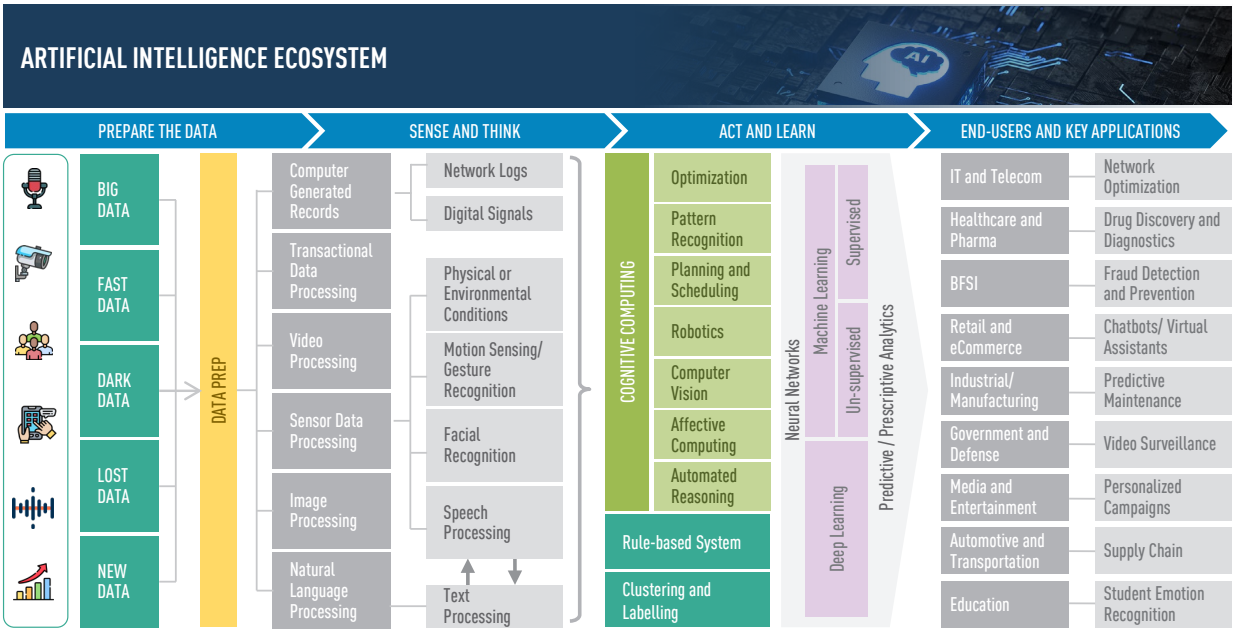
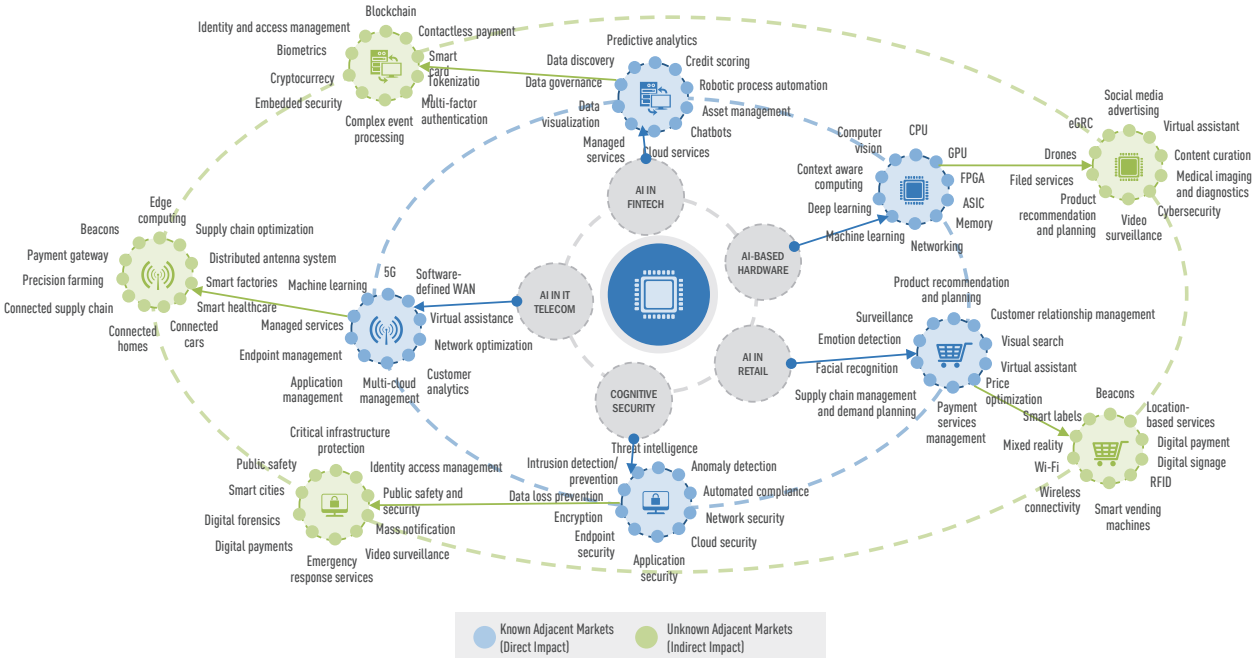


FIGURE 2 ARTIFICIAL INTELLIGENCE MARKET INTERCONNECTIONS



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ARTIFICIAL INTELLIGENCE ADOPTION

AI concepts and applications are not new to organizations. Technologies such as ML, data mining, cognitive search, along AI-based systems, including expert systems, have been around for decades. However, it is only in the last five to ten years that the performance of AI has improved to the extent that practical applications and deployment is possible due to the following factors:

ABUNDANCE IN COMPUTING POWER

With the advancement in computing power, it is possible to process large datasets in short times, which is needed for the training and fast deployment of AI algorithms.

RAPIDLY DECLINING STORAGE COSTS

Storage costs have declined, making it cheaper and easier to store large volumes of data, which is a prerequisite for the successful training and deployment of non-trivial algorithms, such as deep learning.

SURGE IN DATA AVAILABILITY

In recent years, there has been a proliferation in the number of available datasets, which is propelled by the rise in connected devices, machines, and user-generated data. The size of the digital universe is doubling every two years at least, and a 50-fold growth from 2010 to 2020 has been witnessed. Human- and machine-generated data is experiencing an overall 10x faster growth rate than traditional business data, and machine data is increasing even more rapidly at 50x the growth rate.

INCREASE IN AI INVESTMENTS

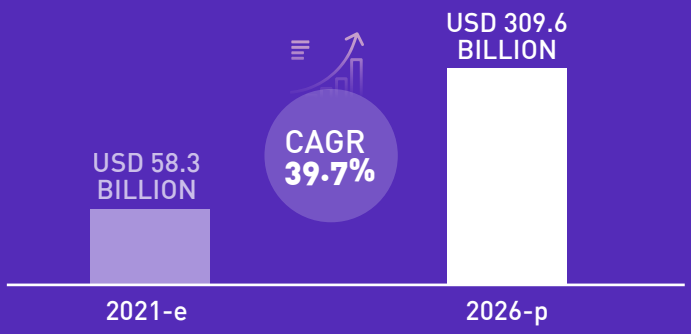
AI is attracting investments from both vendors and investors across the globe. Several countries have come up with various initiatives and national and international strategies for AI. Over the last few years, VC and other innovations that are boosting investments in ML have increased at the rate of USD 5-10 billion per year.

Advancements in AI technology are empowering various industries, making them move faster than ever. AI is already in use, and its effects are expected to be magnified in the next five years, as various end-user industries are expected to transform their core processes and business models to incorporate AI technology. The major applications of AI currently include patient data and risk analysis, inpatient care and hospital management, and healthcare imaging and diagnostics in healthcare; predictive maintenance and machinery inspection, quality control, and material movement in manufacturing; Human Machine Interface (HMI) in automotive; precision farming and drone analytics in agriculture; product recommendation and planning, payment services management, and supply chain management and demand planning in retail; antivirus and identity and access management in security; and virtual assistants.

Technologies such as computer vision, deep learning, and Natural Language Processing (NLP) are witnessing significant growth in the AI market owing to the application of AI in autonomous cars, video games, speech recognition systems, and computer-based vision systems. Big data and AI are becoming integral parts of business organizations driven by the availability of data from sources, such as the Internet of Things (IoT).

The global AI market size is estimated to grow from USD 58.3 billion in 2021 to USD 309.6 billion by 2026; it is expected to grow at a Compound Annual Growth Rate (CAGR) of 39.7% during 2021–2026.

FIGURE 3 GLOBAL ARTIFICIAL INTELLIGENCE MARKET, BY OFFERING, 2021-2026 (USD BILLION)



TOP INDUSTRIES
BY GROWTH RATE

HEALTHCARE — 42% CAGR

- Patient Data and Risk Analysis
- Lifestyle Management and Monitoring
- Precision Medicine
- Inpatient Care and Diagnostics
- Drug Discovery
- Virtual Assistants
- Wearables
- Research

RETAIL — 41.4% CAGR

- Product Recommendation and Planning
- Customer Relationship Management
- Visual Search
- Virtual Assistants
- Price Optimization
- Payment Services Management
- Supply Chain Management and Demand planning

MANUFACTURING — 41.1% CAGR

- Material Movement
- Predictive Maintenance and Machinery Inspection
- Production Planning
- Field Services
- Reclamation
- Quality Control

Note: e-Estimated year; p-Projected year

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

3.1 VENTURE FUNDING IN ARTIFICIAL INTELLIGENCE COMPANIES

Venture funding in AI companies had reached USD 17.9 billion in the third quarter of 2021. A majority of these investments are to companies based in the US and China. North America represents the leading region with USD 10.8 billion worth of investments in AI startups. Asian companies raised USD 4.8 billion in funding rounds, ranking as the second-leading region globally. European AI startups follow with USD 1.6 billion worth of investments in Q3 2021.

FIGURE 4 ARTIFICIAL INTELLIGENCE VENTURE CAPITAL FUNDING (USD BILLION)

Source: CB Insights

04

ARTIFICIAL INTELLIGENCE FUTURE: HOT BETS

AI has been set up as the primary driver of growing technologies, such as robotics, big data, and IoT. Going ahead, AI will be the intelligent core of robotic, automated, and contactless procedures that will shield us from unexpected future outcomes. As indicated by World Intellectual Property Organization – WIPO report, we can see drifts in patenting of AI innovations.

The organizations will continue to push AI boundaries to explore new possibilities, for example, holographic meetings for telecommunication and on-demand, personalized manufacturing. They will gamify vital planning, incorporate simulations in the meeting room, and offer intelligent edge experiences. Similarly, some of the other applications of AI that have surfaced are:

Edge-based AI in video surveillance:

As AI is being adopted more openly across industries, it is likely to be more widely incorporated in video surveillance. With edge-based AI, the burden of transferring and storing large amounts of data to a server will be greatly reduced, thereby increasing efficiency, saving time, and reducing server costs typically required to analyze data.

IoT, drones, and 5G:

With new technologies, such as private Long Term Evolution (LTE), 5G and edge computing, drones or "the flying IoT devices" can be used across various applications, such as recognizing unusual behaviors from a high altitude for crowds; monitoring hazards, such as fires, floods, or erupting volcanoes; and recognizing criminal faces and follow targets.

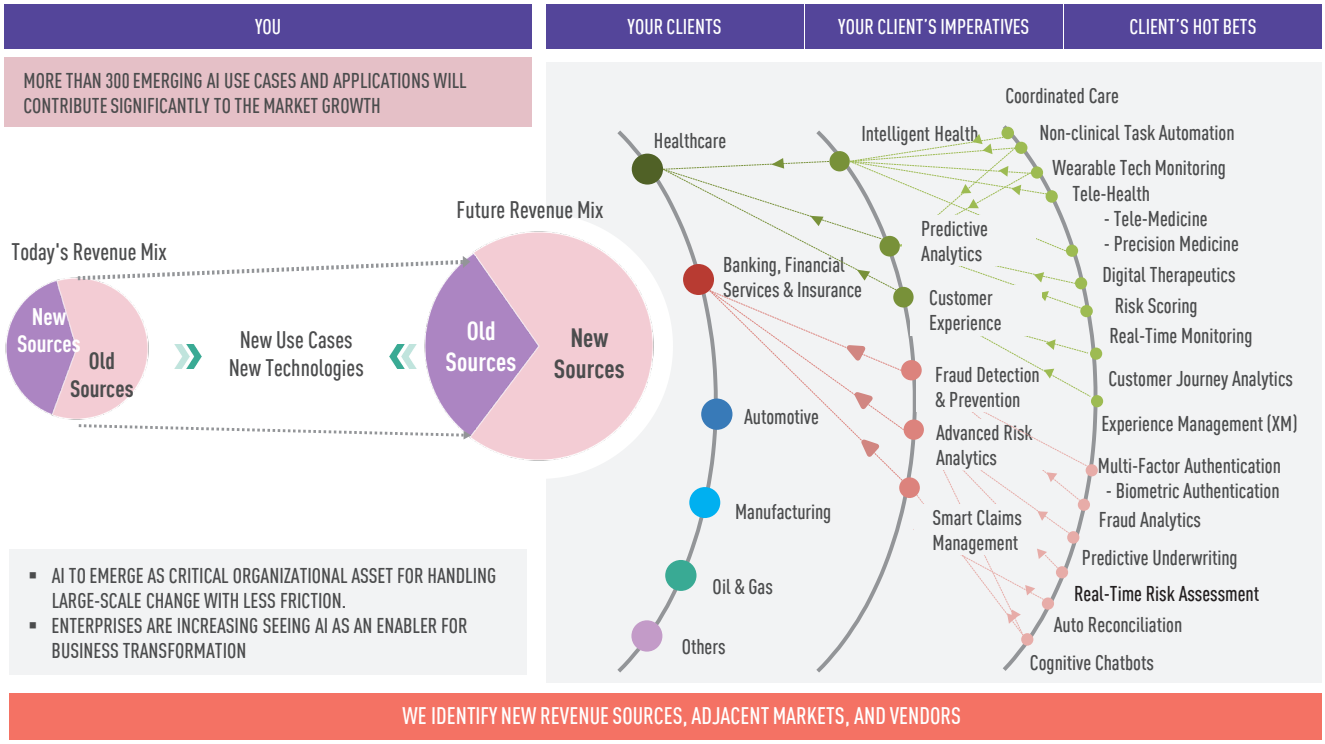
Unmanned systems and robotics:

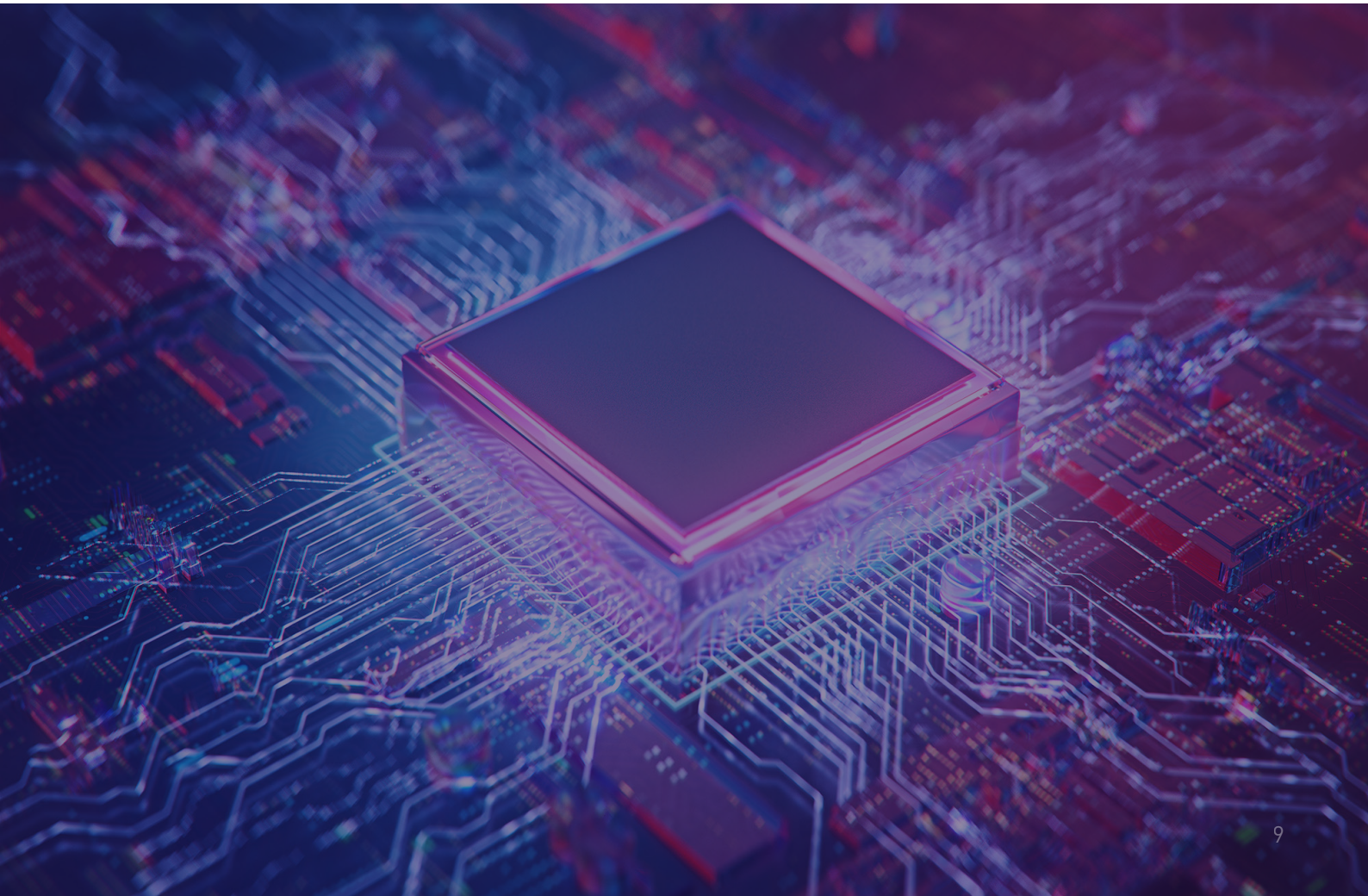
Companies are using unmanned systems, ML design to provide mobility-as-a-service solutions in an urban environment. There are service robots that are solely deployed for the purpose of interacting with people across retail, hospitality, healthcare, warehouse, and other such fulfillment settings. Others are deployed in more rugged settings, such as in space and defense, agricultural applications, and demolition, to automate dangerous or laborious tasks.

Intelligent Process Automation:

As intelligent automation continues to mature, more enterprises would prefer digital workforce management offerings that bring together different capabilities to manage, govern, measure, monitor, scale, and orchestrate work between the human and digital workforce.

FIGURE 5 TRACKING ADJACENT MARKETS IN ARTIFICIAL INTELLIGENCE TO SHOWCASE ITS IMPACT ON CLIENT REVENUES





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WAY FORWARD

Since the outbreak of the pandemic, investments in AI tools and platforms have witnessed a sharp rise, shifting from a "nice-to-have" initiative to a full-blown business imperative. It was extremely evident that digital intelligence and automation were the only solutions that could perform urgent jobs at scale. In both the short-term and the long-term, and across back- and front-office applications, AI has the potential to add value to business workflows, augment employee capabilities, and harness the power of man and machine to improve customer experience.

FIGURE 6 ARTIFICIAL INTELLIGENCE VENDOR LANDSCAPE

Note: Indicative list

Prior to the pandemic, vendors primarily focused on new customer acquisitions, despite it being an expensive and lengthy process. However, the current situation has prompted vendors to change their business models to realize the untapped value of their existing customers. A change in the mindset of vendors is expected as they shift their focus from targeting industry verticals to solving customer problems. These could be additional revenue opportunities for vendors in the market. For example, Schneider Electric moved from selling discrete products to connected energy solutions. The result is that over 50% of Schneider Electric's revenue comes from IoT-enabled digital services.

Most of the current AI systems are domain-specific, i.e., they focus on applications wherein sufficient data and context are available. In the future, it is most likely that generalized AI systems would be deployed that could leverage general concepts and repurpose themselves across different applications. The rise in the use of generalized AI would also open up a new range of opportunities for vendors as well as anticipate the next generation of AI applications. Vendors further need to prepare coherent strategies; for instance, organizations need to look up ways to collaborate and target future opportunities.

MARKETSANDMARKETS™

MarketsandMarkets™ is the world's largest revenue impact company, serving over 7500 customers. 80% of top 2000 companies globally rely on us for identifying new high growth and niche revenue opportunities. In the face of constant technology innovation and market disruption, we help organizations plan andoperationalize their future revenue mix decisions by identifying over 30,000 high growth opportunities ranging from $1B to $500B across 90+ industry trends and markets. Organizations choose MarketsandMarkets™ to stay ahead of the curve and accelerate their revenue decisions and implementations by 6 – 12 months, giving them a unique, first-mover advantage. Our revenue impact methodology provides quantified and actionable insights on converged, granular and connected market ecosystems that result from disruptive technologies and high-growth markets. We provide an extended lens on not only what will impact our client's revenue but also what will impact their clients' revenues, continually uncovering latent opportunities.

We work across all major B2B industries with C-level executives in functions such as Strategy,

Marketing, Sales, R&D, Product, and M&A. MarketsandMarkets™ brings exclusive high-growth markets intelligence generated by over 850 SMEs and analysts along with its proprietary Revenue Impact platform (Knowledge Store).