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MARMORE
MENA INTELLIGENCE

WHITE PAPER

Artificial Intelligence (AI):

The Implications for Jobs in the GCC

About Marmore

Marmore MENA Intelligence Ltd (Marmore), a fully owned research subsidiary of Kuwait Financial Centre "Markaz" K.P.S.C. an Investment Bank and Asset Management Company with more than 40 years of experience

Marmore MENA Intelligence Ltd (Marmore) is a leading research company focussed on Middle East region and is fully owned research subsidiary of Kuwait Financial Centre "Markaz" K.P.S.C. Markaz is one of the largest asset management and investment banking company in the Middle East.

Marmore publishes report and conduct research on demand to cater to the growing research and information needs of organizations in the MENA region

With consistent record of quality, in-depth research offerings, skilled team with deep understanding of MENA markets and access to wide ranging databases, Marmore delivers client specific research reports highlighting key answers

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info@e-marmore.com
Tel: 00965 22248280; Fax: 00965 22495741
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Introduction

AI is a broad concept encompassing various applications and technology models.

In the recent past, AI technologies have surged powerfully on the back of increases in computing power, vast and growing datasets and multiple improvements in underlying algorithms[1]. While AI is often imaged as a single technology, it actually covers a collection of advanced technologies, which together and individually enable machines (computers, robots, etc.) to work "intelligently,"[2]. In other words, to perceive their environment and accordingly adapt themselves to achieve a certain outcome or find a certain solution.

The graphic below from Moody's Investors Service illustrates how the AI concept encompasses many different technologies, along with the breadth of applications that it covers.

Chart 1: Overview of AI
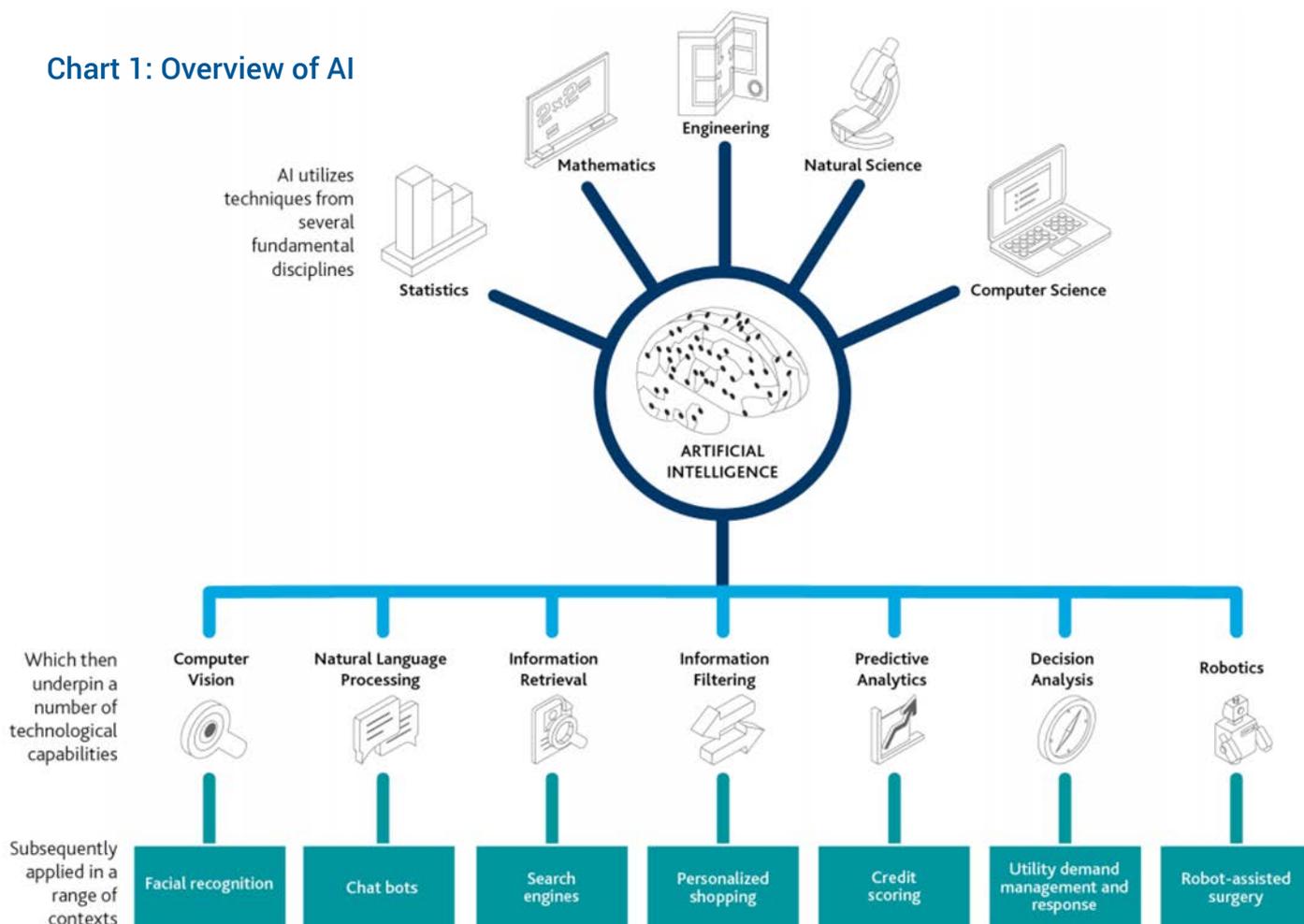
Source: Moody's Investors Service

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[1] Moody's Investors Service   [2] Ibid.

For governments and civil society, AI matters now because it can lead to tectonic economic and social changes. It holds the promise of increasing productivity in current industries, while creating wholly new sectors. However, there are also growing concerns that many jobs can run the risk of becoming redundant on the back of automation and AI-led technological advances.

The Rise of Practical AI

Now, AI has reached a stage of evolutionary maturity after having been in development for many decades. According to a 2017 estimate by the global market intelligence firm IDC, global spending on cognitive and AI solutions will touch USD 46bn by 2020. PwC has forecast that global GDP will be 14% higher in 2030 due to AI. There are already a number of industries that AI can be put practically into use.

The possible uses of AI capabilities is enormously vast, causing many companies to invest heavily in AI technologies in recent years[3]. For e.g., Google is building self-driving vehicles and has acquired over 10 robotics companies. Meanwhile, Facebook has opened a research facility focused only on AI research. It is evident that the accelerating convergence of robotics, automation and AI will produce considerable new market opportunities and streams of transformative applications. By adapting appropriate steps now, the GCC could leverage the trend to stand at the front of these developments. Such a policy posture can help reap substantial economic and social benefits from current and emerging markets, even as competition to harvest AI-led growth grows among different countries. However, the question of whether AI will prove to be a net provider of jobs remains.

[3] *European Parliament*

Table1: Sample Uses and Potential Uses of AI by Sector

Industry	High - Potential Use Cases
Healthcare	* Supporting diagnosis by detecting variations in patient data * Early identification of potential pandemics * Imaging diagnostics
Automotive	* Autonomous fleets for ride sharing * Semi-autonomous features such as driver assist * Engine monitoring and predictive, autonomous maintenance
Financial services	* Personalized financial planning * Fraud detection and anti-money laundering * Automation of customer operations
Transportation and Logistics	* Autonomous trucking and delivery * Traffic control and reduced congestion * Enhanced security
Technology, Media, and Telecommunications	* Media archiving, search, and recommendations * Customized content creation * Personalized marketing and advertising
Retail and Consumer	* Personalized design and production * Anticipating customer demand * Inventory and delivery management
Energy	* Smart metering * More efficient grid operation and storage * Predictive infrastructure maintenance
Manufacturing	* Enhanced monitoring and auto-correction of processes * Supply chain and production optimization * On-demand production

Source: PwC Global AI Impact Index, 2017 (Verbatim)

AI and the GCC

The United Arab Emirates (UAE) appointed a Minister of State for Artificial Intelligence in October 2017, marking the first such development in the world[4]. The tasks of the Minister include enhancing the government's performance by investing in the latest technologies and tools of AI and applying them in multiple sectors. In Saudi Arabia, the planned new megacity (NEOM project) that was announced in October 2017 aims to develop nine economic sectors considered critical for the country's future. One of the axes is the 'The Future of Technological and Digital Sciences', which includes AI, virtual reality (VR) and augmented reality (AR) technologies, data centres, the Internet of Things (IoT) and e-commerce[5].

In February 2018, in line with the Saudi Vision 2030 and for achieving the National Transformation Program 2020, the Saudi Ministry of Communications and Information Technology (MCIT) signed a memorandum of understanding with the Prince Mohammed bin Salman bin Abdulaziz Foundation "MiSK" Foundation[6]. The strategic partnership consists of four major axes that includes the provision of training programs in technical knowledge. Notably, the first axis "[…] includes application development, programming

basics, business analysis, Internet of Things, network development, Artificial Intelligence, cybersecurity, product management, user experience design, cloud computing and professional skills, so as to ensure that trainees are ready to join the labor market upon the completion of the programs."[7]

Thus, in the GCC, the UAE and Saudi Arabia appear to be at the forefront to leverage the phenomenon of AI. According to a 2018 PwC estimate, AI's contribution to Saudi Arabia's economy will be USD 135.2bn in 2030 or 12.4% of GDP. For the UAE, PwC estimates that it will be USD 96.0bn in 2030 or 13.6% of GDP. For the rest of the GCC combined, PwC has estimated that AI's contribution will be USD 45.9bn in 2030 or 8.2% of GDP. The potential for AI incorporation in the Middle East will vary by industry, with determinants like digital infrastructure and availability of skilled labour influencing the vector of the adoption rate.

Countries in the GCC may closely study UAE's AI model in the future in terms of initiatives like the Smart Dubai strategy and the Dubai Autonomous Transportation Strategy. Both of them extensive inclusion of AI capabilities by 2030.
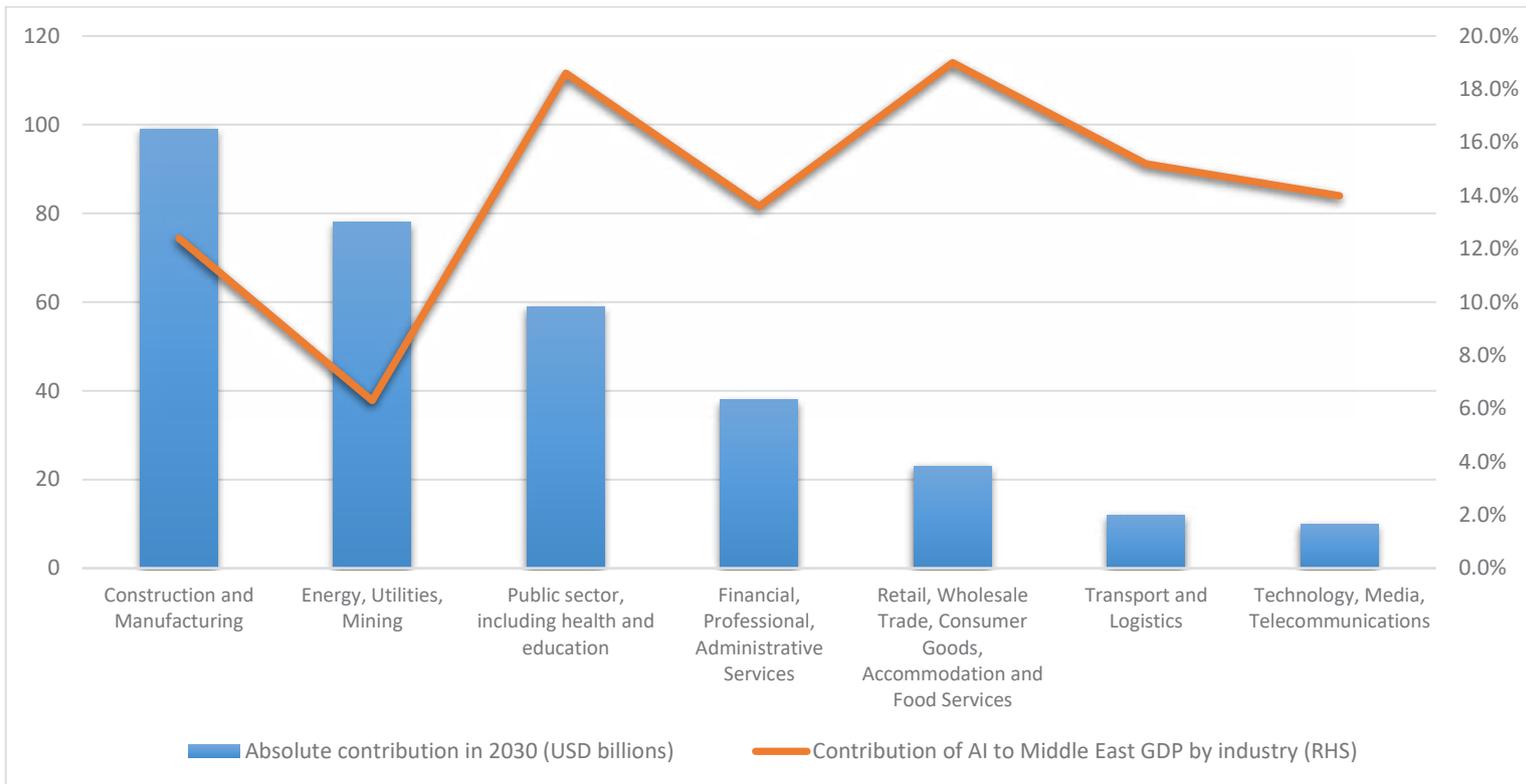
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[4] *UAE's Ministry of Cabinet Affairs & The Future*

[5] *Saudi Press Agency*

[6] *Saudi Ministry of Communications and Information Technology*

[7] *Ibid.*

Figure: Contribution of AI to industry in 2030 in the Middle East Region

Source: PwC

The Question of Jobs

Many varieties of activities in multiple sectors have the technical feasibility or potential to be automated. However, the potential varies significantly across the nature of activities. According to a research brief by McKinsey&Company, five factors will largely influence the type of jobs that could be replaced by AI.

They are:

- Technical feasibility or the ability of current AI tools to perform the work
- Costs to automate
- The relative scarcity, skills, and cost of workers who might otherwise do the activity.
- Benefits of automation beyond labor-cost substitution.
- Regulatory and social-acceptance considerations.

Based on the above factors, the most susceptible varieties of jobs to be replaced by AI comprise predictable physical work, data collection and data processing activities, retail services, etc. However, roles not currently ready for AI automation are unpredictable physical work or human stakeholder interactions. The least susceptible job types are those that call for applying expertise to decision making, strategic planning, and creative tasks.

Thus, in the context of the GCC, it is not a straightforward question of jobs being replaced by AI or not. Rather, jobs that are fully predictable and adopt a well-defined process are most vulnerable to replacement. However, jobs that rely on critical judgment in an unpredictable environment or

ecosystem while managing people could find advantages in terms of AI augmentations. AI systems have still not demonstrated reliable competencies in the areas of active imagination, spontaneous creativity, and relevant innovative thinking. Thus, jobs that contain them are not likely to be replaced.

Also, if AI-supplemented productivities reduce jobs in one area, it means that costs will go down. These cost savings can be channelled through higher wages or lower prices of goods or services for the population as a whole. The increased flow of money and the opportunities to spend them will mean that there will be avenues to create more jobs through new innovative sectors, despite the possibility of automation.

Conclusions

As work enmeshes with technology, there will, undoubtedly, be winners and losers in the process[8]. It is a case of technological growth unleashing changes in business and operating models that make the continuous adaptation of skills absolutely essential for successful participation in the knowledge and labour market. Thus, it is a warning that individuals, entities and economies that are not willing to retool themselves face the risk of being left behind.

Rather than viewing AI augmentation as a job destroyer, it should be viewed as a way of

reducing cost and boosting demand across sectors. That is, automation and AI reallocates jobs, and does not totally displace them. Timely skilling interventions are necessary to ensure that employees switch from routine and structured jobs to non-routine skilled and creative jobs to stay clear of automation threats. The transition for the GCC is likely to be challenging as automation upends labor markets and demands retooled skill sets. However, educational and private and public sector reforms can enable strong net job creation that is driven by sustainable diversification and capacity development.

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[8] *UK Commission for Employment and Skills*

About
marmore

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To be the first choice for obtaining strategic intelligence on the MENA region.

Our mission
Serving businesses and institutions with reliable information and intelligence about MENA, needed to catalyse growth, understand the larger environment and facilitate decision-making.

Our aim
Advocate intellectual research on MENA economies, businesses and financial markets and provide customized, actionable solutions.

Our foundation
- A subsidiary of Markaz: Investment bank and asset management firm with 40+ years of history
- Markaz research activities commenced in 2006
- Marmore established in 2010 to intensify the research activities
- Publishes research reports and provides consulting services

Consulting
services

Marmore provides customized consulting services based on specific requirements of our clients. Marmore's bespoke consulting services marries the challenges of cost, time, scope and data availability to generate actionable outcomes that are specific to our clients' needs.

What type of consulting services we provide?

- Industry market assessment (market size, competitors, regulations)
- White label reports (industry reports, company newsletters, periodic research)
- Databases (competitors' information, target clients insights)
- Company valuation (buy/sell side advisory)
- Due diligence / Business evaluation
- Feasibility studies (market and financial)
- Business plans
- C-Suite support to leaders with intellectual, industry related needs

How do we execute consulting engagement?

Our seven step process to execute consulting engagements:

- Step 1: Requirement and scope analysis
- Step 2: Proposal submission
- Step 3: Project initiation
- Step 4: Fieldwork / research
- Step 5: Analysis & reporting
- Step 6: Review & approval
- Step 7: Report submission / presentation

Published
research

Industry research
Marmore's industry reports provide information on industry structure, key players, market analysis, demand drivers, competitive analysis and regulatory requirements.

Economic research
These reports are produced as thematic discussions based on current issues in the economy. The reports aid key stakeholders such as investors, businessmen, market participants, and policy makers in understanding the impact of a particular theme on the economy.

Infrastructure research
Infrastructure research highlights bottlenecks in the sector and areas requiring urgent investments. Our infrastructure report analyses the link between economic development and infrastructure and showcases supply & demand challenges in the GCC and investment opportunities.

Capital market research
Capital market reports provide an analysis of stock & bond markets in the MENA region including outlook. These reports are strategic in nature and provides investment perspective to readers.

Policy research
Marmore has partnered with several leading thought leaders and institutions of repute to generate economic policy research studies in key areas like energy, labor, economic structure and public sector.

Periodic research
Our periodic reports capture GCC stock markets' earnings, risk premium studies, and economic development & outlook.

Regulatory research
Our regulatory research series is an effective consolidation, analysis and summary of key business, economic, and market regulations that impact business environment.