



The UAE's AI, Robotics and Automation Industries

Opportunities and Investment Potential

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Abstract

The UAE's Artificial Intelligence (AI), robotics, and automation industries are rapidly transforming the nation's economic landscape, driven by robust government support, strategic initiatives, bilateral collaborations, and increasing integration of advanced technologies across various economic sectors and administrative levels. This latest report by the UAE-India CEPA Council paper explores the current state of these cutting edge sectors, examining key government initiatives, market trends, and the transformative impact of AI, robotics, and automation on the UAE's economy. It also discusses the future outlook of these industries and the incentives offered to investors by the UAE Government.

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Introduction

The UAE has been pivotal in shaping the global technology landscape, establishing itself as a major hub for promoting and adopting AI, innovation, and automation. The UAE's proactive initiatives to integrate modern technology like AI across various sectors, including government services, logistics, retail, healthcare, and education, demonstrate its commitment to openly embracing technological advancement, diversifying its economy, and playing an active role in promoting the ethical use of emerging technologies for the welfare of humanity. This paper provides a comprehensive overview of the UAE's AI, robotics, and automation industries, focusing on market trends, government initiatives, key sectors, and investment prospects.



Overview of the AI Industry in the UAE

The UAE government's digital economy strategy aims to adopt AI at all levels of administration and governance. AI will significantly impact the GDP growth of the UAE in the coming years. The role of AI is multifaceted, acting as an innovation catalyst, decision-making assistant, and problem solving tool. In the UAE, government support and public-private partnerships play a crucial role in accelerating AI innovation and adoption. The collaborative efforts of government, businesses, and society are shaping a future where AI contributes positively to economic advancement in the UAE.

Through such support and partnerships, the UAE has also emerged as a global hub for AI-related startup projects, companies, and centres. Renowned AI-related organisations and initiatives, include the Dubai Future Accelerators (DFA), Hub71, AI and Web 3.0 Hub, the Smart and Autonomous Vehicles Industry (SAVI) cluster, the Dubai Centre for Artificial Intelligence's (DCAI) Accelerator Programs, the Applied AI Company (AAICO), startAD, AIQ, Core42, Khazna, M42, Presight, and AI71.



UAE Initiatives and Support for the AI Sector

There are a range of Federal and Emirate-level initiatives that support the growth and development of AI technology in the UAE, which are outlined below.

Federal- and Emirates-level AI Initiatives

UAE Strategy for Artificial Intelligence: In October 2017, the UAE Government launched the 'UAE Strategy for Artificial Intelligence (AI)'. This marks the post-mobile government phase, which will rely on various future services, sectors, and infrastructure projects. The Strategy is the first of its kind in the region and the world. The Strategy aims to:

- Achieve the objectives of UAE Centennial 2071.
- Boost government performance at all levels.
- Use an integrated smart digital system that can overcome challenges and provide quick efficient solutions.
- Ensure the UAE becomes a world leader in the field of AI.
- Create a new vital market with high economic value.

National Program for Artificial Intelligence: The UAE National Program for Artificial Intelligence – BRAIN – is a comprehensive and consolidated compilation of resources, highlighting advances in AI and Robotics, with a special emphasis on the UAE's objective to become a leading participant in the responsible use of AI and its tools globally.

CEO for Artificial Intelligence: The UAE Government has created a new role, the 'Chief Executive Officer for Artificial Intelligence' in a number of ministries and federal entities. This role aims to position the UAE as a global leader in AI applications.

UAE Council for Artificial Intelligence: The UAE Cabinet formed the UAE Council for Artificial Intelligence (AI), overseeing AI integration in government departments and the education sector. It strives to implement the UAE Strategy for Artificial Intelligence to establish the UAE as a world leader in the AI sector by 2031, forming committees and sub-councils to support these efforts.

Artificial Intelligence and Advanced Technology Council (AIATC):

His Highness Sheikh Mohamed bin Zayed Al Nahyan, the President of the UAE, in January 2024, issued a law establishing the Artificial Intelligence and Advanced Technology Council (AIATC). The Council will be responsible for developing and implementing policies and strategies related to research, infrastructure, and investments in artificial intelligence and advanced technology in Abu Dhabi.

Artificial Intelligence (AI) and Coding Licence: This initiative, undertaken in collaboration between the Dubai International Financial Centre (DIFC) and the UAE Artificial Intelligence Office, was launched to encourage investments in AI and to attract AI companies and coders from around the world to relocate to the UAE. Company licence holders are provided enhanced support at DIFC's Innovation Hub, as well as investment incentives, including UAE golden visas for their employees.

AI and Robotics Award for Good: This initiative aims to encourage research and application of innovative solutions in artificial intelligence and robotics to meet existing challenges in three key categories: health, education, and social services. It also aims to promote public awareness about the positive opportunities offered by these applications and turn innovative ideas into reality.



- **G42:** Founded in 2018, G42 is an AI and cloud computing company based in Abu Dhabi. It focuses on big data analytics and AI research, contributing significantly to healthcare, finance, and smart cities. In April 2024, Microsoft announced it would invest USD 1.5 billion in G42. G42 has partnerships with major firms such as OpenAI, Dell, IBM, Microsoft, Nvidia, Oracle, and Cerebras.
- **Advanced Technology Research Council (ATRC):** Established in May 2020, ATRC oversees advanced research and development in Abu Dhabi. It encompasses entities like the Technology Innovation Institute (TII), a leading global scientific research centre and the applied research arm of ATRC. The Institute has ten specialised research centres in Advanced Materials, AI and Digital Science, Autonomous Robotics, Cryptography, Directed Energy, Quantum, Secure Systems, Propulsion and Space, Biotechnology, and Renewable and Sustainable Energy.
- **Mohamed bin Zayed University of Artificial Intelligence (MBZUAI):** Located in Masdar City, MBZUAI is a graduate-level, research-based AI university offering specialised programs in machine learning, computer vision, and natural language processing. It aims to cultivate AI talent and foster groundbreaking research.
- **Digital Dubai:** Is a government body that develops and oversees the implementation of policies and strategies that govern all matters related to Dubai's information technology. AI- focused initiatives include the Ethical AI Toolkit and AI Lab.
- **AI in Banking:** Emirates NBD has collaborated with Amazon Web Services (AWS) to enhance its customer services by leveraging AWS's advanced technologies, including artificial intelligence and data analytics. The bank previously introduced its AI-powered customer service assistant, Eva, in 2016, followed by Olivia, an AI solution for digital banking customers, in 2019.
- **RAK Digital Assets Oasis (RAK DAO) and Humans.ai Partnership:** Ras Al Khaimah - RAK Digital Assets Oasis (RAK DAO) and Humans.ai Partnership: Ras Al Khaimah - RAK Digital Assets Oasis (RAK DAO) and Humans.ai signed an MoU to establish a dedicated free zone to foster AI innovation. With this partnership, AI companies in RAK DAO will gain access to its partner ecosystem, which gives members access to services offered through the ecosystem network, including access to toolkits, Decentralised Applications (Dapps), tech solutions, investment opportunities through grants programs, venture capital partners, banking, and licencing.

Educational Initiatives

AI in Universities: Several public and private universities in the UAE offer different majors in AI at various levels for those who wish to pursue a career in this field . Some of these institutions that provide courses in AI are:

- Mohamed bin Zayed University of Artificial Intelligence (MBZUAI)
- Sorbonne University Abu Dhabi
- Khalifa University
- United Arab Emirates University (UAEU)

The UAE also offers a variety of scholarships for those interested in studying (AI) in the UAE or abroad.

UAE Artificial Intelligence Internship Program: The UAE AI internship program aims to bridge the gap between the skills required in the technology sector, support youth, and improve their potential to enable them to meet future challenges in the rapidly changing technology sector.

Artificial Intelligence Summer Camp: The UAE government launched the UAE AI Summer Camp, collaborating with several leading national and international technology and education companies in the private sector.



Why Invest in the UAE's AI Industry?

The UAE recognised at an early stage the transformative potential of AI to drive its broader economic reform agenda. Over the past few years, the UAE has stood out for its rapid adoption and commercialisation of AI technologies and its proactive pursuit of global and strategic partnerships in this field. The UAE presents a highly attractive investment environment for the AI industry, underpinned by:

1.Strategic Government Initiatives

The UAE has been at the forefront of AI adoption and innovation, launching pioneering programs and policies to position itself as a global leader in AI:

- **UAE Strategy for Artificial Intelligence:** A groundbreaking initiative aimed at achieving UAE Centennial 2071 goals, enhancing government performance, and fostering innovation across sectors.
- **AI-Driven Governance:** The establishment of roles like the Chief Executive Officer for Artificial Intelligence and initiatives such as the UAE Council for Artificial Intelligence reflect the nation's commitment to AI leadership.
- **Artificial Intelligence and Advanced Technology Council (AIATC) and National Program for AI:** These bodies focus on research, infrastructure, and investments to advance AI technologies responsibly.

2.Expansive Market Opportunities

AI technology is transforming key sectors, creating a broad spectrum of investment opportunities.

3.Economic Diversification and High-Tech Focus

AI is integral to the UAE's diversification strategy, driving innovation, boosting investment, and creating new high economic value opportunities.

4.Strategic Location and Infrastructure

The UAE's strategic location offers enhanced connectivity for businesses targeting markets of Europe, Asia, and Africa. Along with robust connectivity , the UAE provides cutting-edge digital infrastructure, which supports the growth of AI start-ups and global enterprises alike.

5.Focus on AI Research and Talent Development

The UAE is nurturing a thriving AI ecosystem through dedicated research, education, and various skill-building initiatives.

6.Regulatory and Innovation-Friendly Environment

The UAE's proactive policies, initiatives such as the RegLab, foster innovation by providing a flexible regulatory environment. RegLab allows the UAE Cabinet to issue temporary licenses for testing and evaluating new technologies, including AI, helping the country advance as a global hub for AI development.

Investing in the UAE's AI industry combines numerous benefits, including high growth potential, government support, access to a skilled workforce, advanced AI infrastructure, and access to global markets. The UAE has created several far-sighted institutions designed to harness the capabilities of new and emerging technologies like AI. In the UAE, organisations such as the Abu Dhabi Global Market (ADGM), Dubai International Financial Centre (DIFC), Mubadala, and the Dubai Future Foundation support tech -based start -ups operating in the country by providing access to cutting-edge infrastructure, capital, and mentorship.



UAE's Comprehensive Support for AI Start-ups

The UAE has emerged as a global hub for AI entrepreneurship and innovation through government-led initiatives, substantial funding, and infrastructure development. Recognising the importance of investment and mentorship in supporting AI-related start-ups at an early stage, the UAE has taken active steps to establish incubators, accelerators, and policies to drive angel investment. Prominent government-recognised incubators include the MBZ Incubation and Entrepreneurship Centre (MIEC), AREA 2071, and Hub71. Meanwhile, accelerators like DIFC, TURN 8, and FasterCapital focus on driving growth for AI-driven businesses, offering financial support and guidance to adapt to market trends.

The Mohammed bin Rashid Innovation Fund is at the forefront of supporting local innovators. Another significant initiative is the Dubai Centre for Artificial Intelligence (DCAI), which fosters AI development, innovation, and governance to align with the UAE's vision for digital transformation. By September 2023, the DCAI had attracted 615 start-ups from 55 countries, with 30 securing spots in its programs. These startups participated in an eight-week accelerator program launched in collaboration with Dubai Future Accelerators, part of the Dubai Future Foundation (DFF). This program helps start-ups develop disruptive AI solutions for the government and media sectors, hosted at AREA 2071.

The private sector has also shown strong support for AI innovation. Polynome Group, a leading UAE-based technology company, announced a USD 100 million fund for AI start-ups, focusing on technology, AI software applications, and robotics. Starting in the first quarter of 2025, this initiative aims to expand the adoption of AI and digital technologies. The announcement was made during the AI Retreat organised by the Dubai Centre for AI Applications in collaboration with the National Programme for Artificial Intelligence.

The UAE has implemented several structural and strategic measures to foster innovation and technology development. The Federal Digital Economy Council works alongside governance bodies and technology parks in the UAE, such as Abu Dhabi's Hub71, Dubai Digital Park and Internet City, and the Sharjah Research Technology and Innovation Park. The National Strategy for AI 2031 underscores talent attraction, digital transformation, and creating a supportive start-up ecosystem. Between 2021 and 2023, the number of AI workers in the UAE quadrupled to 120,000. Furthermore, the IBM Global AI Adoption Index 2023 found that 65 percent of IT professionals in the UAE had expedited AI rollout over the past 24 months, with 42 percent of companies deploying AI in their operations.



The Dubai AI Campus, part of the Dubai International Financial Centre (DIFC), offers resources such as free cloud credit, supercomputing power, and GPUs-as-a-service, which are integral to AI tasks. Spread over 10,000 square feet within DIFC’s Innovation One premises, the campus aims to attract over USD 300 million in capital and create more than 3,000 jobs by 2028. DIFC is a free zone that allows 100 percent foreign ownership of companies, with its financial regulator and a legal framework based on English common law.

In 2021, Dubai launched the AED 1 billion (USD 272.3 million) Dubai Future District Fund to support seed- to growth-stage start-ups, particularly in the technology sector, and to encourage them to list on Dubai’s stock market. The Fund aims to establish 1,000 tech companies within five years and increase start-up investments from AED 1.5 billion (USD 408.45 million) to AED 4 billion (USD 1.0892 billion). This initiative complements the UAE’s broader strategy to position itself as a global leader in AI and digital transformation, fostering a supportive start-up ecosystem and attracting international venture capital.



Abu Dhabi has launched MGX, a new technology investment company focused on accelerating the development of AI and advanced technologies. MGX concentrates on three core areas: AI infrastructure (data centres and connectivity), semiconductors, and core technologies such as AI models, software, data, life sciences, and robotics. MGX has partnered with BlackRock, Microsoft, and Global Infrastructure Partners to establish an AI infrastructure investment partnership , mobilising up to USD 100 billion to enhance the future of AI.

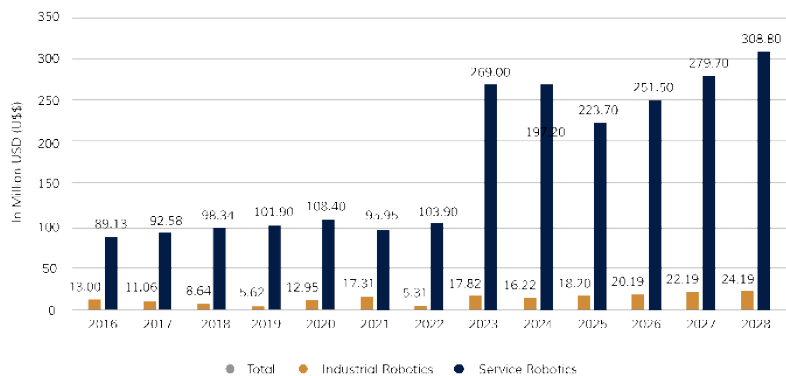
Overview of the UAE Robotics Industry

The UAE's robotics and automation market is projected to reach a size of USD 213.50 million by 2024, with service robotics leading the market at a projected value of USD 197.20 million. The industry is expected to grow at a compound annual growth rate (CAGR) of 11.75 percent from 2024 to 2028, reaching a market value of USD 333.00 million by 2028. This growth reflects the increasing demand for robotics solutions across various sectors in the UAE.

By 2028, service robotics revenue is projected to reach approximately USD 308.80 million, reflecting a steady increase from USD 197.20 million in 2024.

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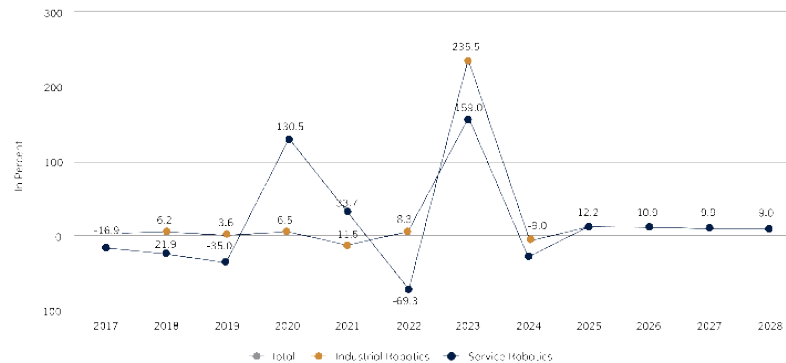
REVENUE BY SEGMENT



Notes: Data was converted from local currencies using average exchange rates of the respective year.
 Most recent update: Mar 2024
 Source: Statista Market Insights

This chart shows the percentage change in revenue year-over-year for industrial and service robotics.

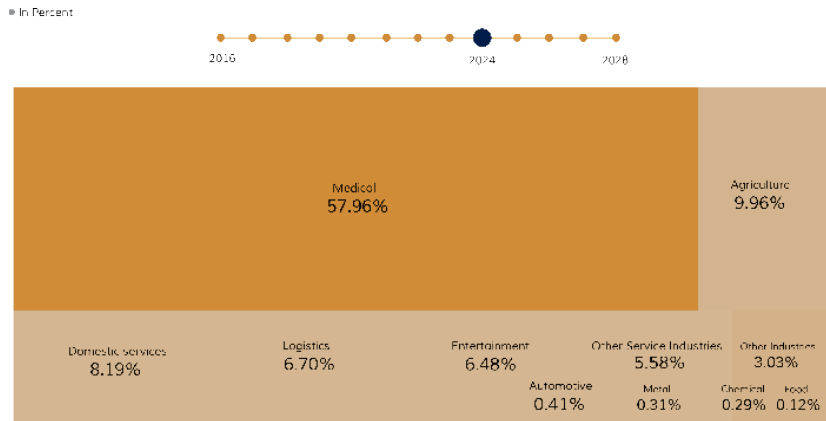
REVENUE CHANGE BY SEGMENT



Notes: Data was converted from local currencies using average exchange rates of the respective year.
 Most recent update: Mar 2024
 Source: Statista Market Insights

The medical sector overwhelmingly dominates total revenue share at 57.96 percent, followed by agriculture at 9.96 percent. This indicates a significant focus on medical robotics applications, driven by innovations in surgical robotics and automation in healthcare.

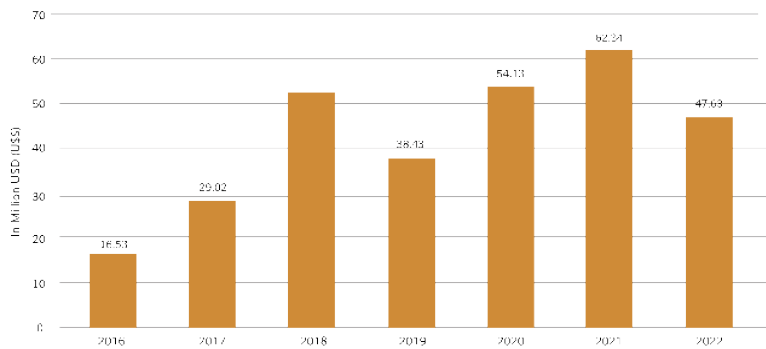
REVENUE INDUSTRY SHARE



Most recent update: Mar 2024
Source: Statista Market Insights

Investment in robotics has shown a consistent upward trend, peaking in 2021 at USD 62.34 million.

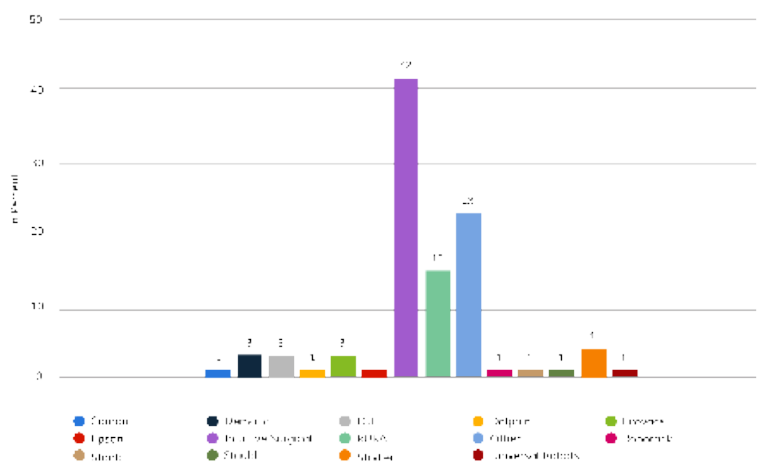
ROBOTICS INVESTMENT



Most recent update: Mar 2024
Source: Statista Market Insights

The intuitive surgical sub-sector holds the largest market share at 42 percent, emphasizing its dominance in the medical robotics sector. Significant players in the UAE robotics market, include KUKA and Stryker, with smaller shares distributed among various other companies.

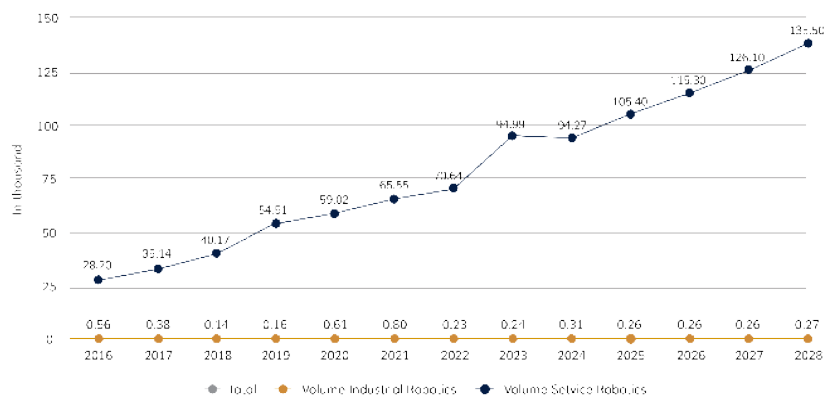
BRAND SHARES (BETA)



Most recent update: Mar 2024
Source: Statista Market Insights

By 2028, the total number of robots operating in the UAE is expected to reach 138,500, strongly emphasising the increased usage of service robotics.

TOTAL NUMBER OF ROBOTS



Most recent update: Mar 2024
Source: Statista Market Insights

The UAE's robotics and automation sector is expanding, driven by strong government support, substantial investments, technological advancements, and increasing adoption across various sectors. The increasing use of robots and its increasing integration with AI in various sectors will shape the industry's future in the UAE.

UAE Initiatives and Support for the Robotics Sector

A range of Federal- and Emirate-level initiatives, alongside academic-based centres and innovation parks, support the growth of the robotics sector in the UAE. The following section outlines a range of these initiatives.

Federal-Level and Emirate-Level Initiatives

The National Innovation Strategy

- H.H. Sheikh Mohammed bin Rashid Al Maktoum, Prime Minister of the UAE, launched the National Innovation Strategy to transform the UAE into one of the most innovative nations in the world. The Strategy targets stimulating innovation in seven sectors. They are renewable energy, transport, education, health, technology, water, and space. In 2018, the Strategy was subsequently updated to entail a new phase based on enabling people to shift from focusing on vital sectors to the goals and outcomes in seven areas: exploration, future skills, quality of health, living, and life, green power, transport, and harnessing technology to serve humankind.

The Fourth Industrial Revolution Strategy

- The UAE's Fourth Industrial Revolution Strategy aims to strengthen the UAE's position as a global hub for the Fourth Industrial Revolution and to increase its contribution to the national economy through advancing innovation and future technologies. It also aims to position the UAE as a global model that adopts leading-edge technologies to serve society and achieve happiness and sustainability.

AI Strategy 2031

- The AI Strategy 2031 aims to position the UAE as a global leader in artificial intelligence by 2031 and develop an integrated system that employs artificial intelligence in vital areas. It also involves the integration of AI with the robotics and automation industry.

Mohammed Bin Rashid Centre for Government Innovation

- This Centre was launched in September 2014 to encourage and motivate innovation in the public sector by making available tools essential to develop organisational structures and procedures. The Centre also coordinates innovation labs in government entities to build capacity for innovation across the national workforce.

Mohammed Bin Zayed International Robotics Challenge (MBZIRC)

- MBZIRC is an international robotics competition held every two years, with a total prize and team sponsorship of USD 5 million. MBZIRC has activated innovation globally and has bridged the gap between robotics lab potential and real-world application.

The Dubai Robotics and Automation (R&A) Program

- The Dubai R&A Program sets out a clear vision to significantly enhance the role of robotics in the Emirate of Dubai's economy. This initiative aims to increase the robotics sector's contribution to Dubai's GDP to nine percent by 2032. A key part of this program is the provision of 200,000 robots over the next decade, which will be deployed across various sectors such as services, logistics, and industry to boost efficiency, productivity, and competitiveness.

The Dubai Future Accelerators (DFA)

- The DFA initiative fosters collaboration between startups, private enterprises, and government entities to address future challenges through innovative technologies. By leveraging the agility of startups and the resources of established organisations, DFA aims to make Dubai a global hub for entrepreneurship and a testbed for emerging technologies.

The Dubai Future Labs

- The Dubai Future Labs is a cutting-edge applied research lab dedicated to advancing robotics and AI. The lab focuses on developing robotic systems and autonomous solutions that address specific needs in key economic sectors, driving innovation in robotics and AI.

Advanced Technology Research Council (ATRC) of Abu Dhabi

- The Advanced Technology Research Council (ATRC) is an Abu Dhabi government entity. The Technology Innovation Institute (TII) is a key initiative under the ATRC of Abu Dhabi. TII operates as the applied research arm of the ATRC, with a mission to drive transformative technological advancements in areas such as artificial intelligence, autonomous robotics, quantum computing, cryptography, and advanced materials.

Educational Initiatives

The Khalifa University Centre for Robotics and Autonomous Systems (KUCARS)

- KUCARS conducts pioneering research in robotics, providing a multidisciplinary environment with around 50 researchers and state-of-the-art laboratory facilities. It plays a crucial role in bridging the gap between academic research and industry needs.

The Industry 4.0 District

- A major undertaking by UAE University, the Industry 4.0 District is part of an ambitious plan to establish the institution as a “University of the Future”. The District will start by hosting five major laboratories: a Robotics and Artificial Laboratory, a Mini-Factory, a Fabrication Laboratory, an App Factory, and a Materials Library.

Advanced Technology and Artificial Intelligence Centre at the American University of Ras Al Khaimah

- The Centre is dedicated to advancing research and development in AI and robotics, contributing to the national agenda for technological innovation.

Mohamed Bin Zayed University of Artificial Intelligence (MBZUAI)

- In August 2023, MBZUAI launched two new departments focused on robotics and computer science, underscoring the UAE’s commitment to advancing education and research in these critical fields.

Key Sectors for Robotics in the UAE

Robotics and automation are driving significant advancements across multiple key sectors in the UAE, including:

Healthcare

Robotics are revolutionising surgical procedures, enhancing precision, and improving overall patient care.

Manufacturing

Robotics is fueling productivity, innovation, and quality control in manufacturing processes, leading to more efficient production lines.

Construction

Automation is boosting efficiency and safety on construction sites, reducing manual labor and minimising risks.

Logistics

Automated systems are optimising supply chain management, ensuring faster, more accurate, and cost-effective operations.

Security

Robotics are enhancing public safety, enabling more effective law enforcement, surveillance, and emergency response.

Transportation

The UAE is on track to achieve its goal of making 25 percent of vehicles autonomous by 2030, transforming the future of mobility.

Agriculture

Integrating robotics is transforming farming practices, increasing efficiency and sustainability in agriculture.

Education

Robotics are being integrated into educational curricula, equipping the next generation with the skills needed for a tech-driven future.

Smart Cities

Robotics are playing a crucial role in the infrastructure of smart cities, enhancing everything from traffic management to public safety.

Why Invest in the UAE's Robotics and Automation Industry?

The UAE offers a compelling investment environment for robotics and automation, characterised by:

- Strategic Government Support

Robust government initiatives and policies support the growth of the robotics industry.

- Economic Diversification

Robotics and automation are key to the UAE's economic diversification efforts.

- Strategic Location

The UAE's location and connectivity make it a hub for global business.

- Growing Market Potential

The market is expected to experience substantial growth in the coming years.

- Advanced Infrastructure

The UAE boasts world-class infrastructure essential for developing high-tech industries.

These factors, coupled with a thriving innovation ecosystem and skilled workforce, make the UAE an attractive destination for investors in the robotics and automation sector.



Incentives for Investors

The UAE Government offers numerous incentives to attract investment in robotics and automation:

- 100 percent Company Ownership
- Over 40 Free Zones for Company Incorporation
- Freedom to Invest in All Economic Activities
- Various Legal Ownership Structures Available
- No Requirement for National Agents with Tax
- Control Over Shareholding Company Boards
- No Minimum Capital Requirement Exemptions
- No Income Tax and Full Profit Transfer Allowed
- Golden Visa for Investors
- Ease of Commissioning Professionals
- Low Customs Tariffs
- Competitive Incentives for Industrial and Technology Investments in Strategic Sectors
- Strong Support Network for Start-ups with an Active Investor Ecosystem (Venture Capital, Incubators, Accelerators)
- Various Training Programs for Robotics

These incentives, a supportive regulatory environment, and access to a growing market make the UAE a prime destination for investment in AI, robotics, and automation.

Conclusion

The UAE's AI, robotics, and automation industries present a significant opportunity for investors. With strong government support, a growing market, and a focus on innovation, the UAE is well-positioned to become a global leader in these fields. Investors who capitalise on this trend will contribute to the UAE's economic growth and benefit from the nation's commitment to technological advancement and economic diversification. It is an opportunity to be part of a rapidly expanding sector in a forward-thinking nation strategically positioned to lead the AI revolution as well as promote and embrace robotics and automation.





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