Turkey

National AI Strategy

In 2020, the Digital Transformation Office (DTO) of the Turkish government outlined a National Artificial Intelligence Strategy.[1026] The goal is to "promote the effective use of big data and artificial intelligence in public sector, through a human-centered approach . . . in collaboration with universities, the private sector and NGOs. Further, the strategy is meant to address fundamental principles such as human-centered development, fairness, transparency, trustworthiness, accountability, and commitment to ethical values. An intended output of the Strategy is also to increase nationwide awareness on data sharing and privacy and AI applications. Finally, the Strategy will contribute to implementing the G20 AI Principles, especially on human-centered values and fairness. However, there is at this time no final announcement.[1027]

The DTO will pursue several key projects including, Federated Learning and Differential Privacy technologies "with the purpose of ensuring the privacy and security of data," making Black Box algorithms explainable, and preventing misleading artificial intelligence algorithms. The National Artificial Intelligence Strategy will also set out a roadmap and priority steps for AI technologies.

The National AI Strategy follows a February 2020 workshop on AI, organized by the Ministry of Industry and Technology, and TÜBİTAK (The Scientific and Technological Research Council of Turkey).[1028] At that meeting, Dr. Ali Taha Koç, the DTO Director, emphasized the need to "develop more reliable artificial intelligence systems." He also said that "an

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[1026] Presidency of the Republic of Turkey, Digital Transformation Office, *Artificial Intelligence*, https://cbddo.gov.tr/en/artificial-intelligence

[1027] Tuba Şahin, *Turkey to launch national Al strategy: Action plan to focus on human capital, research, entrepreneurship, infrastructure and data quality, says tech minister, Anadolu Agency* (Dec. 1, 2012), https://www.aa.com.tr/en/economy/turkey-to-launch-national-al-strategy/2062061

[1028] Presidency of the Republic of Turkey, *Digital Transformation Office, Workshops on National AI Strategy and AI Institute Organized* (Feb. 19, 2020), https://cbddo.gov.tr/en/news/4701/ulusal-yapay-zeka-stratejisi-ve-yapay-zeka-enstitusu-calistaylari-duzenlendi

artificial intelligence ecosystem that is not based on ethical principles will not be successful or sustainable." He listed several principles that should govern the use of artificial intelligence to alleviate privacy concerns, including focused on people, fairness, aiming to make a positive contribution to social welfare, transparent, reliable, accountable, able to derive value from data, in line with national and ethical values.

In October 2020, at the Turkish-Hungarian Artificial Intelligence and High-Technology Conference, the Minister of Industry and Technology Mustafa Varank said that the National AI Strategy makes "special emphasis on the most important aspects of AI policies such as talent development, scientific research, ethics and inclusion and digital infrastructure."[1029] In December 2020, Mr. Varank noted at the TRT World Forum 2020 that the six priorities in the Strategy include "human capital, research, entrepreneurship, infrastructure and data quality." To date, however, no official Strategy has been published.

Turkey is currently preparing an AI Technology Roadmap to identify scientific themes, sub-technology areas and sectoral applications on which Turkey will focus its research, technological development and innovation for the next 5-10 years. This multistakeholder effort particularly supports implementation of the G20 AI Principles on inclusive growth, robustness and accountability.

Public Participation

In January 2020, to develop the AI Technology Roadmap, Turkey established a stakeholder Working Group, comprised of academia, private sector and major umbrella NGOs.[1030] The Working Group operates under the Science, Technology and Innovation Policy Council of the Turkish Presidency, via the technical contribution of TUBITAK. The Working Group will identify frontier scientific themes and priority sectoral applications of AI technologies. The working group will help ensure effective intergovernmental coordination. The exercise aims to benefit the

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[1029] Daily News, *Turkey to reveal artificial intelligence strategy* (Oct. 16, 2020), https://www.hurriyetdailynews.com/turkey-to-reveal-artificial-intelligence-strategy-159189

[1030] OECD G20 Digital Economy Task Force, *Examples of AI National Policies* (2020), https://www.mcit.gov.sa/sites/default/files/examples-of-ai-national-policies.pdf

broad AI community in Turkey, and will be implemented through direct financial support, incentives and infrastructure.

The Assembly of Turkish Scientists Abroad brings together the members of the Turkish science diaspora and the researchers working in Turkey. During the 2019 Assembly in Istanbul, current global trends and international collaboration models in artificial intelligence were discussed among Turkish scientists.

In 2019, Turkey hosted the proceedings of the 2019 3rd International Conference on Advances in Artificial Intelligence[1031] and have since contributed to multiple AI related conferences.

Turkey's Industry and Technology Strategy 2023 includes sectoral and R&D competency mapping on AI technology and AI and machine learning, with a view to strengthening Turkey's capacity of scientific research and product development.

In 2019 Turkey's Ministry of Industry and Technology published the 2023 Industry and Technology Strategy, taking a holistic approach to the fields of industry and technology, and aiming to ensure wide participation and to mobilize society.[1032] The Strategy consists of five main pillars: High Technology and Innovation, Digital Transformation and Industry Move, Entrepreneurship, Human Capital, and "Infrastructure.

Specific to AI, the Strategy will see preparation of an R&D competency map to analyze the present state of in AI technology (in particular AI and machine learning) in Turkey, notably the capacity of scientific research and product development. In 2020 a sectoral road map will be developed in cooperation with the sectoral actors, consisting of product-oriented targets in areas such as software, aviation and space. In addition, studies are ongoing for the establishment of an AI Research Institute that would act as a bridge between the public and private sectors

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[1031] ACM, *ICAAI 2019: Proceedings of the 2019 3rd International Conference on Advances in Artificial Intelligence* (2019), https://dl.acm.org/doi/proceedings/10.1145/3369114

[1032] Turkey's Ministry of Industry and Technology, *2023 Sanayi ve Teknoloji Stratejisi* (Sept. 18, 2019), https://www.sanayi.gov.tr/strateji2023/sts-ktp.pdf

by developing key technologies and providing academic results to industry for innovative implementation.[1033] The Institute held a stakeholder workshop in February 2020.

Open Data Project

Turkey's Open Data Project will establish an open data portal so citizens, researchers, public institutions and organizations, and state affiliates can "leverage data produced by public resources."[1034] As a platform for the datasets needed for developing AI technologies and applications, the initiative will contribute to fostering a digital ecosystem for AI.

The Open Data Project will be launched under the responsibility of Turkey's Presidency of Digital Transformation Office in 2020. The main focus is to establish an open data portal, but the project will also manage the regulatory and legislative steps for participation in the Open Government Partnership. The Open Data Project will provide a distributed and scaleable data management system for AI research that requires cleaned, labelled, classified and stored datasets. Initial action will establish the infrastructure required for the open data portal and raise awareness among the institutions and organisations within the digital ecosystem. In the next phase, open data collected from all public institutions and organisations will be uploaded to the portal in appropriate formats and the portal will be made available for usage. Organisations seeking to take part in the Open Government Partnership will need to meet certain regulatory and legislative requirements. The initiative also aims to provide effective coordination in preparing the labor market for digital transformation.

[1033] Daily News, *Turkey to reveal artificial intelligence strategy* (Oct. 16, 2020), https://www.hurriyetdailynews.com/turkey-to-reveal-artificial-intelligence-strategy-159189

[1034] British Embassy Ankara, *Open Data in Turkey* (March 2020), http://www.novusens.com/s/2462/i/UK-Turkey_Open_Data_Writeup_ENG.pdf

Data Protection

The Law on the Protection of Personal Data was published in April 2016.[1035] The law established the Turkish Data Protection Authority (KKVK), an independent regulatory authority. The Authority is composed of the Personal Data Protection Board and the Presidency. The mission of the Authority is to provide the protection of personal data and to develop public awareness in line with the fundamental rights related to privacy and freedom stated in the Constitution. According to the KVKK, the Protection of Personal Data law ensures:

- That data is Processed lawfully and fairly; Accurate and where necessary, kept up to date; Processed for specified, explicit and legitimate purposes; Relevant, limited and proportionate to the purposes for which they are processed; and Retained for the period of time determined by the relevant legislation or the period deemed necessary for the purpose of the processing.
- That explicit consent is required by an individual for data collection and data transfer. Further, data transfer outside of Turkey is strictly regulated.
- That individuals have the right to access and complain regarding data collection.
- That data collectors know to what extent they need to protect data and regulations for responses to individual complaints.

OECD AI Principles

Turkey is signatory to the OECD AI Principles. According to the OECD, Turkey has only addressed a few of the OECD AI principles in the AI Technology Roadmap.[1036] The OECD anticipates that there will be progress in the National AI Strategy.

[1035] KVKK, *Data Protection in Turkey,* https://www.kvkk.gov.tr/SharedFolderServer/CMSFiles/5c02cb3c-7cc0-4fb0-b0a7-85cb90899df8.pdf

[1036] OECD G20 Digital Economy Task Force, *Examples of AI National Policies* (2020), https://www.mcit.gov.sa/sites/default/files/examples-of-ai-national-policies.pdf

Human Rights

According to Freedom House, Turkey is "not free.[1037] Turkey receives low scores for political rights and civil liberties (32/100). Regarding transparency, Freedom House reports, "Although Turkey has an access to information law on the books, in practice the government lacks transparency and arbitrarily withholds information on the activities of state officials and institutions."

Algorithmic Transparency

While no official action has been taken in regard to algorithmic transparency, Dr. Ali Taha Koç, president of DTO, acknowledged the importance of transparency, security, and accountability for AI in February 2020. He said, "To eliminate the concerns that may arise, this system must first be human-centered, it must be fair, it must increase social welfare, it must be transparent, reliable, accountable, value-based, and dependent on national and ethical values. In our AI strategy, which should focus on human and ethical values, we have obligations such as creating a sustainable and production-based environment in Turkey by building an AI ecosystem, paving the way for work on AI in our country by completing the framework of data access, sharing and increasing the efficiency of all businesses and business processes in the public sector by expanding the use and application of AI technologies, sustaining this AI ecosystem by bringing up and educating qualified manpower, increasing the human benefit of each AI system to be produced, and ensuring its well-being."[1038]

Evaluation

Turkey is an emerging market for AI, and a regional leader in AI. The National Assembly of Turkey has proposed the creation of roadmaps and R&D in different technology sectors, particularly AI. There have been multiple statements by Turkish officials regarding their 2020 AI Strategy and commitment to human-centered development. Overall, despite

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[1037] Freedom House, *Freedom in the World 2020 – Turkey* (2020), https://freedomhouse.org/country/turkey/freedom-world/2020

[1038] Şule Guner, *Experts to map out Turkey's strategy on AI centered on ethics and data protection,* Daily Sabah (Mar. 4, 2020), https://www.dailysabah.com/life/experts-to-map-out-turkeys-strategy-on-ai-centered-on-ethics-and-data-protection/news

investment, participation in AI related conferences, and proposed plans and sector roadmaps, there has been little policy action and most directives, particularly the AI Strategy, are still in "planning" phases with no official publications to date. The only official policy related to AI to date is The Law on the Protection of Personal Data.