Its global market will reach 740 billion dollars by 2030

Will Arab countries succeed in investing in artificial intelligence?

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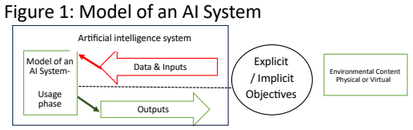
Artificial Intelligence (AI) refers to computing technologies inspired by the ways humans use their neural systems to think and make decisions, although they typically operate in quite different ways. AI is a machine-based system that, through a set of explicit or implicit objectives determined by humans, can infer outputs from inputs, such as predictions, recommendations, or decisions that can affect real or virtual environments. Various AI systems are designed to operate at different levels of autonomy and adaptability. The following figure presents a simplified model of how AI operates.

Figure 1: Model of an AI System



Source: https://oecd.ai/en/wonk/aisystem-definition-update

Below is a simplified explanation of the AI model illustrated.

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Objectives

The objectives of an AI system can be explicit, for example, when they are directly programmed into the system by a human developer, or implicit, for example, through a set of rules specified by humans, allowing the system to learn new objectives. Examples of systems with implicit objectives include self-driving car systems programmed to comply with traffic rules (but not explicitly aware of their implicit goal of saving lives) or a large language model like ChatGPT, where the system's objectives are not explicitly programmed but are partly acquired through the process of imitation learning from human-created texts and reinforcement learning from human feedback.

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Inputs

An AI system deduces how to generate outputs when it receives inputs from the environment and processes these inputs through one or more underlying algorithms necessary for this purpose.

Outputs

Outputs refer to any content generated, which technically consists of a subset of predictions, recommendations, or decisions such as text, video, or images. The environmental content of AI includes machine learning, robotics, and artificial neural networks.

Machine Learning: Programs learn from existing data and apply this knowledge to new data or use it to make predictions about the data.

Robotics: Focuses on the development and training of robots, ensuring that the robots' ability to interact with individuals is precise, follows general rules, and is predictable.

Artificial Neural Networks: Built to mimic the workings of the human brain, with natural language processing (NLP) dealing with the interpretation and processing of data by computers.

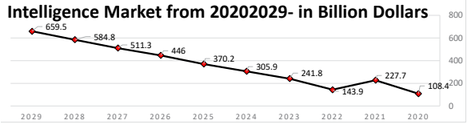
Adaptability

Some AI systems can continue to evolve after being designed and deployed (e.g., recommendation systems that adapt to individual preferences or voice recognition systems that adapt to a user's voice).

Evolution of the AI Market Size

The AI market is experiencing significant growth. According to Statista, the AI market size is expected to increase from USD 241.8 billion in 2023 to nearly USD 740 billion by 2030, with a compound annual growth rate (CAGR) of 17.3%. The following figure illustrates the growth of the market size.

Figure 2: Development of the Total Size of the Artificial Intelligence Market from 20202029- in Billion Dollars



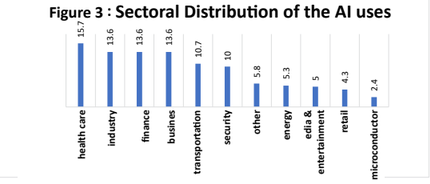
Artificial Intelligence - Global | Statista Market Forecast
Source: Statista Market Insight

The previous figure illustrates the current and expected growth of the AI market size.

Sectoral Distribution of the AI Market

The AI market covers a wide range of industries, including healthcare, education, finance, media, and marketing. The following figure shows the market distribution by sector.

Figure 3 : Sectoral Distribution of the AI uses



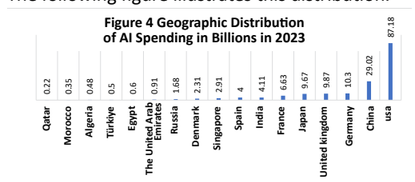
Source: Statista Market Insight

The figure shows that the healthcare sector receives the largest share of the AI market, followed by finance, industry, business and legal services, and transportation, collectively accounting for approximately 70% of the market. The United States and China are among the leading countries in terms of AI spending across various fields. However,

Artificial intelligence will lead to new challenges and transformations in the labor market. A number of routine, low-skilled, and low-wage jobs can be easily performed by robots or AI applications. AI, in particular, will take over 30% of work hours. However, at the same time, artificial intelligence will create new job opportunities for countries and the world.

there is a significant gap between the spending levels in the United States and China, reflecting the United States' dominance in this market.

The following figure illustrates this distribution.



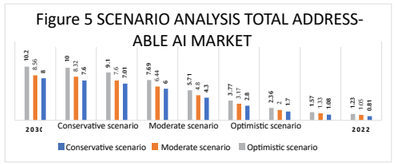
Source: Statista Market Insight

1. The Role of Artificial Intelligence in Enhancing National Competitiveness

The use of artificial intelligence (AI) is expected to lead to gains in efficiency and productivity, creating new job opportunities and thus achieving greater prosperity. According to a study by PWC, AI increases productivity and the potential GDP of the global economy. Therefore, there is an urgent need for strategic investment in various types of AI technologies to achieve this goal. Companies are seeking to "augment" workforce productivity using AI technologies. The study indicated that 45% of total economic gains by 2030 will come from product enhancements and stimulating consumer demand. This is because AI enhances product diversity, increases customization, attractiveness, and affordability over time.

Most of the economic gains from AI are concentrated in China, where AI is expected to account for approximately 26% of GDP by 2030, and in North America at 14.5%, which together equate to a total of $10.7 trillion, representing nearly 70% of the global economic impact. The United Arab Emirates follows with around 13%, and Saudi Arabia with approximately 12%

The following figure illustrates the scenarios of AI's contribution to GDP.



Source: Statista Market Insight

The figure, regardless of the anticipated scenario, indicates that AI plays a role in enhancing the competitiveness of nations. This places various options before governments and policymakers to maximize benefits

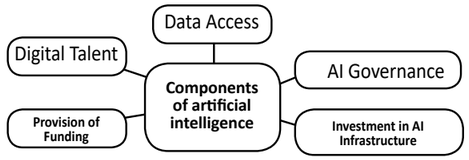
Most of the economic gains from artificial intelligence will be concentrated in China, where AI will account for about 26% of GDP in 2030, and in North America at 14.5%, totaling $10.7 trillion, which represents nearly 70% of the global economic impact. The United Arab Emirates will follow with around 13%, and Saudi Arabia with about 12%.

and increase competitiveness, such as encouraging types of AI that complement human work rather than mimic or replace it, promoting the development of AI that enables companies of all sizes to benefit from AI, and identifying the appropriate open-source ecosystem required for this.

Components of Artificial Intelligence

There are essential components of AI that countries must follow to excel in the use of AI and enhance their competitiveness, as illustrated in the following figure.

Figure 6: Components of Artificial Intelligence



Source: World Digital Competitiveness Ranking 202

Data Access and Governance:

Access to and sharing of data are essential for accelerating the adoption of AI. However, data access presents a dilemma due to the complexities involved in managing data and its flow within the country and across borders in secure ways that facilitate access to on-site data while respecting privacy. In a data-driven digital economy, the concept of sovereignty has widely changed; it was once associated with national territories and physical borders. But in the data-driven digital economy, borders have become open and blurred, necessitating a governing framework at both local and international levels to protect data.

Digital Talent

AI will lead to new challenges and transformations in the labor market. Several routine, low-skill, and low-wage jobs can be easily performed by robots or AI applications. AI is expected to take over 30% of working hours. However, AI will also create new job opportunities for countries and the world. Thus, there is an urgent need to provide the necessary digital skills. There is ample evidence that national competitiveness results from investment in education and the provision of skills required by the local and international labor markets.

AI Governance

Replacing humans with algorithms in AI requires regulating and controlling the extent to which personal data, personal images, voice, and output are used to prevent misuse. This regulation has started to take shape at the national and regional levels, but it needs to continue in the coming years to unify practices and rules internationally.

Investment in AI Infrastructure

The development and use of AI require access to AI technologies and infrastructure, which assumes the availability of high-speed, affordable broadband networks and services, high computing power, and data storage capabilities, as well as support for data generation. Many countries are establishing high-quality connections and deploying 5G technology and beyond.

Provision of Funding

Funding is a fundamental pillar for accelerating AI and maximizing its benefits. This can be achieved by increasing spending on research and development by the state and the private sector, creating more financial incentives, and facilitating the necessary credit conditions for innovative AI companies and small and medium enterprises, enabling them to contribute to and benefit from the development and use of AI.

Readiness of Arab Governments for AI

The readiness of Arab governments to implement and govern AI and their focus on delivering it in public services depends on several pillars. We will base our analysis on the Government AI Readiness Index, which includes 193 countries in 2023, up from 183 in the 2022 edition. The index encompasses 39 indicators across several key pillars:

Government: The government should have a strategic vision for developing and managing AI, supported by appropriate governance, regulation, and attention to ethical risks.

Technology Sector: The government relies on a robust supply of AI tools from the technology sector, which should be mature and highly innovative enough to provide the government with modern tools.

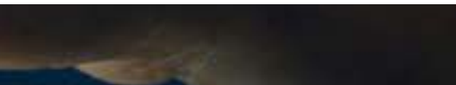
Capacity: This pillar is supported by an investment environment that promotes entrepreneurship, good research and development spending, and high levels of skilled human capital.

Data and Infrastructure: AI tools require a large amount of high-quality data, and their potential cannot be realized without the necessary infrastructure.

The following figure illustrates the readiness of Arab governments to use AI tools.

The development and use of artificial intelligence require access to AI technologies and its infrastructure. This entails the availability of high-speed, affordable broadband networks and services, high computational capabilities, and data storage, as well as support for data generation. Many countries are establishing high-quality connections and deploying 5G technology.

Figure 7: Readiness of Arab Governments for AI



Source: Oxford Insights Government AI Readiness2023

The figure shows a clear disparity among the countries in the region, with an average score gap of 52.3 between the best-performing country, the United Arab Emirates, and the lowest-performing country. There is also a gap between the Gulf countries and the rest of the countries. In 2023, the region saw developments in AI governance and ethical principles. It is noteworthy that Egypt is a well-performing country, ranking among the top ten in the region by introducing the Egyptian Charter for AI Responsibility. This initiative combines insights and actionable measures to facilitate the responsible development, deployment, management, and use of AI systems in alignment with guidelines set by international organizations (OECD, UNESCO, WHO, IEEE, EU).

Similarly, Saudi Arabia published AI ethics principles aimed at mitigating the potential negative impacts of AI systems and protecting and enhancing their benefits. Bahrain released its sixth national telecommunications plan, outlining the government's strategic vision and public policy for the telecommunications sector. Additionally, three countries—Iraq, Tunisia, and Bahrain—announced initiatives to develop AI strategies in the region, which is a crucial step in enhancing these countries' positions in the AI governmental landscape. The region also witnessed a surge in data center investments recently, with Huawei opening a cloud region in Riyadh and Oman partnering with SAP to provide a private cloud data center. Furthermore, Egypt is set to host a hyperscale data center with significant investments totaling $250 million.

This development has led well-performing countries in the region to join Western Europe, Eastern Europe, East Asia, and North America as regions where more than half of the countries have introduced AI strategies.